



**PART IV**  
**HUMANITIES**

## **IMPACT OF TECHNOLOGY ON BUSINESS MANAGEMENT**

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### **ABSTRACT**

*In the past few decades there has been a revolution in computing and communications, and all indications are that technological progress and use of information technology will continue. The revolution in information and communication technology has changed not only our lives but also the way how people do business. Using information technology, companies possess the potential to reach more customers, introduce new products and services quickly, and collaborate with suppliers and business partners from all over the world. Transformation from industrial society to information society and industrial economy to knowledge economy is a result of the impact of ICT and Internet use. Main objective of this paper is to describe information technology; opportunities of Internet usage for businesses to achieve strategic advantages compared to their competition and how they can facilitate the movement of goods and services from producers to customers. Advocates of Business Process (BP) approaches argue that the real value of IT is that it provokes innovative changes in business processes. Despite the fact that many BP and IT academics and practitioners agree on this idea, BP and IT design are still performed separately. Moreover, there is very little research that is concerned with studying the ways in which IT supports BP.*

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### **INTRODUCTION**

In nowadays top leaders fully realize the power of information technology (IT) tools for reaching business targets. The utilization of IT tools help not only to fulfill defined company's goals but to optimize the work processes as well. Trends and results of the contemporary studies constantly confirm contribution of the IT tools in Human Resources (HR) area i.e. to accomplish assigned HR tasks by using the source of IT capabilities. The following paper gives a brief overview about possibilities of IT usage in HR field for measuring and tracking human capital and using the HR information system generally.

Information Technology (IT) has grown and evolved over the last 50 years; you cannot think and plan a project, business or other initiative without the usage of this technology. When we say Information Technology that means not only personal computers or smart phones, but also modern machinery in factories, automotive industry, aviation industry, various household appliances etc., In one way or another this has not only facilitated our daily lives but it has also reduced cost and time in general. Research shows that a quarter of workers in the United States of America work from home for a considerable time of the year, while, another quarter work "mobile" - on the move. This reflects the great opportunities that Information Technology and the Internet provide as an important tool for implementation in organizations and public institutions. Economists

highly appreciate the importance of Information Technology in business growth, lowering costs and promoting the best products.

There is no underestimation of importance and effect of the Human Resources management at all. Lately, management of Human Resources and its needs are becoming the center of the attention of each individual employer in every organization. The orientation of company on human resources starts to be one of the key tasks of a strategic management and Human Resources play an important role in all strategic decisions. Managers of Human Resources ask for more strategic position of their department within the organization with the aim to get to the essence of the problem how to manage, to motivate and to increase the performance of organization.

### **AN OVERVIEW OF INTERNET AS A RESOURCE**

Using ICT also facilitates the production of goods in a short time with the help of computerized information systems, and services are quick and effective (Miles, 2001, 232). Information and Communication Technology known as ICT technology has become the main tool in business activities in the modern world (Dimovski & Škerlavaj, 2004, 636). Internet is becoming part of everyday life for the whole world. In recent times electronic business has developed in an important business discipline.

## **ELECTRONIC BUSINESS**

E-business (electronic business) consists of the conduct of business processes on the Internet. These electronic business processes include buying and selling products, supplies and services; servicing customers; processing payments; managing production control; collaborating with business partners; sharing information; running automated employee services; recruiting; and more. E-business can comprise a range of functions and services, ranging from the development of intranets and extranets to e-service, the provision of services and tasks over the Internet by application service providers. Today, as major corporations continuously rethink their businesses in terms of the Internet, specifically its availability, wide reach and ever-changing capabilities, they are conducting e-business to buy parts and supplies from other companies, collaborate on sales promotions, and conduct joint research.

### **THE HUMAN RESOURCE ROLE IN INFORMATION TECHNOLOGY RECRUITING**

In nowadays, managers realize that human capital has become the last competitive benefit and IT recruiting can broadly support efficient hiring together with forming the workforce. In order to attract the best candidates, it is vital that both HR and IT departments cooperate together. The HR role in IT recruiting is of key importance, including time of crisis. The "war of talents" carries on, despite the current crisis. The HR IT tools can support hiring and retaining a high potential. It begins with launching the career website what is a very good promotional tool. Employer can present all necessary information related to job, careers or personal development of each applicants there. The career website should focus not only on potential employees, but target group should also include the students, graduates or school pupils in order to have a possibility to "raise" new employees for the future.

### **SIGNIFICANCE OF IT IN EDUCATIONAL SECTOR**

In the era of technology, IT aids plenty of resources to enhance the teaching skills and learning ability. With the help of IT now it is easy to provide audio visual education. The learning resources are being widens and widen. Now with this vivid and vast technique as part of the IT curriculum, learners are encouraged to regard

computers as tools to be used in all aspects of their studies. In particular, they need to make use of the new multimedia technologies to communicate ideas, describe projects, and order information in their work. IT has provided immediacy to education. Now in the year of computers and web networks the pace of imparting knowledge is very fast and one can be educated anywhere at any time. New IT has often been introduced into well-established patterns of working and living without radically altering them. For example, the traditional office, with secretaries working at keyboards and notes being written on paper and manually exchanged, has remained remarkably stable, even if personal computers have replaced typewriters.

### **TECHNOLOGY AND ORGANIZATION**

This study does not focus back to the industrial revolution, still it ensures that the development of technology has influenced the organization. Instead 'new technology' 'usually refers to a particular set of changes that have occurred from the 1970's onwards... brought on by the development of microchips.' (Arnold, Robertson & Cooper, 1995). The relationship between manpower levels and technology is less obvious in non-manufacturing industries, where the output is less substantial (Dawson, 2007. p29). The link between technology and organization was first illustrated by Joan Woodward in mid 1960s. On the basis of a research which focused on production technology she was the first to view the organizational structure from a technological point of view. During 1950s, Woodward putting in mind the technical complexity of the manufacturing process built up a measurement scale on which firms were distinguished. With the result that high technical complexity implied that most of the work was performed by machines, whereas low technical complexity specified that workers participate almost all in the course of action.

### **CONCLUSION**

It is also in the interest of an organization to keep and follow an open communication policy about the forthcoming technological changes in the system. All likely to be affected or otherwise concerned must be kept informed and should be kept in picture right from the initial stage. Employees should have access to all information about the changes an organization intends to bring and the skills that will be required for that. Information Technology and the Internet are not only important features for the facilitation of

communication between people but, they are a way that creates new business models, by changing the development of business and transforming them in a positive manner. The Internet can be considered as a strategic resource where companies can promote their work and services as well as to expand into new markets. Companies that utilize this new technology can be

more efficient in conducting business activities and create competitive advantage. Electronic business has changed the economy, society and politics. This is the main reason why enterprises which are in tighter competition today are orientated towards the market fulfilling the requirements of the buyers.

### REFERENCES

1. Abrahamson, E. (2000). Change without pain. *Harvard Business Review*, 78(4), 75-79.
2. Acemoglu, D., & Robinson, J. A. (2000). Political Loosers as a barrier to economic development. *The American Economic Review*, 90(2), 126-130.
3. Bijker, W.E. (1995). *Of bicycles, bakelites, and bulbs: Toward a theory of socio technical change*. Cambridge, MA: The MIT Press.
4. Boland, R.J., Lyytinen, K. & Yoo, Y.(2007). Wakes of innovation in project networks: The case of digital 3-D representation in architecture, engineering and construction. *Organization Science*, 18, 631– 647.
5. Chataway, J., Tait, J. & Wield, D.(2007) Frameworks for pharmaceutical innovation in developing countries - the case of Indian Pharma. *Technology Analysis & Strategic Management*, 19(5), 697-708.
6. Chroner, D., & Stenlund, K.L.(2006) Determinants of an effective product development process: Towards a conceptual framework for process industry. *International Journal of Innovation Management*, 10(3), 237–269.
7. BONDAROUK, T.V., RUËL, H.J.M. Electronic Human Resource Management: challenges in the digital era. *The International Journal of Human Resource Management*. Vol. 20, No. 3, March 2009. 505P.
8. LEE, CH. S., LEE, CH. H., Effects of HRM practices on it usage. *Journal of Computer Information Systems*. Winter 2009.
9. POWELL, T. C., DENT-MICALLEF, A. "Information Technology as Competitive Advantage: The Role of Human Business, and Technology Resources," *Strategic Management Journal*. 1997.
10. DeSANCTIS, G. Human Resource Information Systems: A Current Assessment. *MIS Quarterly*, 10. 1986.

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## **HUMAN RESOURCE MANAGEMENT THROUGH INFORMATION TECHNOLOGY**

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### **ABSTRACT**

*In nowadays top leaders fully realize the power of information technology (IT) tools for reaching business targets. The utilization of IT tools help not only to fulfill defined company's goals but to optimize the work processes as well. Trends and results of the contemporary studies constantly confirm contribution of the IT tools in Human Resources (HR) area i.e. to accomplish assigned HR tasks by using the source of IT capabilities. The following paper gives a brief overview about possibilities of IT usage in HR field for measuring and tracking human capital and using the HR information system generally. Managed information technology all science can influence and establish a relationship with the complex among the important role has played in all scientific fields. Information technology has caused today no boundaries and distance world, for circulation there is no information and all aspects of human societies. Like how to live, work and Human Resource Management in organizations, offices and unexpected extent. The subject has been these changes will be effective when the domain ICT activities identified and the creation of these activities will be provided. In this paper, a brief review the impact of technology information the Human Resource Management the business objectives of the organization and satisfaction of employees has been set.*

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**Keywords:** *Human resource management, information technology, manpower management,*

### **INTRODUCTION**

Social and organizational changes in the economic environment are numerous and extensive. According to that, it is important for human resource management (HRM) to be comprehensive, high in quality, fast, flexible and in line with upcoming trends, because it is one of the parameters of successful business. Use of information and communication technology becomes an imperative for HRM, as well as the other activities in the company. Today all company realized that human resources are their greatest capital for the growth of the organization. The process of growth and development without human involvement is meaningless because human is the target and also means of achieving progress. The bases of human resources development are the presence of new and experimental information and the information is a rational process called information technology (IT) that can help to create and build up new strength in human resources. One of the main factors affecting nowadays is company and worker is changing according to new technology. Today's information technology has shown continuous development. Technology and HRM have a wide range of impact upon each other and therefore human resource professional should be eligible to adopt technologies that allow the re-

engineering of the HR action, be prepared to maintain organizationally and work project changes caused by technology, and be able to maintain a proper managerial climate for innovative and knowledge-based organizations. Information and communication technologies (ICT) -an umbrella term for technologies combined with the internet, new media (social media), mobile communication and computers-allow the organization to renovate their internal processes, structures, core competencies and relevant markets on a global scale. Information and communication technologies (ICT) are running throughout each sector of the economy and have implications for almost every enterprise.

### **OVERVIEW OF MANPOWER PLANNING PROCESS**

Forecasting of staff requirements is well established in Human Resource Management vocabulary. It is assumed that manpower planning (human resource planning) has influence on companies' performance because whatever businesses do, they cannot ignore the human aspect. Therefore, Armstrong [18] seems to suggest that manpower planning contributes to organizations earnings/returns by reducing costs, employees training, associating with modern environmental and technological changes are

several considerable advantages of human resource planning. By observation, a considerable number of management challenges may be resolved through the recruitment of capable employees. This HR activity cannot be overlooked in any established enterprise. They indicated that staffing enables companies to know current employees strength in order to predict for the future. Training and Development: Usually done to beef up employees capabilities to meet current business trends. This HR activity is enforced often after conducting performance appraisal. By this means, training and development might assist management to identify labor deficiencies, if any, in the company. Career Development: Career development appears to be a crucial HR exercise which project into the future. This practice seems to endorse succession planning principles to guarantee the enterprises continual existence. Career development gives employees the chance to upgrade themselves for mutual benefit. This HR activity creates the platform to either add to the number of employees or lessen the size. Downsizings: Management decision with respect to upcoming downsizing should be reported to officers to prevent any operations interruption.

### **EVOLUTION OF HUMAN RESOURCES TECHNOLOGY**

HR technology can be defined as any technology that is used to attract, hire, retain, and maintain human resources, support HR administration, and optimize HRM. This technology can be used in different types of human resource information systems (HRIS) and by various stakeholders, such as managers, employees, and HR professionals. This technology can be accessed in different ways. There is no doubt that technology has made it easier and faster to gather, collate, and deliver information and communicate with employees. More importantly, it has the potential to reduce the administrative burden on the HR department so it is better able to focus on more meaningful HR activities, such as providing managers with the expertise they need to make more effective HR related decisions. Research has indicated that companies who effectively use technology to manage their HR functions will have a significant advantage over those that do not.

### **THE HUMAN RESOURCE ROLE IN INFORMATION TECHNOLOGY RECRUITING**

In nowadays, managers realize that human capital has become the last competitive benefit and IT recruiting can broadly support efficient hiring together with forming the workforce. In order to attract the best candidates, it is vital that both HR and IT departments cooperate together. The HR role in IT recruiting is of key importance, including time of crisis. The “war of talents” carries on, despite the current crisis. The HR IT tools can support hiring and retaining a high potential. It begins with launching the career website what is a very good promotional tool. Employer can present all necessary information related to job, careers or personal development of each applicants there. The career website should focus not only on potential employees, but target group should also include the students, graduates or school pupils in order to have a possibility to “raise“ new employees for the future.

### **HUMAN RESOURCES MANAGEMENT AND EMPLOYABILITY**

The Human Resources (HR from now on) function currently finds itself in an unprecedented situation. According to some authors, this function has already experienced numerous changes and has gone a long way. This is obviously true and so far, it has been adapting to the changes occurring in its environment, mainly because those changes were slow and, to some extent, foreseeable. However, the opposite happens now; the speed at which changes are occurring is increasingly high and the course the business world is taking is also more and more unforeseeable. This is why HR managers will not only have to make mere adaptations, but face true organizational transformations.

### **CONCLUSION**

Globalization brings the requirement to think how IT can contribute to fulfillment of business strategy in the frame of Human Resources management in order to steer the business towards excellence and reach competitiveness in the market. Despite the fact questionnaire revealed that information technology sustains reaching the HR goals moderately, precise plan of implementation of HR information system can significantly support HR strategy in the company to attain defined key performance indicators (KPI). The project should mainly contain what has to be achieved it means how IT tools can support the

KPI and which kind of HR processes IT tools should sustain. The research will be extended by further survey. It is clear from all the dissection that information technology benefits internal operations of the organization to a large extent. Use of computer, printer, and fax machine, telephones, robots etc. helps in the movement of information very quickly. With the help of information technology, HRM plan is made more

quickly and job performance becomes effective. Information technology is a set of software and hardware for employee and organization and plays important role in the human resource development. Information technology has an influence on all the sector of human resources management in terms of planning and management, recruitment, training and development and maintenance functions.

### REFERENCES

1. Ahmadi, A. (2011). "The Role of Information Technology in Planning the Organization Resources E-Journal of Elites, Elite National Foundation of Azerbaijan –E-Sharghi," pp15.
2. Davoudi, A. (1999). Development of Human Resources and Administration. Tadb Journal Tehran, 41. Gardner, S.D., Lepak, D.P and Bartol, K.M. (2003). Virtual HR: The Impact of Information Technology on the Human Resources Professional, Journal of Vocational Behavior, vol 63(2), pp 159-179.
3. Ghorbani, M., & Sangani, S (2011). "The role of Information Technology on the Organizational Effectiveness in Mashhad City Hall" World Applied Sciences Journal, vol 13(9), pp 2095-2107.
4. Hendrickson, A. R (2003). "Human Resources Information System: Backbone Technology of Contemporary Human Resources" Journal of Labor Research, vol 24(3), pp 3781-394.
5. Hajizade Moghadom, A., & Vajdi Dastgerdi, S.S. (2010). "Information Technology Projected Based Organization and Employee Satisfaction: A Case Study of Iran. Word Applied Science Journal, vol 10(10), pp 1176-1184
6. Bal, Y., Bozkurt, S. and Ertemsir, E. (2012) The Importance of Using Human Resources Information Systems (HRIS) and a Research on Determining the Success of HRIS. Knowledge and Learning: Global Empowerment. Proceedings of the Management, Knowledge and Learning International Conference 2012, International School for Social and Business Studies, Celje, 20-22 June 2012, 53-62.
7. Rodriguez, J.M. and Ventura, J. (2003) Human Resource Management Systems & Organizational Performance: An Analysis of the Spanish Manufacturing Industry. International Journal of Human Resource Management, 14, 1206- 1226.
8. Troshani, I., Jerram, C. and Rao, S. (2011) Exploring the Public Sector Adoption of HRIS. Industrial Management and Data Systems, 111, 470-488.

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## **A STUDY OF HIGHER EDUCATION IN INDIA: GAP IDENTIFICATION & CHALLENGES**

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### **ABSTRACT**

*Education in India has evolved over time right from the ancient period where the sole learning method was the knowledge of the Gurus. Many schools and universities were set up during the British rule to promote western education in India. There has been a tremendous growth in the education sector over the period of past few decades with a significant number of top universities and disciplines established providing more and more options for the learners. The government has played its part in making sure that large masses are catered to, with a number of schools and universities opened in the country. This research paper focuses on collecting insights from stakeholders of higher education system and identify existing gap in terms of entrance examinations and stream selection for higher education. Research concludes necessity of fundamental change in higher education model and selection process with the help of primary research data.*

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**Keywords:** Higher Education, Stream Selection, Admission Process

### **INTRODUCTION HISTORY OF EDUCATION IN INDIA**

The history of education in India can be traced back to the ancient era. Education in this era began around the 3rd century B.C with methods of religious training and traditional knowledge. Sages, at that time along with other scholars imparted education orally. Palm leaves and bark of trees were used for writing. These ancient schools in India were residential in nature with the sishyas or students living in the same house with the Guru or the teacher. The teacher imparted knowledge of philosophy, literature, warfare, medicine, history and astrology.

### **HIGHER EDUCATION IN THE MEDIEVAL PERIOD**

The first millennium and the few centuries before that saw the flourishing of higher education at Nalanda, Ujjain, & Vikramshila Universities. The major subjects included art, architecture, Grammar, Philosophy, Astronomy, Literature and religious philosophies of Buddhism & Hinduism, Arthashastra (Economics & Politics), Law, and Medicine were the main subjects. Education in medieval India expressed a new perspective in the 11th century. This further led to the commencement of universities like Delhi, Allahabad and Lucknow. There was a fresh interaction between the Indian and the Islamic

traditions in the fields of knowledge like theology, philosophy, fine arts, religion, crafts & painting, architecture, mathematics, Ayurveda, medicine and astronomy.

### **HIGHER EDUCATION IN MODERN BRITISH INDIA**

The educational system in this period was introduced by the British and it involved the teaching of English language with a greater emphasis and the study of languages like Arabic, Persian and Sanskrit were left to individual efforts. The main objectives of introducing English in the modern period included – reduction in the expenditure of administration, encouraging the use of English in schools and expand the market for English goods. According to Lord Macaulay, Indians after receiving modern education would remain Indians only by color while their interests, ideas, morals and intelligence would change. The Britishers took various steps to introduce Western education in India including opening up of colleges and schools where English would be taught. They also allowed popular leaders like Raja Ram Mohan Roy to start colleges where English could be taught. For government jobs, only Indians with the knowledge of English were appointed.



### HIGHER EDUCATION IN POST-INDEPENDENCE ERA

After independence, education became the responsibility of states. The Central government's only obligation was to coordinate in technical and higher education and specify standards. It was only in 1976, that education became a joint responsibility of the states and the Centre. The constitution of India provides education as a fundamental right. Over the years, India made progression in terms of increasing primary education and expanding the literacy among its population. A lot of money and effort was put up in order to provide better school and college facilities for the students. Traditional old universities including Delhi University, Allahabad University, Aligarh Muslim University started many courses to attract new talent and uplift the level of Indian education.

### HIGHER EDUCATION IN MODERN INDIA

India has started catching up to the levels of foreign universities over the past few decades. A lot of management, commerce, engineering and medical colleges in India provide courses that are looked after even in many countries. With the help of international tie ups and rich quality of faculty, India has improved in the education sector and gained international momentum. There has been a tremendous growth in the number of foreign students coming to India for courses like medicine, Ayurveda, Yoga, Engineering, Hotel management etc.

Indian higher education system is the third largest in the world, next to United States and China. Today, there are total 677 universities in India which is almost 34 times the number in 1950<sup>1</sup>. The Ministry of Human Resource Development, Government of India manages 45 Central Universities. In addition, there are total 318 State Universities managed by government fund and 185 State Universities managed privately. India also has 129 deemed to be independent universities and there are 51 Institutes of National Importance which includes prestigious institutions like IITs, NITs and AIIMS<sup>2</sup>. These universities have been pioneers in the innovation field and a source for talent pool.

With the introduction of digitization, India has also made early inroads with smart classes, online virtual classrooms being the most sought after factors that attract many parents for their child's education. Online assignments, virtual guest lectures, smart labs have helped the school sector

immensely. Social media has also played its part with a lot of online courses emerging and reaching to the interested students. These online courses have helped in virtually eliminating the concept of long distance programs and have helped reach a greater mass at nominal prices. With the help of such improvisations, there has been a tremendous competition among institutions, which has led to prevailing of better facilities and opportunities for the students<sup>3</sup>. Courses like six sigma, project management, digital marketing, supply chain, inventory management which have become a necessity in today's corporate world have been made available to the prospects at the tip of their fingers. With new and upcoming advances in technologies like SMAC, Big data analytics, the trend is just getting bigger and better for education in India.

### RESEARCH METHODOLOGY

For analyzing feedback and perception of current status of education system, a primary research was conducted. The purpose of this survey is to find out opinions of students and alumni of various higher educational institutions. The survey questionnaire was filled by 110 respondents across India and sampling method used for the survey is random sampling. Questionnaire was designed to collect data on multiple front including higher education plan, stream selection and necessity of fundamental change<sup>4</sup>.

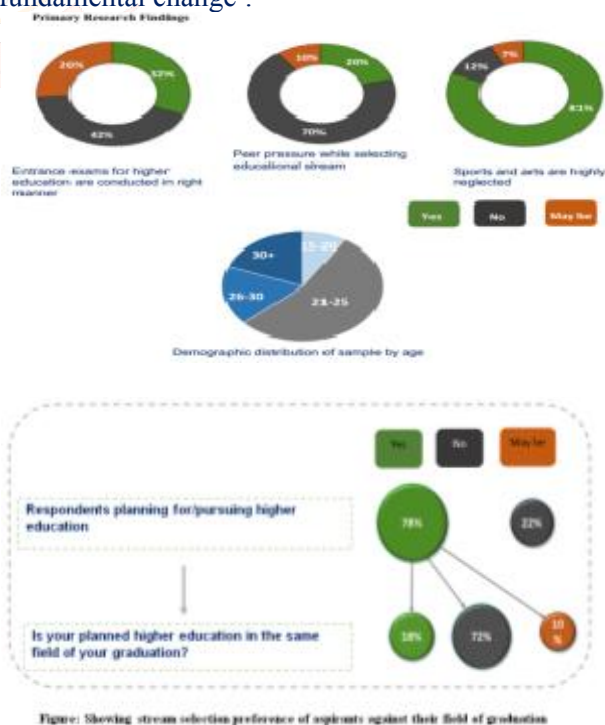


Figure: Showing stream selection preference of aspirants against their field of graduation



Figure: Showing necessity of fundamental change in higher education model

## **RESULT AND DISCUSSION MODIFIED ADMISSION PROCESS**

For higher education admissions, students in India have to appear for various entrance examinations like CAT (MBA), GATE (M.Tech), JAT (M.Sc), etc.<sup>5</sup> Most of these entrance exams consist of multiple choice questions with four options. 42% surveyed respondents feel that the way entrance exams are conducted in India is not the right way. I propose an educational model in which entrance exams are combination of multiple choice questions, fill in the blanks type and short answer type questions. There is high possibility of speculation of answers for multiple choice questions. In addition to entrance exams score, there should be a certain weightage to candidate's extra-curricular and co-curricular activities. 81% of surveyed candidates believe that sports and arts are highly neglected in Indian education system. To overcome these shortcomings, student's contribution in sports and arts should be given a credit by including them as one of the criteria for college admissions. Indian Institute of Management, Ahmedabad popularly known as IIM-A, follows an excellent method for MBA admissions. They shortlist candidates based on their CAT scores and shortlisted candidates are called for WAT (written ability test) and personal interviews. Other institutes can develop their admissions model on similar steps.

### **SELECTION OF EDUCATIONAL STREAM**

Since, I have gone through similar phase when I was selecting my stream of education, I can totally relate myself and agree with 30% of respondents who said Yes or May be for being a victim of peer pressure. Majority of Indian parents want their child to become an engineer or a doctor. Engineering, Medical Sciences, Laws and Management are so called 'better' streams of education in India. Furthermore, there is this social convention based on how much student scores in

board exams which says, one who scores 85% and above should go for science, one between 60-85% should go for commerce and 60% and below should go for arts. You will hardly find someone above 80% in board exams, opting for arts. No parent motivates their child to become an actor or a singer or a sportsperson. All students are made to go through the same rat race and this has been happening for years.

Highly competitive education system in India makes students go through fierce competition from the beginning and anything done against the flow is heavily criticized. As a result, most of the students end up in stream not belonging to their field of interest and this is clearly reflected from the survey analysis. Out of 78% respondents who were interested in higher education, 72% of candidates want to change their field of graduation. In India usually graduation is for 4 years followed by higher education which most of the times takes 2 years (Masters) or 4 years (PhD) and 72% of candidates have no interest in the field which they studied for 4 years during graduation.

The only solution for this situation is to work on root cause. Mere objective of school education should not be to train students to pass exams. Schools should try to diverge from traditional 'chalk and talk' system to skill based system, from memorizing formulae to applying concepts, from theory to experiential learning. Ideal model of higher education would be the one in which students pursue higher studies not just to shift away from their existing stream of education but they do so in order to pursue their interest further.

### **CONCLUSION**

In colonial times, the British introduced education system in India to create civil servants and clerks. We are still following the same model in 21<sup>st</sup> century. The spirit of leadership and entrepreneurship is missing from the system. The core purpose of education is to make a person a complete human being. As one of our professors at IIT Delhi, Dr. Seema Sharma<sup>6</sup> says, "you all should want to be job givers and not job seekers." As mentioned in the survey analysis given below, 88% of people think, there is necessity of a fundamental change in Indian education system. Almost all of them which is 84% are optimistic about it and believe that this type of change is possible in the education system. 16% people believe that a change is required but they have given up all of their hopes about system and

believe the required change is never possible in the current scenario.

77% of surveyed population believe that there can be a paradigm shift in the form of thought revolution by bringing in these fundamental changes in our system. As Nelson Mandela once said, "Education is the most powerful weapon which you can use to change the world".<sup>7</sup>It can

break down barriers, change our lives and equip students to become future leaders, responsible citizens and great human beings. A model which focuses on skill based education, which rewards originality, creativity, research and innovation, which undergoes 360<sup>0</sup> evaluation of students and not just exam marks, is the need of the hour.

### REFERENCES

1. Higher Education in India at a Glance: UGC report. (2015). India Education Review. Retrieved 13 June 2016, from <http://www.indiaeducationreview.com/features/higher-education-india-glance-ugc-report>
2. University and Higher Education | Government of India, Ministry of Human Resource Development. (2016). Mhrd.gov.in. Retrieved 10 June 2016, from <http://mhrd.gov.in/university-and-higher-education>
3. Kapoor, K. (2013). Indian Youth: Unemployed or unemployable? The Hindu. Retrieved from <http://www.thehindu.com/features/education/careers/unemployed-or-unemployable/article5486730.ece>
4. Responses given by surveyed sample
5. Detailed List of Entrance exams in India. (2016). Mapsofindia.com. Retrieved 22 June 2016, from <http://www.mapsofindia.com/education/exam/>
6. Dr. Seema Sharma (Ph.D., IIT/D), Associate Professor, Economics & Statistics, LinkedIn: <https://in.linkedin.com/in/seema-sharma-6431bb24>
7. A famous quote by Nelson Mandela, former president of South Africa, 1993 Nobel Peace Prize laureate. It is said that Nelson Mandela quoted this in his prison time during his fight against South Africa's apartheid regime. United Nations Resources for Speakers on Global Issues - Home. Un.org.



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## **MUST HAVE SCIENCE AND TECHNOLOGY: BANKING PERSPECTIVE**

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### **ABSTRACT**

*The Government of India, with the demonetization initiative clearly indicates that their action plans to transform Indian cash-based traditional economy to a digital economy. The Goods and Services Tax called GST system, which is set to be effective from July 1, 2017 has been built on a largely digital foundation and is expected to provide a considerable push to the economy's digitization efforts and greatly influence future trends in banking.*

*There is no doubt that the digital era is the future. Application of it in practice is the challenge in India like country, because we the India is still in dilemma of acceptance or repel the recent trends of banking and technology. Likewise, banks also have to ensure that they remain relevant in today's rapid-changing world of information.*

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**Keywords:** Banking, CRM, Science & Technology

### **INTRODUCTION**

The term 'Banking Technology' refers to the use of sophisticated information and communication technologies together with computer science to enable banks to offer services to its customers in secure, reliable and affordable manner and sustain competitive advantage over the other banks. The technology has three important dimensions-

- i. The use of appropriate hardware for conducting business and servicing the customers through various delivery channels and payments systems and the associated software constitutes one dimension of banking technology. The use of computer networks, security algorithms in its transactions, use of ATM and credit cards, Internet banking, telebanking and mobile banking are all covered by this dimension. The advances made in information and communication technologies take care of this dimension.
- ii. On the other hand, the use of advanced computer science algorithms to solve several interesting marketing related problems such as customer segmentation, customer scoring, target marketing, market-basket analysis, cross-sell, up-sell and customer retention etc. faced by the banks to reap profits and outperform their competitors constitutes the second dimension of Banking Technology. This dimension covers the implementation of a data warehouse for banks and conducting data mining studies on customer data.

iii. Moreover, banks cannot ignore the risks that arise in conducting business with other banks and servicing their customers, for otherwise, their very existence would be at stake. An eminent business advisor, speaker and author Ram Charan said that, "The old path is dead. I repeat: the old path is dead." Banks from around the world gathered to discuss how to grapple with digitalization. You have to completely change your mindset from "build it and they will come" to "outside in" – to have the customer pull.

It is no longer about the product as it used to be. Now it is all about customer experience. It is "an unstoppable trend". There is no escape from it– so banks must not resist it, but instead they should embrace and master it, and do it fast! To survive and thrive in the digitalized world, you must become "an attacker". Or you will perish.

### **OBJECTIVES**

1. To study the contribution of technology in the banking
2. To find the scenario of banking without technology.

### **INDIAN PERSPECTIVE**

The year 2016 was surely or indisputably full of obstacles and speed breakers, disruptions on a global scale. The incidents of past two years most noticeable are as follows-

- a. Indian demonetization drive
- b. The elections of United States of America and
- c. 'The Brexit'

All these have started to or are soon expected to create root level and far-reaching impacts on globalization. Of these, the banking and financial sectors are the ones that are likely to witness the most changes. Looking at the context related to India, on one side are traditional banks that are still restricted by legacy systems and processes. On the other, a global, digital India has entered an age of innovation with the adoption of modern & updated technology. Nevertheless, despite their legacy systems, Indian banks are leading the digital transformation by constantly reinventing their business to stay ahead in this age of digital hyper-connectivity.

The new financial year can be expected to fuel growth in the banking sector with the development of latest innovations like

- Unified Payments Interface (UPI),
- Adoption of cloud technology,
- Banking through android apps etc.

Some of the key technology trends that will reshape Indian banking are as follows:

#### **OPEN BANKING**

In 2017, many banks have already introduced and are operating their open, unified solutions and many more are likely to follow. Consequently, this will facilitate the creation of a well-connected financial and non-financial ecosystem of multiple, interconnected services and service providers.

The recently launched Unified Payments Interface (UPI) by the National Payments Corporation of India (NPCI) will particularly serve as a gateway to future innovations in the open banking domain. UPI also promises to enable payment service platforms to enhance their products and offerings without being bound by account relationships.

#### **CLOUD TECHNOLOGY**

Cloud computing is the one technology that supports many other disruptive technologies such as Big Data, artificial intelligence (AI), blockchain, IoT. The more progressive banks around the world have already made significant headway with the adoption of cloud computing, and Indian banks are fast warming up to its many benefits. They have begun to realise the degree of agility it brings into business, a fact that has already been evident through the success of fintech companies. As a result, business models for banks and fintech companies in the future are expected to give much greater emphasis to cloud computing. Demonetisation has propelled India's move towards being a cashless society, or at least a less

cash-dependent society; cloud technology will provide banks the much-needed bandwidth to deal with the rising demand for and scale of digital transactions.

#### **BLOCKCHAIN**

Blockchain will be a substantial force enabling banks through the process of reinvention and satisfy increasing customer demands. However, this will not be the year when blockchain goes mainstream, but banks will take specific projects from pilot to production stage and power inter-organisational processes through blockchain. A partnership between Emirates NBD and ICICI Bank announced in October 2016 will see the launch of a blockchain pilot network to process international remittances and trade finance and is expected to herald the transition of blockchain into mainstream banking in the country.

#### **ARTIFICIAL INTELLIGENCE**

Artificial intelligence (AI) has the potential to transform both front office and back office operations with its self-improving programs. The brilliance of AI has already been evident in the enhanced customer experiences and seamless, differentiated services on digital channels. It has also helped in creating advanced security measures by integrating with banking infrastructure. The use of intelligent digital assistants is now common in some of the more developed banking markets like US, Japan and Hong Kong. The self-learning capabilities of these programs help them get better with every subsequent interaction.

#### **SIMPLIFYING BANKING ARCHITECTURE**

The foundation for the integration and development of any of the above technologies will be the simplification of banking architecture. Banks will gradually break down their architecture into components in place of the conventional monolithic structure. Simply put, complex architecture will be split into smaller fragments for easy deployment and upgradation of certain functionalities. Besides enabling agile modernisation to keep up with technological trends, compartmentalisation will also allow to mitigate risks associated with specific projects. In addition, banks will be able to enhance their capabilities further through the implementation of enterprise-class applications.

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### CONCLUSIONS

1. Customers today desire maximum flexibility.
2. Unified interoperable interface guarantees, allowing for innovation among service providers to drive improved customer experiences.
3. The mobile-first strategy has been adopted by many Indian banks to provide customized offerings through mobile apps.
4. There are other methods of customer interaction besides apps such as smart virtual personal assistants on mobiles that can drive greater, more interactive customer engagement.
5. New-age service providers are leading by example; Ola Cabs now allows customers to make bookings through Siri. So, it wouldn't come as a surprise if Siri soon helps you move money around or open a new fixed deposit account with your bank.

### SUGGESTIONS

1. Digital takes priority over traditional innovation, as it is digital that enables banks to innovate.
2. Identify the right partners to create an ecosystem – as this is how all banks will eventually operate. Gain competence to govern and manage it.
3. Banks should oversee the end-to-end customer experience.
4. They have to make room for new core competencies and technologies driven by algorithms.
5. Banks should slash their internal costs by one third to free the budgets to invest in digitalization. The speed of cost cutting is vital.
6. Banks should create the talent pool that understands customer experience.
7. They have to make sure transition time to digitalization does not take more than two years.
8. Banks shouldn't resist the speed of change, see the opportunities, and have the mindset to accept the new.

### REFERENCES

1. Vadlamni Ravi, Introduction to Modern Banking Technology and Management (2012)
2. R.K.Uppal , Banking with technology (2008)
3. A.C.Shah, Human Face of Indian Banking (2005)
4. <http://www.bankingtech.com/2018/02/banking-technology-february-2018-issue/>
5. <http://www.cxotoday.com/story/tech-trends-change-banking-experience-in-india/>
6. A.S.Nile, Research Nebula Vol.III, Issue-I, Apr-2014, Buldhana Jilhyatil Adhikoshnamadhye Grahak Sambandh Vyavasthapan ani Mahiti Tantrdnyanachi Bhumika,
7. Dr. A.S.Nile, Printing Area, Vol-1, Issue-16, April-2016, Use of online banking: An analytical study of Manora region of washim District

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## **IMPACT OF CLOUD COMPUTING ON E-COMMERCE AND INDUSTRY**

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### **ABSTRACT**

*Cloud computing is a recent trend in information technology, utilization of cloud computing in E-commerce and retail industry increasing day by day. The system of cloud computing was developed by Google in 2007, It was only conceptual before 2007 but now Google developed the conceptual in to practical and now it is famous in to the E-commerce and retail industry. This paper try to make focus on the influence of cloud computing on E-commerce and Retail Industry.*

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**Keywords:** *Cloud, Technology, Trend, E-Commerce, Virtualization, Processing, Computing, Computer Application,*

### **INTRODUCTION**

Cloud computing is a complete new technology. It is the development of parallel computing, distributed computing grid computing, and is the combination and evolution of Virtualization, Utility computing, Software-as-a-Service (SaaS), Infrastructure-as-a-Service (IaaS) and Platform-as-a-Service (PaaS). Cloud is a metaphor to describe web as a space where computing has been pre installed and exist as a service; data, operating systems, applications, storage and processing power exist on the web ready to be shared.

E-commerce came into existence since late 1970s. It was supposed to provide how the business transactions are made electronically through EDI (Electronic Data Interchange). ETF (Exchange-Traded Fund) cloud computing and e-commerce are both widely used because of their cost effectiveness. The cloud computing allows organizations to conduct business without having to develop and maintain IT infrastructure. E-commerce gives the flexibility for business to sell products online without having to physically rent an office space. These days, many more e-commerce companies take advantage of the benefits of cloud computing

Google believes that the cloud computing should provide consumers data storage and computing services in a secure, fast and the most convenient possible way . According to Mell and Grance , the cloud computing allows users to customize network related resources, applications, and services based on the demand. Another definition of the cloud computing is a dynamic computing environment which allows scalability and provides

virtualized resources as service through the Internet

### **CLOUD COMPUTING**

Many researcher defined cloud computing, according to [6] “moving computer applications and programs to the Internet from the desktops”. NIST define the cloud computing as “Cloud computing is a model for enabling convenient, on demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.” [7]. From the definition of NIST there are four main services classified as cloud services which are; Cloud providers and infrastructures, cloud platforms, cloud software’s and cloud data storages. Most researchers [7-13], focused on three classifications which are Infrastructure as a Service (IaaS), Platform as a Service (Paas) and Software as a Service (SaaS).

### **LAYERS OF CLOUD COMPUTING**

There are three main layers for cloud computing Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS) [8, 14, 15]. Infrastructure as a Service (IaaS) the capability provided to the consumer is to provision processing, storage, networks, and other fundamental computing resources where the consumer is able to deploy and run arbitrary software, which can include operating systems and applications. The consumer does not manage or control the underlying cloud infrastructure but has control over operating systems, storage, deployed applications, and possibly limited control of select

networking components (e.g., host firewalls). Platform as a Service (PaaS) the capability provided to the consumer is to deploy onto the cloud infrastructure consumer-created or acquired applications created using programming languages and tools supported by the provider. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, or storage, but has control over the deployed applications and possibly application hosting environment configurations. Software as a Service (SaaS) the capability provided to the consumer is to use the provider's applications running on a cloud infrastructure. The applications are accessible from various client devices through a thin client interface such as a web browser (e.g., web-based email). The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, storage, or even individual application capabilities, with the possible exception of limited user-specific application configuration settings.

### **CLOUD COMPUTING DEPLOYMENT**

There are four cloud deployment models Public cloud, Private cloud, Hybrid cloud and Community cloud. According to [16] a public cloud is services and resources clouded over internet to provide web site services and resources online. These public clouds offer services for organizations and users to benefit for the web site shared resources. Based on [14] A private cloud is The cloud infrastructure is operated solely for an organization. It may be managed by the organization or a third party and may exist on premise or off premise. The main aim of private cloud is to share the data, services and resources between the employees inside the organization. Therefore, through private cloud provide efficient work environment to maximize the performance of organization's outcomes and save the time and money costs. The Hybrid Cloud is combination between private and public cloud [14]. Through hybrid cloud the organization can provide some task using public cloud and other tasks using private cloud

### **BENEFIT OF CLOUD COMPUTING**

While their motivations vary, businesses of all sizes, industries, and geographies are turning to cloud services. According to Goldman Sachs, spending on cloud computing infrastructure and platforms will grow at a 30% compound annual growth rate (CAGR) from 2013 through 2018

compared with 5 percent growth for overall enterprise IT. Cloud adoption is accelerating faster than previously anticipated, leading Forrester to recently revise its 2011 forecast of the public cloud market size upward by 20 percent. Whether you're looking at Software-as-a-Service (SaaS), Infrastructure-as-a-Service (IaaS), or Platform-as-a-Service (PaaS), the predictions are the same: fast growth of the workloads placed in the cloud and an increased percentage of the total IT budget going toward cloud computing. The benefit of cloud computing to the business are as follows.

#### **1. Do More with less**

With cloud computing, companies can reduce the size of their own data centers — or eliminate their data center footprint altogether. The reduction of the numbers of servers, the software cost, and the number of staff can significantly reduce IT costs without impacting an organization's IT capabilities.

#### **2. Fresh Software**

With SaaS, the latest versions of the applications needed to run the business are made available to all customers as soon as they're released. Immediate upgrades put new features and functionality into workers' hands to make them more productive. What's more, software enhancements are typically released quite frequently. This is in contrast to home grown or purchased software that might have major new releases only once a year or so and take significant time to roll out.

#### **3. Flexible costs**

The costs of cloud computing are much more flexible than traditional methods. Companies only need to commission — and thus only pay for — server and infrastructure capacity as and when it is needed. More capacity can be provisioned for peak times and then de-provisioned when no longer needed. Traditional computing requires buying capacity sufficient for peak times and allowing it to sit idle the rest of the time.

#### **4. Always-on availability**

Most cloud providers are extremely reliable in providing their services, with many maintaining 99.99% uptime. The connection is always on and as long as workers have an Internet connection, they can get to the applications they need from practically anywhere. Some applications even work off-line.

#### **5. Improved mobility**

Data and applications are available to employees no matter where they are in the world. Workers



can take their work anywhere via smart phones and tablets—roaming through a retail store to check customers out, visiting customers in their homes or offices, working in the field or at a plant, etc.

#### **6. Improved collaboration**

Cloud applications improve collaboration by allowing dispersed groups of people to meet virtually and easily share information in real time and via shared storage. This capability can reduce time-to-market and improve product development and customer service

#### **7. Cloud computing is more cost effective**

Because companies don't have to purchase equipment and build out and operate a data center, they don't have to spend significant money on hardware, facilities, utilities and other aspects of operations. With traditional computing, a company can spend millions before it gets any value from its investment in the data center.

#### **8. Expenses can be quickly reduced**

During times of recession or business cut-backs (like the energy industry is currently experiencing), cloud computing offers a flexible cost structure, thereby limiting exposure.

#### **9. Less environmental impact**

Cloud is the flexible facility that can be turned up, down or off depending upon circumstances. For example, a sales promotion might be wildly popular, and capacity can be added quickly to avoid crashing servers and losing sales. When the sale is over, capacity can shrink to reduce costs.

### **IMPACT OF CLOUD COMPUTING ON E-COMMERCE AND INDUSTRY**

Ecommerce market in India is growing wider than that was predicted by Gartner last year; Gartner estimated it to be worth \$6 billion in 2015 70% growth from 2014 revenue of \$3.5 billion. But it is seen by latest report of IAMAI international that the Indian ecommerce industry is expected to grow at the rate of 33% and cross INR 1 lakh crore i.e. US\$16.3bn by the end of 2015.

Cloud computing is another disseminating sector that has no way back, Cloud is impacting the growth of ecommerce sector with very considerate steps and has key role in its advancement. CFOs and CIOs are initiating to the adoption of Cloud after knowing its technical and financial benefits.

Benefits of Cloud computing in ecommerce applications that can overcome the challenges providing wonderful results are:

1. Auto scalability like provided by eNlight cloud
2. Remarkable Cost savings
3. Increased speed
4. Increased security
5. Easier management
6. High availability

After adoption of Cloud in ecommerce applications, Cloud has impacted ecommerce in very positive way –

1. Cloud-based e-commerce applications allow businesses to respond swiftly to market opportunities and challenges (provides flexibility)
2. Cloud-based e-commerce applications enable IT and business leaders to evaluate new opportunities without large upfront investments (Reduced CAPEX)
3. IT leaders must be well aware with the cloud based approach and it's results, in order to choice the right solution for their business needs

### **CONCLUSION**

Cloud computing services can support and give a considerable opportunity to Small and medium Enterprises in general and E-commerce Small and medium enterprises in specific, in order to the lack of IT-resources and infrastructure. However, cloud computing can give a benefit to the SME's and in the same time there are several issues and challenges that should be careful when applying this technology. The adoption decision of cloud computing by Ecommerce SME's will chief to make a great change in the enterprises. The aim of this study is to investigate the behavioral intention of E-commerce SME's to use or not cloud computing technology among E-commerce Jordanian enterprises. In addition, this paper is reviews of cloud computing and E-commerce previous study have been done by many researchers to give illustration about the cloud technology and E-commerce by many perspectives and the issues that may face the E-commerce SME's implementation among Jordanian E-commerce small and medium enterprises.

In the future, this study can be extended by evaluate more factors that could influence the adoption decision of cloud computing, and evaluate the acceptance and readiness of Jordanian E-commerce small and medium enterprises (SME's) toward Cloud computing technology

### REFERENCES

1. Motahari-Nezhad, H.R., Stephenson, B., and Singhal, S.: 'Outsourcing business to cloud computing services: Opportunities and challenges', IEEE Internet Computing, Palo Alto, 2009, 10
2. Viega, J.: 'Cloud computing and the common man', Computer, 2009, 42, (8), pp. 106-108
3. JMell, P., and Grance, T.: 'The NIST definition of cloud computing (draft)', NIST special publication, 2011,
4. E-commerce, second edition, Tata McGraw-Hill, Kamlesh K Bajaj, Debjani Nag



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**A STUDY OF WOMEN ENTREPRENEUR AND THEIR CONTRIBUTION IN  
ECONOMIC DEVELOPMENT  
(WITH SPECIAL REFERENCE TO SHARDA UDYOG MANDIR IN AMRAVATI CITY)**

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**ABSTRACT**

*The present research was to study the critical study of self help groups with reference to Amravati District so far, this type of study on self help group has not been attempted in Vidarbha region. Hence it is necessary to work in this area. This would be of great help to the implementing agencies to bring necessary improvements in the self help groups for attaining the over all empowerment of women & men. The knowledge on these aspects could be used to develop strategies to motivate self help group members for their enhanced participation in the group. The outcome of the study would suggest the factors that are responsible for the good performance of self help groups formed by Government and Non Government organization. Further the study would highlight the role and importance of micro-credit, micro finance institution; role of government and self help groups in offering micro-credit. The results of this study would be offer important input to planners, policy maker, Non-governments organizations for framing policies to empower the women through self help groups.*

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**Keywords:-** Women Entrepreneurs, Sharda Udyog Mandir

**INTRODUCTION**

Women entrepreneurs may be classified as an individual woman or a group of women who initiate, organize and run a business enterprise. According to Schumpeterian concept of Innovative entrepreneurs, women who innovate, imitate or adopt a business activity are called women entrepreneurs.

**CONCEPT OF WOMEN ENTREPRENEURS**

Khanaka in his book, Entrepreneurial Development, states that the Government of India has defined women entrepreneurs based on women participation in equity and involvement in business enterprises. Accordingly, women entrepreneurship is defined as: "An enterprise owned and controlled by women having a minimum financial share interest of 51 per cent of the capital and giving at least 51 per cent of the employment generated in the enterprise to women." However, this definition is to subject to criticism mainly on the premise of employing more than 50 per cent women workers in the enterprises owned and run by the women. In short, women entrepreneurs are those women who think of a business enterprise, initiate, organize and combine the factors of production, operate the enterprise and undertake risks and handle

economic uncertainty involved in running a business enterprise.

**NEED FOR WOMEN ENTREPRENEURS**

The women in India have been a much neglected lot. They have not been actively involved in the mainstream of development even though they represent almost 48.1% of the population and labour force. Primarily women ensure the survival of the human race and the continuation of the family. Unfortunately, their role is generally unrecognized and undervalued, being placed at the bottom of the ideology of gender equality. In practice women are considered completely inferior to males. Thus, the inequalities inherent in our traditional and social structure, based on caste community and class, have a significant influence on the status accorded to women in different spheres. Hence, the emergence of women as entrepreneurs in India should be seen as a resurgence of their proper place in society and restoring the respect and socio-economic status of women.

**MATERIAL AND METHODS**

➤ **Objectives of the Study**

1. Exploration of the prospects of starting a new business enterprise.

2. Undertaking of the risks and the handling of economic uncertainties involved in business.
3. Introduction of innovations or imitation of innovations.
4. Coordination, administration and control.
5. Supervision and leadership.

### **IMPORTANCE OF THE STUDY**

The present research was to study the critical study of self help groups with reference to Amravati District so far, this type of study on self help group has not been attempted in Vidarbha region. Hence it is necessary to work in this area. This would be of great help to the implementing agencies to bring necessary improvements in the self help groups for attaining the over all empowerment of women & men. The knowledge on these aspects could be used to develop strategies to motivate self help group members for their enhanced participation in the group. The outcome of the study would suggest the factors that are responsible for the good performance of self help groups formed by Government and Non Government organization. Further the study would highlight the role and importance of micro-credit, micro finance institution; role of government and self help groups in offering micro-credit. The results of this study would be offer important input to planners, policy maker, Non-governments organizations for framing policies to empower the women through self help groups.

#### ➤ **Scope of the study**

There was scope for improving gain from supply of credit to the farmers through changes in pattern and procedure of lending. The study also points out that efficient use of credit depends on availability of complementary inputs like technical advice, irrigation and marketing facilities.

1. Study is helpful to analyze the financial position of woman.
2. Research study is useful to students, researchers, investors and professionals in the field of enterprenual sector.

#### ➤ **Limitation of the study**

- 1) This study covers only Amravati city and therefore the results attained may not be constant with any other location.
- 2) In the present study, the major factors affecting the microfinance have been studied in depth. however, there are several other countless factors which may bear upon the microfinance.

- 3) The present study has to be considered keeping in mind this fact while writing this report. The findings of study can be applied to similar district or region, although the study is not qualitatively affected the same was considered along with this limitation and the sample was taken from different categories of self help groups.

### **RESEARCH METHODOLOGY**

This research topic is classified as descriptive research. The descriptive research design provides descriptive data of a particular topic. This study is totally based on descriptive research design.

#### • **Data Collection Method**

Once the research design has been decided upon, the next stage is of selecting the essentially, there are two sources of data or information- Primary and secondary.

#### • **Primary Data:**

Primary data is to be collected through interview and structured questionnaire method.

#### • **Secondary Data:**

This research study is based on the secondary data. The sources of secondary data for this research was collected through –

- Magazines
- Internet
- Books
- Journals etc.




#### • **Sampling Technique**

- Universe :- Amravati District.
- Sample size :- 50 in Amravati city
- Time : This study is valid for year 2014-15.

#### ➤ **Result and Discussion**

**Amravati** is a district of Maharashtra state in central India. Amravati is the administrative headquarters of the district.

The district consists of six sub-divisions, which are further divided into 14 talukas. Amravati sub-division is divided into three Talukas: Amravati, Bhatukali and Nandgaon Khandeshwar. Daryapur sub-division is further divided into two talukas: Anjangaon and Daryapur. Achalpur sub-division also consists of two talukas: Achalpur and Chandur Bazar. Morshi sub-division has also two talukas: Morshi and Warud. Dharni sub-division is also divided into two talukas: Dharni and Chikhaldara. Finally, Chandur (Railway) sub-division is divided into three taulkas: Chandur (Railway), Tiosa and Dhamangaon.

Amravati district Location in Maharashtra, India	
Coordinates:  20.93°N 77.75°E Coordinates:  20.93°N 77.75°E	
<b>Country</b>	 <a href="#">India</a>
<b>State</b>	<a href="#">Maharashtra</a>
<b>Headquarters</b>	Amravati
<b>Area</b>	
• <b>Total</b>	12,235 km <sup>2</sup> (4,724 sq mi)
<b>Population</b> (2011)	
• <b>Total</b>	28,87,826
• <b>Density</b>	213/km <sup>2</sup> (550/sq mi)
<b>Languages</b>	
• <b>Official</b>	<a href="#">Marathi</a>
<b>Time zone</b>	<a href="#">IST (UTC+5:30)</a>
<b>Website</b>	<a href="http://amravati.nic.in">amravati.nic.in</a>



**Founder of Sharda Udyog Mandir,  
Amravati**



**Products of Sharda Udyog Mandir**

➤ **Sharda Udyog Mandir, Amravati**

Sharada Udyog Mandir, Amravati, founded in December, 1950, is a charitable institution established with the aim of giving economic aid to hard pressed middle class women, especially widows and destitutes, by giving them training in various crafts and vocations such as tailoring, embroidery, bakery and manufacturing of lozenges, toys, etc. The successful candidate in tailoring is given diploma which is recognised by the Directorate of Technical Education. The beneficiaries of the society numbered 100 in 1963. The movable and immovable property of the institution was worth about Rs. 25,000 in 1963. The income in the same year, stood at Rs. 37,000 including Government grant of Rs. 7,000. The life members of the institutions numbered 75 in 1963 while the ordinary members were 500. The institution opened a BalakMandir in 1955, where children below six years of working mothers, are admitted. The Mandir publishes 'Wagvina', a monthly magazine in Hindi.



**Outlet of Products  
Sharda Udyog  
Mandir, Amravati**



**Handmade Products**

➤ **Organization structure and management**

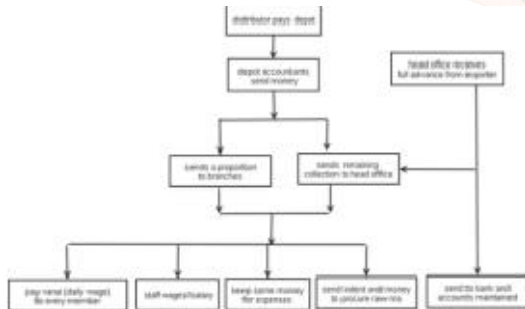
Sharda Udyog Mandir believes in the philosophy of *sarvodaya* and collective ownership. It accepts all its working members as the owners and an equal partaker in both profit and loss. The members are co-owners and fondly referred to as "sisters". All the decisions are based on consensus and any member-sister has the right to veto a decision. Men can only be salaried employees (accountants, drivers or security guards), and not the members of the organisation (i.e. they are not the owners).



**Sharda Udyog Mandir Organisation Structure**

The running of the organisation is entrusted to a managing committee of twenty-one members, including the President, the Vice-President, two secretaries, and two treasurers. *Sanchalikas* are in-charge of various branches and divisions. The office bearers of the managing committee and the *sanchalikas* are chosen from among the member-sisters on the basis of consensus every three years. Each branch has a committee of eleven member-sisters, again chosen by consensus. The central office at Amravati previously coordinated the activities of various branches. But, as the organisation grew, the authority was decentralised in terms of work and sharing of profits at the branch level. However, the *sanchalikas* still need the managing committee's approval before they undertake any new project or activity.

All the branches follow the same set of instructions and have similar accounting system. To co-ordinate various branches in a region or state, there are branch co-ordination committees and area meetings of the various branches in a state. The annual general meeting is attended by member-sisters representing branches and divisions from all over India.



**Sharda Udyog Mandir Collection Flowchart**

Account books are easily accessible to all the member-sisters, ensuring transparency. Sharda Udyog Mandir follows its own financial accountability principle. There is no credit method for running operations in the organisation. Every payment is done on a daily basis, except for the outside supply of raw material. Profits and losses are shared equally among the members of a given branch. In the initial days of Sharda Udyog Mandir, the profits of the first six months were shared equally among all sisters in the form of

gold. This sharing practice is still in effect, but now the decision whether to share the profits in gold or in cash is made at the branch level. The cost of national-level advertising is borne by all branches and divisions, depending on their individual production abilities.

Because of Sharda Udyog Mandir's main motive of generating self-employment for women, no machinery is used at the production level, and everything is done manually. However, computers are now being used in some of the Amravati branches for accounts and administration.



**Sharda Udyog Mandir distribution flowchart**

The quality of papads can vary due to quality of water used in various parts of India. To avoid any inconsistencies, the final products are tested in the ShardaUdyogMandir's laboratory in Amravati. In the monthly meetings, the quality issue and modifications are tested. The central office purchases and distributes all ingredients to maintain the quality of the final product. For example, the urad dal is imported from Myanmar, asafetida is imported from Iran, and black pepper comes from Kerala. The committee often makes surprise visits to various branches to assure that production conditions are hygienic. When a new branch of ShardaUdyogMandir opens, a neighbouring ShardaUdyogMandir branch helps it by guiding and training new members.

On successive failures of a branch to abide by the organisation's philosophy of consistent quality and production of papads, the central committee reduces the daily wages of its members by 1 rupee. The member-sisters are also rewarded for extra

effort. For instance, in 2002, the member-sisters at the Rajkot branch received Rs 4,000 each as bonus, while the member sisters at Amravati and Thane branches received a 5-gram gold coin as an incentive. Several issues of Sharda Udyog Mandir Patrika enumerate the names of the names/numbers of the member-sisters, who were rewarded with the cash or gold, for their extra efforts.

➤ **Saundarya Gruh Udyog**

- Name : Smt. Chanda Vilas Wankhade
- Qualification : M.A. (Marathi), M.Phil.
- Name of Business: SaundaryaGruhUdyog (Trupti Production)
- Established with Rs. 40/- Only in 1992
- Annual Income : Rs. 40 Lacs per year
- Main Objective : Woman should be self reliant and dependent



**Finish goods Inventory of Saundarya Gruh Udyog**



**Outlet of Saundarya Gruh Udyog**



**“Maharashtra Udyogini Award 2007”**

**Awarded by “Jagatik Maratha Din”**

➤ **Findings :-**

- Business enterprise run by women in Amravati which ShardaGruhUdyogis more than any other firm.
- Women can provide a better employment opportunities.
- ShardaGruhUdyog create employment opportunity for women in Amravati
- It is strongly agree that powerful women entrepreneurs able to eradicate poverty from India.



**Working woment at Saundarya Gruh Udyog**

**Products of Saundarya Gruh Udyog**

**CONCLUSION**

The growth of the ShardaUdyogMandir is often seen in the larger canvas of women and their empowerment. The organisation has undertaken various efforts to promote literacy and computer education for member-sisters and their families. A literacy campaign for sisters began through literacy classes at Girgaum on 18 June 1999. Later, the managing committee decided to start such classes in all its branches. From 1980 onwards, Sharda Udyog Mandir started giving Chhaganbapa Smruti Scholarships to the daughters of the member-sisters.

The member-sisters used their organisation as a medium to promote their and their families' welfare. In the Valodcentre they set up an

educational and hobby centre for the rural women. Orientation courses in typing, cooking, sewing, knitting and toy making as well as other courses like child welfare, first aid and hygiene were taught. The first ever pucca (tarred) road in Valod

to be built and inaugurated in 1979 was with the help of the Sharda Udyog Mandir, Valod branch. Sharda Udyog Mandir member-sisters also tried to start a co-operative bank, but the effort was not very successful.

### REFERENCES

1. Agarwal, V.K, Initiative, Enterprise and Economic Choices in India, Munishiram Manoharlal, New Delhi, 1975.
2. Amitabh Kundu, "Trends and Pattern of Female Employment: A case of organized informalisation", Gender and Employment, Vikas publishing house, New Delhi.
3. Gandhan Siva Ramakrishna, Kotta Ramesh and Kolla Siva Ramakrishna, "Marginalised Women and Economic Development - Empowerment of Agricultural Labour", A.S. Saini Publishers, New Delhi.
4. United Nations Organization (2001) Conceptual Frame Work on Empowerment of Women.
5. Batilwala, Srilatha (1998) The Meaning of Women's Empowerment: New Concepts from Action, in Gita Sen, Adrienne Germaine and Lincoln Chen (eds), Population Policies Reconsidered: Health, Empowerment and Rights, Harvard School of Public Health, Boston, USA.
6. United Nations Development Programme (2001) Report on the Empowerment of Women.
7. Kabeer, Naila (2001) Reflections on the Measurement of Women's Empowerment, in Discussing Women's Empowerment-Theory and Practice, Sida Studies, 3, Novum Grafiska, AB Stockholm.
8. Malhotra, Anju, Sidney Ruth Schuler and Carol Boender (2002) Measuring Women's Empowerment as a Variable to International Development, World Bank, Washington D.C.
9. Indian Political Reforms Committee (1932) Proposal for Granting Right to Franchise to Women in India.
10. Committee on the Status of Women (1971), Report submitted to the Government of India, New Delhi.
11. Ms. Reecha Upadhyay , WOMEN'S EMPOWERMENT IN INDIA - An Analytical Overview
12. <http://asiafoundation.org/resources/pdfs/womenempowermentindiabriefs.pdf>
13. Dr (Mrs) Naresh Yadav , 'Women & Reproductive Health'
14. [http://www.vigyanprasar.gov.in/Radioserials/women\\_and\\_reproductive\\_health.pdf](http://www.vigyanprasar.gov.in/Radioserials/women_and_reproductive_health.pdf)
15. Mr. Carol S coonrol. 'Chronic hunger & the status of women in India'. June 1998. <http://www.thp.org/reports/indiawom.htm>
16. Mr. Atul Joshi, 'legal empowerment of women in India'
17. <http://www.preservearticles.com/201106037473/short-essay-on-legal-empowerment-of-women-in-india.html>.



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## ON TREND AND PATTERN OF INDUSTRIAL DISPUTES IN MAHARASHTRA AND THE IMPLICATIONS ON INDUSTRIAL RELATIONS IN THE STATE OF MAHARASHTRA

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### ABSTRACT

*The consequences of Industrial disputes will be harmful to the promoters of industries, workers economy and the nation as a whole, because such disputes result in loss of productivity, profits, market share and even closure of the plant. Hence, Industrial disputes need to be averted by all means. Organizations are required to adopt a strategy to curb the conflicts in the initial stages itself. Industrial disputes are affecting the industrial development and industrial relations systems. This article makes a closer look into the statistics on industrial disputes in Maharashtra and analyses its causes, trends, implications on various stake-holders, and also consequences on industrial relations during a decade 2008–2017. The paper concludes that there is high degree of association between industrial dispute facts and challenges to cordial industrial relations in Maharashtra state.*

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**Keywords :** Industrial Disputes, Causes, Compensation, Conflicts, Settlement, Industrial Relations

### INTRODUCTION

The increasing complexity of labor management relation systems in Maharashtra state has widened. This gives rise to conflicts in labor-management relations, resulting in strikes/lockouts and ultimately the loss of production and hardships to the society. There is no single cause for industrial disputes which is not a personal dispute of one person and it affects a large number of workers having common interests. The ultimate manifestation of industrial dispute is a strike on the part of workers and a lockout or layoff on the part of managers/ employers. Industrial disputes are symptoms of industrial unrest in the state. The present study has been made to assess the nature, causes and impact of disputes in industrial relations in the state of Maharashtra. The assessment has been made on the basis of some well-defined variables, viz. industrial dispute arose, and settlement / pending statistics, causes of disputes, types of settlement, and prosecutions due to not implementing minimum wages act, compensation and man-day's lost.

### REVIEW OF LITERATURE

Empirical studies on industrial relations in general and industrial disputes in particular are rather rare in India, and very scarce in the Maharashtra context. The exceptions are a few academic research studies for doctoral degrees of various universities. Ramachandran Nair (1973) has made

the industrial relations scenario in Maharashtra, and its major trends and patterns. In a recent study Jacob K K (2002) has analyzed the industrial relations climate in public sector units (PSUs) in Maharashtra, and has observed that poor industrial relations in PSUs have adversely affected their performance and efficiency. There are not many Maharashtra-based studies, other than the above.

### RELEVANCE AND SIGNIFICANCE OF THE STUDY

Cordial industrial relations, devoid of disputes and conflicts, can improve the working environment in organizations and can significantly enhance their productivity and operational efficiency. In spite of the commendable literacy rate and high level of attainments in socio-cultural, educational and health fields, the industrial scenario in Maharashtra has been quite dismal over the last three decades or more. Frequent instances of industrial disputes, strikes and lock-outs have resulted in poor industrial relations climate and poor performance of the industry in Maharashtra. As Maharashtra-specific studies on industrial disputes are quite rare, this study seeks to look into the trend and pattern of industrial disputes in Maharashtra with a view to assess the performance over the years and to suggest suitable remedial strategies.

### OBJECTIVES OF THE STUDY

(i) To analyze the trend and pattern of industrial disputes in

Maharashtra during the decade 2008-2017, and to study the major factors influencing the industrial disputes;

(ii) To study the relationship between key variables relating to industrial disputes that pose challenges to cordial industrial relations;

(iii) To suggest the measures to reduce the occurrence of Industrial disputes and hence bring about healthier industrial relations climate, based on the findings of the study.

### RESEARCH METHODOLOGY

The study is descriptive-analytical in nature. The data used for the study are secondary data relating to Maharashtra state in India and are collected from the Department of Labor, Government of Maharashtra. The data relate to a period of 10 years (from 2008 to 2017) and correspond to different facets of industrial disputes in the state during the above period. Data so collected are analyzed using popular tools of statistical analysis.

### FINDINGS OF THE STUDY AND DISCUSSION

The causes of industrial disputes can be broadly classified into two categories: economic and non-economic causes. The economic causes will include issues relating to compensation like wages, bonus, allowance, working hours, leave and holidays without pay and retrenchments. The non-economic factors will include victimization of workers, ill treatment by staff members, poor working conditions, indiscipline, dismissal, disagreement of management policy, etc.

**Table I: Industrial Disputes Arose, Settled and Pending**

Year	Arose	Percent	Settled	Percent	Pending	Percent
2008	3356	10 Percent	3334	09 percent	2224	10 Percent
2009	3356	10 Percent	3334	09 percent	2241	10 Percent
2017	4005	11 Percent	3879	11 percent	2263	10 Percent
2011	4555	13 Percent	4656	13 percent	2389	10 Percent
2012	4019	11 Percent	4228	12 percent	2288	10 Percent
2013	3405	10 Percent	3314	09 percent	2279	10 Percent
2014	3471	10 Percent	3317	09 percent	2370	10 Percent
2015	3482	10 Percent	3317	09 percent	2524	11 Percent
2016	3143	09 Percent	3567	10 percent	2439	10 Percent
2017	2352	07 Percent	2357	07 percent	2390	10 Percent
Total	35144		35303		23407	

Table I shows an average of 3514 new disputes arising where as an average 3530 cases were settled and an average 2341 cases were pending year after year from the period 2008 to 2017. The figures of dispute arose and settled shows flat rate movement except the year 2010 but still the figures of pending cases are moving in a flat rate or increasing. Also there is a high positive correlation (0.98) between arose & pending as well as settled pending. This indicates that when we are considering a decade of industrial disputes in Maharashtra state, the effort of improvement of controlling disputes or conflicts is less from the management side and less efforts from government interference to settle the dispute to make pending cases as low as possible year after year. This is really a challenge to cordial industrial relations in Maharashtra State. The facts in Table I is depicted in a pictorial manner in Figure I, whereby it is noted that the number of disputes arose and number of disputes settled are both showing a quite identical pattern and both are showing a constantly declining trend. But, not all cases arising are settled that early, thus resulting in a constantly increasing trend in respect of pending cases of dispute. [Figure I].

**Table II: Causes of Industrial Disputes**

Particulars	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total	Percent
Wages & Allowances	769	869	1065	904	789	729	719	1213	543	478	8078	23
Dismissed	739	759	1348	1255	349	419	365	326	405	307	6272	18
Retrenchment	119	98	88	4	32	62	47	88	12	47	597	02
Closure	4	1	58	5	22	29	17	12	40	17	205	01
Leave	13	1	26	0	1	1	6	0	10	22	80	0
Hours of work	8	2	45	0	2	1	0	7	32	6	103	0
Bonus	525	526	556	462	405	355	407	245	281	300	4062	12
Others	1922	1467	1369	1389	1796	1771	1921	1252	1031	1069	14987	44

(Sources: Dept. of Labour, Govt. of Maharashtra)

**Table II: Causes of Industrial Dispute**

Table II shows both economic and non-economic causes of disputes during the period 2008 to 2017 are moving in flat rate, but economic causes of dispute consists of around 37 percent (being the sum of four different causes with their respective percentage shares of 23, 12, 2, and 1), non-economic causes of dispute consist of around 62 percent (sum of two causes with percentage shares of 44 and 18). Non-economic causes may be due to

victimization of workers, poor working condition, dismissal, discipline, disagreement of management policy, etc. Also there is high positive correlation (0.98) between economic and non-economic causes of industrial disputes during the period 2008 to 2017. These analyses indicates that both causes are moving in the same direction but non-economic causes are more as compared to economic causes which is due to poor working conditions, disagreement of management policy, in- discipline and dismissal, etc. that leads to less psychological involvement of jobs by the employees which creates a situation of job dissatisfaction. Hence prevailing job dissatisfaction in the industry will be a challenge for cordial industrial relations in Maharashtra state. Figure II depicts the trend and pattern of the different causes over the years. In fact 'Others' (viz. causes other than the seven specific causes) has got the largest relative share among the causes. But, the most frequent cause among the seven specific causes is Wages & Salaries, followed by the second most important one viz. Dismissals, thirdly comes Bonus, and fourthly Retrenchment. The other three specific causes (viz. Hours of work, Leave and Closure) have got quite less significance compared with the earlier four causes (wages & salaries, dismissals, bonus and retrenchment) discussed above. Here, it may be noted that all the first four major specific causes show a declining trend whereas the all the three minor causes are showing an increasing trend.

**Table III: Types of Settlement of Industrial Disputes**

Particulars	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total	Percent
Voluntary negotiation	578	866	883	810	374	341	484	831	626	357	6150	18
Conciliation	922	1391	1876	1608	1124	1361	1644	1675	1008	826	13435	40
Withdrawn	1428	1230	1396	1178	1290	1066	795	426	497	469	9775	30
Adjudication	406	392	521	432	526	453	644	260	226	113	3973	12
Arbitration	0	0	0	0	0	0	0	0	0	14	14	0

(Source: Dept. of Labour, Govt. of Maharashtra)

From Table III, it is seen that maximum percentage of settlement happened through conciliation (an average cases of 1344 yearly (from 2008 to 2017) which constitute 40 percent of the total disputes settled during that period, followed by cases withdrawn (an average cases of 978 yearly from (2008 to 2017) which constitute 30 percent of the total disputes settled during that period, through negotiation (and average cases of 615 yearly from (2008 to 2017) which constitute 18 percent of the total disputes settled during that period, and through adjudication process (an average of 397 cases yearly (from 2008 to 2017) which constitute 12 percent of the total disputes settled during that

period. Also there is high positive correlation between conciliation and adjudication (0.93) and negotiation and adjudication (0.87). It would be better for both parties to settle disputes through negotiation itself or conciliation process rather than moving into further steps of adjudication and arbitration process. These analyses indicates that in fact 18 percent of the cases are settled through adjudication reflects the matter is so serious and the trend for the same increases leads to affect goodwill of the organizations from the corporate social responsibility is concerned which is really a challenge to the cordial industrial relations in Maharashtra state.

**Table IV: Inspections, Prosecutions and Amount Released (Under Minimum Wages Act, 1948)**

Year	No of Inspections	No of Prosecutions	Amount Released as Fine
2008	27102	694	635985
2009	24185	454	405975
2010	25151	265	356744
2011	30145	609	378170
2012	25723	639	217397
2013	27779	728	531214
2014	28997	864	862700
2015	30250	1079	976365
2016	33516	1454	1350077
2017	28729	1370	1437880

(Sources: Dept. of Labour, Govt. of Maharashtra)  
 (Source: Data, as in Table IV)

From Table IV, it is noted that the number of prosecutions during the period 2008 to 2017 has initially decreased and then steadily increased. Amount released for penalty has also initially decreased and then steadily increased. An average of 778 prosecutions has been registered from an average inspection of 27934 cases and an average Rs.626000 amount were released as penalty during these period. Also there is a high positive correlation (0.94) between average inspection percentage and average number of prosecutions from these inspections. This indicates that employers are not strictly implementing the minimum wages act 1948, and this is a crucial injustice towards employees as far as cost of living is concerned, and this is another challenge to cordial industrial relations in Maharashtra State (Figure IV).

**Table V: No. No of Cases and Amount Paid Under Workmen Compensation Act**

Year	No of Cases			Amt of compensation (Crores)			Total Cases	Total Amount (in Lacs)
	Death	PD	TD	Death	PD	TD		
2008	117	483	679	2.5	2.81	1.8	1279	7.11
2009	63	255	475	1.31	1.64	0.29	793	3.24
2010	56	137	61	1.24	0.45	0.43	254	2.12
2011	107	141	94	1.78	0.57	0.74	342	3.09
2012	93	142	131	1.78	0.62	0.39	366	2.79
2013	58	100	149	1.66	0.59	0.94	307	3.19
2014	175	46	87	1.89	0.53	0.60	308	3.02
2015	70	272	98	2.67	3.20	1.00	440	6.87
2016	99	127	105	3.56	1.27	0.68	331	5.51

(Source: Data, as in Table V)

From Table V, it is noted that the total number of cases reported for compensation during the period 2008 to 2009 increasing except there is a sharp decline from 2008 to 2003 and same trend occurring amount of compensation paid by the industries. An average of 491 cases compensated Rs.4.10 Crores year after year during this period for death / disablement. As far as disablement is concerned it could be from factory premises or from outside the premises. A constant increase of compensation due to disablement from 2008 to 2009 indicates that safety measures are not adequate and release of compensation which affects the overall effectiveness of the organization and it is a challenge to cordial industrial relations in Maharashtra state.

From Table VI, the number of man days (the industrial unit of production equal to the work one person can produce in a day) during the period 2008 to 2017 account to 30229290. Trend shows increasing, decreasing and continuously moving at flat rate. There is a moderate positive correlation (0.49) between strikes (from employee side) and lock-out plus layoffs (from employer side). Strikes from the employee side occupy an average of 37 percent of the total man days lost during this period and an average of 63 percent occupies Lockout / Layoff from the employer side. Of course there is an overall improvement in the man days lost during these periods as 7 percent during 2008 which comes down to 3 percent during 2017. But the Lockout /Layoff from the employers side does not have any significant change as it occupies an average 83 percent of man-days lost during 2008 as well as during 2017. Loss of man-days basically effect productivity and profitability which leads to

overall effectiveness of the organization. It seems that from the management side, effort to control of lockout / layoff does not have any significant improvement and it is a challenge to the cordial industrial relations in Maharashtra.

**Table 6: Man Days Lost Due to Industrial Dispute from 2008 To 2017**

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
Strike	359175	6456489	72160	143387	3250553	86977	86746	394198	177494	173044	11200223
Lockout	1286962	1627147	1932465	1881349	1855423	1811755	1505370	758144	506606	741221	13906442
Lay Off	529624	729717	888840	1145257	584041	564669	533872	64316	41809	40480	5122625
Total	2175761	8813353	2893465	3169993	5690017	2463401	2125988	1216658	725909	954745	30229290

(Source: Dept. of Labor, Govt. of Maharashtra)

#### 6. Suggested Measures for Controlling Industrial Disputes and Improving Cordial Industrial Relations

Always prevention is better than cure. In order to prevent conflicts or disputes, an organization should ensure code of conduct that each individual organism may follow the code of discipline in the organization formulated by the government and made applicable to management and employees. Encourage mutual trust; both parties to industrial relations should help in the development of an atmosphere of mutual cooperation, confidence and respect. Various provisions which may not be active in certain industries can be incorporated for preventing the disputes

are: (a) Establishment of works committees, (b) Wage Boards, (c) Process of collective bargaining, (d) Standing orders, (e) Joint management councils, (f) Grievances procedures (g) Suggestion system.

#### 7. Concluding Remarks

All the factors that have been discussed in the foregoing analysis of industrial disputes in Maharashtra state during the period from 2008 to 2017 are relevant for further studies. The high correlation between dispute arising and settling or settling and disputes pending reveals that pending cases continue to exist in the state of Maharashtra throughout. Higher percentage of non-economic causes compared with economic causes indicates that major violations occur from the management side. The process of settlement mechanism largely depends on the stage after stage rather than settling it in the initial stage itself. There is a steady increase in the number of prosecutions which has reported due to default of minimum wages act 1948. The compensation due to disablement

indicates the inadequacy of security measures or that of proper training to the employees on safety and security measures. Loss of man days due to disputes indicates that more percentage of lockouts or layoffs from the management side is happening in industries compared with strikes from employee side. Thorough analysis of these facts and figures reveal ample evidence pointing to challenges to the

cordial industrial relations climate in the state. This situation needs to be corrected through concerted efforts from the employers, employees and the government so that healthy industrial relations would prevail and would naturally translate into better productivity, and economic development in the state.

### REFERENCES

1. Jacob, K.K. (2002), "Industrial Relations in Public Sector in Maharashtra", Unpublished Ph.D. Thesis, University of Maharashtra, Thiruvananthapuram.
2. Bhangoo, Kesar Singh (1995), Dynamics of Industrial Relations, Deep and Deep Publications, New Delhi.
3. Paul Lansing and Sarosh Kuruvilla, Industrial Dispute Resolution in India in Theory and Practice, 9 Loy. L.A. Int'l & Comp. L. Rev. 345 (1987).
4. Kerr 'lark, 1973, Industrialization and Industrial Man, British (2nd Ed), Harmondsworth, Penguin.
5. Edward P. K., 1981, Strikes in United States, 1881-1974, Basil Blackwell, Oxford.
6. Turner H. A., 1967, Labour Relations in Motor Industry, George Allen and Unwin, London.
7. Karnik V. B., 1966, Indian Trade Unions - A Survey, Allied Publishers, Bombay



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## **TACKLING SOCIAL EXCLUSION TO WOMEN IN LABOUR MARKET**

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### **ABSTRACT**

*Socio-economic norms fuel gender discrimination, where women are less mobile and therefore unable to migrate to find work. They are also responsible for domestic chores limiting economic opportunities. They receive lower pay than men and are less likely to own assets and less likely to participate in community decision-making*

*Women have difficulty in taking up a job, a narrow range in obtaining employment, relatively low income and very low status in the structure of getting a job in the labor market. These show the sex discrimination in the labor market. In order to struggle for the true equality between women and men, to reduce or avoid this kind of social exclusion, women should improve their own qualities and enhance the consciousness of protecting their rights, and also our whole society should make efforts together.*

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**Keywords:** assets, perpetuate, Interventions.

### **INTRODUCTION**

Labor discrimination as defined by Kenneth Arrow is “the valuation in the market place of personal characteristics of the worker that are unrelated to worker productivity”. It can be thus understood as the differentiation of workers based on characteristics such as color, race, origin, gender etc. that can be classified as factors that do not have a role in determining his or her productivity. There are multiple dimensions that need to be considered when discussing such discrimination. The most obvious is that the group discriminated against is paid less for identical jobs. This is known as wage discrimination and is the most prevalent form of discrimination. The attempt to combat such a form of discrimination can be seen in increasing equal pay legislation in different countries. Examples of this are the Equal Pay Act (1970), Sex Discrimination Act (1975), and Employment Protection Act (1975), but the effectiveness of such legislation is subject to much debate. Secondly, that the level of unemployment for the disadvantaged group in general is higher than that of other groups that do not face such discrimination. Thirdly, there is discrimination based on the kind of jobs that they have access to, the discriminated group given preference for repetitive and menial tasks. This is known as employment discrimination, where an individual is excluded from a job that is worked on by a person with equal productivity. When this happens, the disadvantaged group is employed for a job he or she is over-qualified for, simply because the group does not have access to better paying jobs in par to their counterparts and are denied opportunities of

recruitment and promotion. A general misconception prevails that discrimination is only practiced by the employer.

### **DISCUSSION**

As modern society has made clear, women have the ability to perform with equal skill and success in virtually every endeavor engaged in by men -- including employment, athletics, academics and politics. Yet discrimination on the basis of sex has a long history in the United States, and its residual effects still operate to keep women's salaries lower and opportunities fewer in the employment realm. Although less common, men too can be subjected to unlawful sex discrimination. No matter what form it takes -unequal pay, discriminatory job standards, or failure to promote -numerous federal and state laws prohibit discrimination on the basis of sex.

The essence of sex discrimination is unequal treatment on the basis of sex. The treatment must not simply be different, but also unequal, and therefore unfair. For example, requiring women and men to use separate restrooms does not constitute sex discrimination. But it is sex discrimination to provide different working conditions, salaries, hiring, promotion or bonus criteria to women and men. A unique form of sex discrimination is sexual harassment. Women and men have the right to secure and perform their jobs free of unwanted demands for romantic or sexual relationships, or unwanted communications or behaviors of a sexual nature that interfere with their ability to work.

### **CONCLUSION**

We can draw three important lessons from the article, which tell us how best to support poor, socially excluded households in the labor market. Interventions must be designed and implemented appropriately to respond to specific needs. In recognition of both the socio cultural and the economic barriers that women face in generating income and accessing and owning productive assets. Ensuring labor market participation for the socially excluded requires more than just income opportunities. There must be some approach not only which supports women through direct asset transfers, but it also provides training opportunities to strengthen their skills and knowledge, as well as providing opportunities for creating social

networks both within the community and more broadly. Through this a positive impact on women's livelihood diversification and ability to generate an income can be achieved. Focusing on improving women's skills alone is insufficient to enable them to take advantage of economic opportunities.

Another key is the importance of supporting the empowerment, agency and voice of the socially excluded. A strong body of literature exists which demonstrates the correlation between empowerment and economic productivity. This article tries to challenge the imbalance of power structures which cause and perpetuate exclusion and discrimination in the labor market.

### REFERENCES

1. Rebecca Holmes (2015), Tackling social exclusion in the labor market JOBS Blog
2. Wang Ya Ping(2006-04), A Reserch into the Social Exclusion to Women in the Labour Market
3. Microeconomics - Labour Market - Discrimination". Tutor2u.net. Retrieved 2012-07-18



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## **THE STUDY OF AFTER EFFECTS OF DEMONETISATION ON ECONOMY**

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### **ABSTRACT**

*Demonetisation is a radical monetary step in which a currency unit's status as a legal tender is declared invalid. This is usually done whenever there is a change of national currency, replacing the old unit with a new one. Such a step, for example, was taken when the European Monetary Union nations decided to adopt Euro as their currency. However, the old currencies were allowed to convert into Euros for a period of time in order to ensure a smooth transition through demonetisation. Zimbabwe, Fiji, Singapore and Philippines were other countries to have opted for currency demonetisation. The objectives of the present study were "What will have been gained from [demonetisation], and at what cost, and mostly borne by whom?"*

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**Key words-** demonetisation, monetary, currency, unit, transition

### **INTRODUCTION**

Demonetisation refers to Withdrawal of a particular form of currency from circulation. Demonetisation is necessary whenever there is a change of national currency. The old unit of currency must be removed and substituted with a new currency unit. The currency was demonetised first time in 1946 and second time in 1978. On Nov. 2016, the currency is demonetised third time by the present Modi government. This is a bold step taken by the government towards the betterment of the economy and the country. In this paper, we want to discuss the impact of recent demonetisation on the Indian system.

The common public and bankers are undoubtedly in hassles in the present scenario. The first question that arises is why was demonetisation done at this point of time. Following are certain points which clarify this need:

To develop a good banking system

Blocking inflow of fake currency notes used for criminal activities including terrorist activities.

Destabilising election campaigns being done through black money.

Destroying hoardings of public money by few influential people.

### **RESEARCH AND METHODOLOGY**

This study investigates how the sudden demonetisation move by the Indian government played a role in the society. A sample of around 150 were selected from the city of Karanja and from some areas of Maharashtra. The data from various government agencies was also gathered.

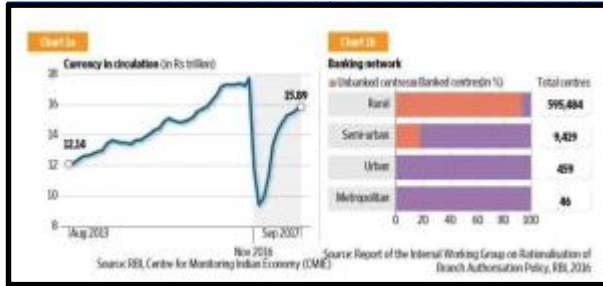
### **RESULT AND DISCUSSION**

The result and Discussion is presented in following manner.

However, the recent demonetisation has only hit the stock of unaccounted wealth kept exclusively in form of currency. To curb regular accumulation of more unaccounted money, Government could institute a mechanism of incentivising tax compliance and punitive and demonstrative deterrent for those caught while generating black money. Second by extensive financial literacy on harmful impact of unaccounted money – ranging from personal health to national loss. This should become part of school and college curriculum. Finally, and most importantly, Government could consider transparency in political funding/election funding as is the case in the USA and some other advanced countries.

The costs imposed by the currency-scraping exercise were, however, quite severe, at least in the short term, disrupting ordinary life across the country for several weeks. The hardest-hit were those in rural areas, where access to banking and the internet are quite low. A 2016 Reserve Bank of India (RBI) report on branch authorization policy classified 93% of rural centres in the country as unbanked, with the population dependent on roving banking correspondents and on distant urban or semi-urban branches. Access to the internet is equally patchy, with only 3% of households in underdeveloped rural areas reporting access to internet in a 2016 consumer economy survey.





### ECONOMIC COSTS

The rural and informal economy suffered disproportionately because most transactions are cash-based. The liquidity squeeze led to a pile-up at wholesale markets, leading to a sharp decline in the Wholesale Price Index (WPI) of perishables such as fruits and vegetables in the immediate aftermath of demonetisation. By turning farm markets into buyers' markets, demonetisation may have also contributed to the decline in prices of pulses. Rural consumer sentiment too took a hit, with domestic sales of two-wheelers plunging sharply. Car sales also declined but the decline was less severe than in the case of two-wheelers.

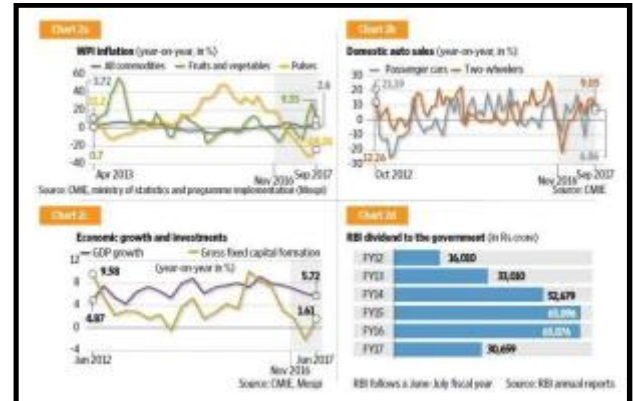
The slowdown in the economy, which started before demonetisation, also seems to have been exacerbated by demonetisation. New project announcements declined sharply in the wake of demonetisation, a Centre for Monitoring Indian Economy (CMIE) analysis showed, hurting the capex cycle.

Contrary to what some economists predicted, the dividend from RBI to the government was lower because of demonetisation. RBI's domestic earnings declined as it had to pay interest of Rs17,426 crore after it mopped up excess liquidity in the banking system following demonetisation. The previous year, the central bank had earned interest of Rs506 crore in its liquidity management operations. RBI's printing costs also went up because of the move.

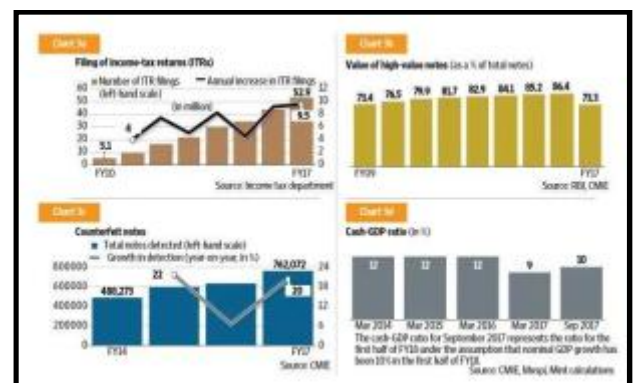
### UNCERTAIN BENEFITS

The one big promise of demonetisation was a rapid expansion in the tax base but the actual results have been quite modest. According to the finance ministry's estimates published in the latest Economic Survey, the tax base expansion attributable to demonetisation was Rs10,600 crore, lower than what RBI spent on interest expenses, and equivalent to only 0.1% of India's gross domestic product (GDP). The full effect on tax collections "will materialize gradually" as reported income of new taxpayers grows, said the survey. How far such gains materialize remains to be seen.

Another stated aim of demonetisation was to detect and eliminate counterfeit notes. The growth in detected counterfeit notes after demonetisation has not been unusually large, shows RBI data, even as counterfeits of the freshly issued notes have already emerged in the system.



Demonetisation did provide a boost to non-cash payments in the short term but that effect may be waning, with the cash-to-GDP ratio back to double-digits. There seems to have been some impact on the stock of black money (rather than the flow), given that the construction sector has been hit hard. But this may also have led to large-scale job losses. The proportion of high-value notes (Rs500 and above)—often viewed as conduits of black money—has also been rising as new notes have entered the system. At the end of fiscal year 2017 (FY17), the proportion of high-value notes stood at 74%, considerably lower than that in FY16. But this figure may rise significantly by the end of FY18.



### SUGGESTIONS

(1) Educate everyone about the use of e-wallet and Debit & Credit Cards. Proper use of e-wallet and cards should be taken at each place. whether private or government. Camps can be held at village levels & city levels. Social workers,

panchayat members, municipal corporation members & staff should come forward in explaining the use of digital media.

(2) Give every businessman, who has current account with banks, swipe machine at the earliest possible. Immediate steps to be taken by the concerned authorities to equip banks with these machines so that it can be distributed to the traders. Also, proper training should be given to traders about its use.

## **CONCLUSION**

*Positive Impacts are:*

A big attack on Corrupt Practices, Currencies and terrorism.

Banking System may improve.

Positive Impact on Government revenues

Impact on Inflation

Somewhat Positive impact on Retail Industry

*The negative Impacts are:*

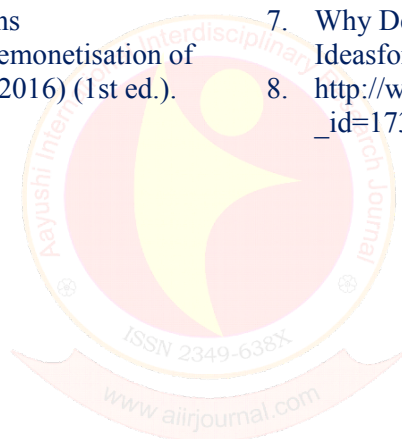
Negative Impact on GDP in short term.

Highly negative impact on sectors with cash transactions.

Initial problems to create cashless society.

## **REFERENCES**

1. Report of the internal working group on rationalisation of branch authorisation policy,RBI-2016
2. CMIE
3. RBI annual reports
4. CMIE,Mospi,mint calculations
5. Economic consequences of demonetisation of 500 and 1000 Rupee Notes. (2016) (1st ed.).
6. Demonetisation Tax Sword - Will the final weapon work? | Taxsutra. (2017). Taxsutra.com. Retrieved 12 May 2017, from <http://www.taxsutra.com/content/demonetisation-on-tax-sword-will-final-weapon-work>
7. Why Demonetisation? (2017). Ideasforindia.in. Retrieved 12 May 2017, from [http://www.ideasforindia.in/article.aspx?article\\_id=1736](http://www.ideasforindia.in/article.aspx?article_id=1736)
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## **RIPPLE**

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### **INTRODUCTION**

Ripple is a real-time gross settlement system (RTGS), currency exchange and remittance network by Ripple. Also called the Ripple Transaction Protocol (RTXP) or Ripple protocol, it is built upon a distributed open source Internet protocol, consensus ledger and native crypto currency called XRP (ripples). Monero is a secure, private, and untraceable crypto currency. It is open-source and accessible to all. With Monero, you are your own bank. Only you control and are responsible for your funds. Your accounts and transactions are kept private from prying eyes.

### **RIPPLE IN ELECTRONICS**

Ripple factor ( $\gamma$ ) may be defined as the ratio of the root mean square (rms) value of the ripple voltage to the absolute value of the DC component of the output voltage, usually expressed as a percentage. However, ripple voltage is also commonly expressed as the peak-to-peak value.

### **WHAT IS RIPPLE**

Ripple is real-time gross settlement system (RTGS), currency exchange by Ripple. It is also called the Ripple Transaction Protocol (RTXP) or Ripple protocol. it is built upon a distributed open source Internet protocol, ledger and crypto currency called XRP (ripples). Ripple enables, Secure, fast, instant and free global financial transactions of any size with no charge backs. The digital currency XRP acts as a bridge currency to other currencies. It supports tokens that represents fiat currency, crypto currency. It is based around a shared, public database which uses a process that allows for payments, exchanges and remittance in a distributed process. It is fastest and most scalable Digital Asset in the world. Ripple is a very popular network as many banks across the world use it as the basis for their own settlement

### **HISTORY OF RIPPLE**

Ripple is a technology that acts as both a crypto currency and a digital payment network for financial transactions. It was first developed in

2004 by Ryan Fugger, a web developer in Vancouver, British Columbia. Fugger conceived of the idea after working on a local exchange trading system in Vancouver with his intent to create a decentralized monetary system that effectively allow individuals and communities to create their own money. This led to the conception of a new system by Jed McCaleb of eDonkey network, which was designed and built by Arthur Britto and David Schwartz In May 2011, the development of a digital currency system begins in which transactions were verified by consensus among members of the network, rather than by the mining process used by bit coin, which relies on block chain ledgers This new version of the Ripple system was designed to eliminate bit coin's reliance on centralized exchanges, It use less electricity than bit coin and perform transactions much more quickly than bit coin. Chris Larsen founded the lending services companies E-Loan and prosper, joined the team in August 2012 and together McCaleb and Larsen approached Ryan Fugger with their digital currency idea. In September 2012 the team co-founded the corporation Open Coin, or Open Coin Inc. launched Ripple Features of Ripple

### **BANKS ARE NOW ACCEPTING RIPPLE COINS**

The digital currencies do not have any physical appearance due to this the financial institutes like a bank does not accept it. Even the digital currency like Bitcoin is not acceptable by most of the banks around the world. Ripple is different. The XRP has been accepted by many known banks around the world. The Santander (a UK based bank) was the first who accepted this coin. There are more than 75 international banks who are accepting Ripple as a currency.

### **IT IS THE THIRD MOST POPULAR DIGITAL CURRENCY**

The digital currencies are becoming popular day by day. Investors are investing billions of money in this. After Bitcoin and Ethereum, Ripple is the

third most popular currency. As an investor point of view, the chances of profits are high.

### **XRP CAN BE SENT ANYWHERE AROUND THE WORLD**

XRP has been accepted by many banks in different countries. This makes it easy for its investors to transfer it in another part of the world within seconds or exchange. You do not need to wait for the specific price to exchange or convert your ripple coin in any other currency.

### **RIPPLE HAS AN IMPRESSIVE LIST OF INVESTORS**

Ripple is a startup which has been financed by different investors. Since the value of Ripple is increasing, Google also invested in this and many other popular and known companies also decided to invest in this venture capital in coming months. This gives Ripple an authority to invest and build trust for their investors.

### **CURRENT ACCEPTANCE OF RIPPLE IN THE WORLD**

Ripple is the only block chain payments provider with proven commercial deployments. Popular financial institutions like MUFG, BBVA, SEB, Ak bank, Axis Bank, YES BANK, SBI Remit, Cambridge Global Payments, Star One Credit Union and eZforex.com adopted the Ripple for payments because of the reduced time and cost associated with global transactions. BBVA, one of the top 50 largest banks in the world, is using Ripple to enable real-time payments between Europe and Mexico. Digital banking pioneer and one of Turkey's largest private banks, Ak bank, is the first bank in Turkey to adopt blockchain. Cambridge Global Payments and Earth port are collaborating with Ripple to improve the customer experience, increase the reach and reduce the cost of real-time cross-border payments.

### **HOW TO BUY SELL RIPPLE DIRECTLY WITH INR?**

Buyu coin is the first platform for Crypto currencies. It is Simple, Secure and Trusted platform for trading and storing more than 30 crypto currencies like Bit coin, Ethereum, Litecoin, Bitcoin Cash, NEM, NEO, STEEM Etc. Now buy and sell ripple at best rate at Buy coin.

## **RIPPLE FORMATION**

Ripple becomes largest alt coin

As with any crypto currency, investing does not guarantee returns and top financial figures have warned that it represents a form of gambling, as their values cannot be predicted.

But Ripple advocates say it is a go-between of the old financial system and the new, serving as a digital currency to be used for financial transactions that has greater stability, speed and security than its competitors.

Several financial institutions have expressed interest in trilling Ripple's technology. Its team of fintech, finance and technology experts appear to be focused on forging partnerships with big financial players, such as a recent deal with American Express, as a way to ensure the platform's growth.

The company, founded in 2012 with offices in London, San Francisco, Sydney, India, Singapore and Luxembourg, is now traded on over 50 crypto currency exchanges, and looks at least set to grow in this regard.

One of its biggest markets is Asia, and commentators say Asian traders are "going mad" for the digital currency.

"People feel comfortable with its name and the technology behind Ripple," said Trevor Koverko, chief executive of Polymath, told *Forbes*. "A lot of people are beginning to realize how big of an opportunity there is between business and the blockchain...and that's making Ripple the early winner here."

### **DEFINITION OF 'RIPPLE (CRYPTO CURRENCY)'**

Ripple is a technology that acts as both a crypto currency and a digital payment network for financial transactions.

Ripple was released in 2012 and co-founded by Chris Larsen and Jed McCaleb.

The coin for the crypto currency is premised and labeled XRP.

### **'RIPPLE (CRYPTOCURRENCY)'**

Ripple is more known for its digital payment protocol than its crypto currency, XRP. Ripple operates on an open source and peer-to-peer decentralized platform that allows for a seamless transfer of money in any form, whether USD, Yen, lit coin, or bit coin.

To understand how the system works, consider a money transfer structure where the two parties on either end of the transaction use their preferred

middlemen to receive the money. Lawrence needs to send \$100 to David who lives in a different city. He gives his local agent, Kate, the money to send to David with a password that David is required to answer correctly to receive the funds. Kate alerts David's agent, Rose, of the transaction details – recipient, funds to be reimbursed, and password. If David gives Rose the right password, Rose gives him \$100. However, the money comes from Rose's account which means that Kate would owe Rose \$100. Rose can either record a journal of all Kate's debt or IOUs which Kate would pay on an agreed day, or make counter transactions which would balance the debt. For example, if Rose was also Martin's agent and Martin needed to transfer \$100 to Itios whose agent is Kate, this would balance out the \$100 owed to Rose, since Itios will be paid from Kate's account.

Although the Ripple network is a little more complex than this example, the example demonstrates the basics of how the Ripple system works. From the example above, one can see that trust is required to initiate a transaction – trust between Lawrence and Kate, Kate and Rose, and David and Rose. Ripple uses a medium known as Gateway that serves as the link in the trust chain between two parties wanting to make a transaction. Gateway acts as the credit intermediary that receives and sends currencies to public addresses over the Ripple network. Anyone or any business can register and open a gateway which authorizes the registrant to acting as the middleman for exchanging currencies, maintaining liquidity, and transferring payments on the network.

The digital currency, XRP, acts as a bridge currency to other currencies. It does not discriminate between one fiat/crypto currency and another, and thus, makes it easy for any currency to be exchanged for another. Each currency on the ecosystem has its own gateway e.g. CADBluzelle, BTCbitstamp, and USDsnapswap. If David wanted bitcoins as payment for the services rendered to Lawrence, Lawrence does not necessarily have to have bitcoins. He can send the payment to his gateway in Canadian dollars (CAD), and David can receive bitcoins from his gateway. One gateway is not needed to initiate a complete a transaction, multiple gateways can be used, forming a chain of trust rippling across the users.

Holding balances with a gateway, exposes the user to counterparty risk which is also a risk that is apparent in the traditional banking system. If the gateway does not honor its IOU or liability, the user could lose the value of his money held at that

gateway. Users that don't trust a gateway, can therefore transact with a trusted gateway that in turn deals with the 'untrusted' gateway. This way the IOU will be with the trusted or creditworthy-certified gateway. Counterparty risk does not apply to bitcoins and most other altcoins since a user's bitcoin is not another user's IOU or liability. The Ripple network does not run with a proof-of-work system like bitcoin or a proof-of-stake system like Nxt. Instead, transactions rely on a consensus protocol in order to validate account balances and transactions on the system. The consensus works to improve the integrity of the system by preventing double spending. A Ripple user that initiates a transaction with multiple gateways but craftily sends the same \$100 to the gateway systems will have all but the first transaction deleted. Individual distributed nodes decide by consensus which transaction was made first by taking a poll to determine the majority vote. The confirmations are instant and take roughly 5 seconds. Since there's no central authority that decides who can set up a node and confirm transactions, the Ripple platform is described as decentralized.

Ripple keeps track of all IOUs in a given currency for any user or gateway. IOU credits and transaction flows that occur between Ripple wallets are publicly available on the Ripple consensus ledger. But even though financial transaction history is publicly recorded and made available on the block chain, the data is not linked to the ID or account of any individual or business. However, the public record of all dealings, make the information susceptible to de-anonymization measures.

Ripple improves on some of the drawbacks attributed to traditional banks. Transactions are settled within seconds on the Ripple network even though the platform handles millions of transactions frequently. This is unlike banks which could take days or weeks to complete a wire transfer. The fee to conduct transactions on Ripple is also minimal, with the minimum transaction cost required for a standard transaction set at 0.00001 XRP, compared to the large fees charged by banks for conducting cross-border payments.

The token ticker for Ripple is XRP. As of June 23, 2017, Ripple was the third largest crypto currency by market cap of \$11.94 billion, following Bitcoin (BTC) - \$45.26 billion, and Ethereum (ETH) - \$31.53 billion.

## **CONCLUSION**

Virtual currencies are in a different category because they provide their own unit of account and payment systems. These systems allow for peer-to-peer transactions without central clearinghouses, without central banks. Reaching across borders will be critical as the focus of regulation widens from national entities to border-less activities, from your local bank branch to quantum-encrypted global transactions” as stated by Christine Lagarde. This year, we have seen the crypto network growing at a rapid pace. While until today there is no clear policy or regulation on crypto currency.

The government and courts stand have been unclear. Though entrepreneurs in the country are making the most from the opportunity.

In a country like India, where we value everything by its monetary worth, the sure-shot way to beat cash is to make currency that is more valuable than cash.

Apart from that, there is no one who understands Indian consumers better than native companies. A crypto exchange and a wallet that would allow hundreds of millions of citizens to become part of the crypto economy will be a great leap for the entire block chain community.

## **REFERENCES**

1. Internet base information.
2. <http://www.new-crypto.com>
3. <https://en.wikipedia.org/wiki/Rippl>



## SUSTAINABLE AGRICULTURE AND MANAGEMENT

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### ABSTRACT

*In order to provide food for a large population— regular production, proper management and distribution of food is necessary. One of the major problems of Indian agriculture is low crop productivity. Our population is growing at an enormous rate and therefore it is important to achieve and enhanced productivity of crops. So, farmers should care for their crops in the farm. India is a developing country. India has the ability to restore efficiency in agriculture but lack of facilities and management creates the problem. This research article provides the insights of the sustainable agricultural practices and solution to improve the agricultural management.*

### INTRODUCTION

India's farmers use traditional farming technique, tools and many other things for farming. So, they cannot yield a good crop from traditional farming technique. 70% of India is covered by agriculture land and completely rely on the agricultural products. Most Indian farmers are middle call and poor people. They used the traditional farming technique not aware about the innovative, current advanced farming techniques used all over the world. Even, no advanced farming management is applied by the Indian government. They face many problems in agriculture like lack of availability of machinery, awareness of climate change, high cost of fertilizer, inadequate storage facility and many other things for farming. This paper is intended to describe the Indian traditional farming techniques and challenges faced by the Indian farmers. Also I describe the proposed solution that helps to solve many problems faced by the farmers.

### EXISTING FARMING SYSTEM

Indian farmers are completely relying on the traditional farming techniques. They follow the traditional farming protocols. The following discussion gives the overview about the basic practices of the crop production.

#### Types of Crops

When plants of the same kind are grown and cultivated at one place on a large scale, it is called a **crop**. For example, crop of wheat means that all the plants grown in a field are that of wheat. Crops are of different types like cereals, vegetables and fruits. These can be classified on the basis of the season in which they grow. India is a vast country. The climatic conditions like temperature, humidity and rainfall vary from one region to another.

Accordingly, there is a rich variety of crops grown in different parts of the country. Despite this diversity, two broad cropping patterns can be identified. These are:

**(i) Kharif Crops :** The crops which are sown in the rainy season are called kharif crops. The rainy season in India is generally from June to September. Paddy, maize, soybean, groundnut, cotton, etc., are kharif crops.

**(ii) Rabi Crops :** The crops grown in the winter season are called rabi crops. Their time period is generally from October to March. Examples of rabi crops are wheat, Pea (watana), mustard (mohair). Besides these, pulses and vegetables are grown during summer at many places.

#### Soil Preparation

The preparation of soil is the first step before growing a crop. One of the most important tasks in agriculture is to turn the soil and loosen it.

#### Sowing

Sowing is the most important part of crop production. Before sowing, good quality seeds are selected. Good quality seeds are clean and healthy seeds of a good variety. Farmers prefer to use seeds which give a high yield. Before sowing, one of the important tasks is to know about the tools used for sowing seeds.

#### Manure and Fertilizers

The substances which are added to the soil in the form of nutrients for the healthy growth of plants are called **manure** and **fertilizers**.

#### Irrigation

The supply of water to crops at different intervals is called **irrigation**. The time and frequency of irrigation varies from crop to crop, soil to soil and season to season.

### **Insecticides**

The substances which are used to remove/kills the insects, pests from the crop without affecting the crop friendly insects, pests are the insecticides/pesticides.

### **Harvesting**

The cutting of crop after it is mature is called **harvesting**. In harvesting, crops are pulled out or cut close to the ground.

### **Storage**

If the crop grains are to be kept for longer time, they should be safe from moisture, insects, rats and microorganisms. The fresh crop has more moisture. If freshly harvested grains (seeds) are stored without drying, they may get spoilt or attacked by organisms, losing their germination capacity.

## **CHALLENGES**

### **Climate change**

Climate change is having a profound effect on current and anticipated food production. The anticipated effects of climate change like including rainfall, wind patterns, floods and many problems. Climate change will bring major negative impacts to smallholder agriculture in developing countries. Some of this impact is already being felt by small holder farmers.

### **Soil Preparation**

Indian farmers lacks the availability of the advanced (traditional also) soil preparation equipments and the man power require.

### **Seed Availability**

Good quantity seeds are available in the market which is not sufficient for all farmers. Private market seeds are available in large extents. But it has a high cost, low fertility, late supply, fake seeds and so on. No Government help is available for all farmers where they may be middle class or poor. No Government management is available to provide the seeds to all farmers with proper subsidy techniques.

### **Lack of Machineries and man power**

Poor farmers have not the economical power to purchase the required agricultural machineries and also take on rent. No Government or common information system is available to analysis and record the essential agricultural machineries. Therefore it will not supply to the farmers efficiently. The machineries are available but not used effectively. They even are keeping idle throughout the year.

Man power is available but not proper organized. If it organized with the help of MGNREGA (Mahatma Gandhi National Rural Employment Assurance Guarantee Act), then it suffers from the

things like analysis of the manpower, no information system that gives the work chart at local, regional level.

### **Fertilizers**

Good quantity fertilizers are available in the market which is not sufficient for all farmers. Private market fertilizers are available in large extents. But it has a high cost, low fertility, late supply, fake fertilizers and so on. No Government help is available for all farmers, where they may be middle class or poor. No Government management is available to provide the fertilizers to all farmers with proper subsidy techniques. No awareness to use the fertilizers on which climatic conditions.

### **Insufficient supply of-**

- **Inadequate farm input:-**

Farm input like chemicals, fertilizers, improved too expensive seeds, tools and implements are not available and even they are available too expensive for the poor farmers.

- **Harder to cutting crops:-**

Many farmers do not use machinery for the cutting or threshing of the crops as well as the shortage and competition for workers means labour expenses have climbed, but poor farmers does not use the harvesting machinery. Because he have no money so that they could not able to use the labour for their work in farm. We know that now in this time the laboures prices increased to work in the farm. So it is the duty of Government to quick act on this situation of farmers and help to provide machinery.

- **Inadequate storage facility:-**

The food and grain market is not stable today. Because of the online trading on the food and grains over internet .Anyone can purchase the stock of food and grains without actually purchasing it. All is about the virtual. Here the main thing is the actual products food and grains are as it is in the farmer's house. Here only the virtual stock is exchange. This tends to none sold of those goods. The storage is at the farmer's house or at farm without any security. The farmers sell their products to the local market without aware of the actual global market prizes. This is due to the non availability of the effective food and grain reserves by the Government.

- **Poor transportation system:-**

The presence of bad roads or total lack of it makes distribution of produce to market very difficult and this leads to wastage. The no availability of vehicles, High cost of transporting farm makes things difficult for farming.



- **Non availability of market place:-**

After cutting crops farmers sell his product in the market awareness of prices because he have no money to fulfill his need .He directly sell his product by private vendors .They have no knowledge of global prices.

There is a need of new policies which help the farmers to connect the local market to the global market that aware them about the market prices. They can sell their goods easily. So government should help for farmers to aware them about market prices.

### **PROPOSED FARMING TECHNIQUE**

The traditional farming techniques are good but suffer from the above mentioned challenges mostly for the middle class and poor farmers. The requirements of the advanced farming techniques must implemented but the proper management should be necessarily taken to get the best yield from farms.

The necessary things, which help to provide the high yield, proper agricultural resources management, good quality product with best nutrients and ease to supply to required remote stations.

#### **Climate change**

Government should help the small holder's farmers when seasonal climate change. The essential system should be provided to the farmers which guide the climate change, rain disaster, flooding with the help of short messaging service. The information system using Internet/Mobile should be provided which gives the sowing guidelines to the farmers depending on the type of land. The soil investigation system must provide by government agencies or by appointing NGOs.

#### **Soil Preparation**

- It is necessary to prepare soil by tilling and leveling. Ploughs and levelers are used for this purpose.
- Supply of machineries to all farmers by the record keeping system.
- Supply of man power to all farmers by the local, regional management system.

#### **Seed Availability**

- Good variety of seeds is sown after selection of healthy seeds.
- Good quality seeds are available on the Government centers or Government appointed centers or by the NGOs.
- Finding the fake, low quality, non fertile seeds done by the Government or appointed NGOs.

- Local, regional supply chain for the seeds must be established.
- Subsidy on seed purchase or immediate loan facility must available.
- Enough quantity supply for all farmers. This is possible only by analyzing the climate change, crop habits of the region, land quality. Therefore the required seeds with different crops and varieties are maintained and supplied efficiently.
- On time - direct supply to farmers.

#### **Machineries and man power**

- Analysis of the farming machineries, available all over the region should be done.
- And the record must be available to all farmers through SMS, Internet or by the parallel information system.
- The rates to hire the machineries are controlled.
- The farming resources are properly managed known as **Resources Management** (like efficiently controlled by the Operating System in Computer System.)
- To solve the problems like manpower availability, the effectiveness of National Rural Employment Guarantee Assurance scheme should be done.

#### **Fertilizers**

Fertilizers are not available in suitable time for farming and high cost of fertilizers. So, Government should provide the fertilizers in minimum rate but quality of good. In the future farmers will maximum yield from his farming.

#### **Cutting crops**

- Agricultural Resources should be properly allocated to all farmers to cut the crops and the resources are properly scheduled, that gives guarantee to successful crop cutting.
- Man power should be enrolled and allocation must be proper on time.
- It is beneficial to the farmers and the workers.
- On time crop cutting produces the good quality, good nutrients food.

#### **Storage facility**

- Local, regional and national and global grain stores must be established for efficient grain stores.
- It helps to keep track the production system and the produced grains and foods.
- Because of the storage management, the prize stabilization is effectively done.

#### **Transportation system**

- Due to the storage facility, the transportation facility can be effectively implemented.

- Record keeping system must be available, that keep track of the available transportation system.
- Transport allocation is effectively done for all farmers.
- Because of this, the grains are supply to the proper place on time
- Farmers get the best return
- No grains, foods are destroyed due to non availability of transportation system.

#### **Market place**

- Markets are available but removing the Mediators (Dalal, Bicholiye) can improve the business for the farmers and the consumers.
- Unwanted prize hikes are not done.
- Illegal storage not done by the third parties, therefore prize can be control under Government.
- New Markets are formed with advanced technologies.
- Markets are connected directly to the farmers by the advanced Information Technology.

#### **GOVERNMENT HELP**

The following important facilities should provided by the Government to farmers-

- Seed supply with subsidy or loan facility
- Appointed NGOs for the agricultural process.
- Provide information about the climate change to the farmers. Because of this, farmers do

their farming practice depending on the climate.

- Provide land type awareness to the farmers so they get the crop depending on the land/ soil type.
- Keeping track of the agricultural machineries, so they are properly provided to the farmers and with scheduling.
- The record keeping system for the agricultural resources like machineries and man power should be maintained. Because of this the machineries and man power get paid efficiently
- Government should form a strict act against the fake seeds and fertilizers supply of the market.
- Controls the selling of the seeds and fertilizers on high cost.

#### **CONCLUSION**

Finally, it must say that when farmers sowing in the farm he could not get the good quality of seeds as well as fertilizers is not available in suitable time. And climate change will bring negative impacts for the farmers. So, Government should help the aware about the climate change for farmers when climate change. In short, all the problems faced by farmers in the farming and government should quick action on this situation.

#### **REFERENCES**

1. Vyas, V.S. and V. Ratna Reddy, (1996) Environmental policies and policy implementation in India: An assessment, In: Environment and Development, Ed: M.S. Rathore. Jaipur and New Delhi: Rawat Publications.
2. Virmani, Arvind, (2004). Accelerating growth and Poverty Reduction: A Policy Framework for India's Development. Academic Foundation, New Delhi.
3. Vyas V. S. (2003), India's Agrarian Structure, Economic Policies and Sustainable Development, Academic Foundation Publishers, New Delhi.
4. Quan, J. 2011. A future for small-scale farming. Science review: SR25. UK Government's Office for Science. Foresight project on Global Food and Farming Futures. Natural Resources Institute, University of Greenwich, London (available at
5. Rashid, S., Gulati, A. & Cummings, R.W. Jr, eds. 2008. From parastatals to private trade: lessons from Asian agriculture. Washington, DC, IFPRI.
6. Ravallion, M. & Datt, G. 1996. How important to India's poor is the sectoral composition of economic growth? The World Bank Economic Review, 10: 1-26.
7. Reardon T. & Timmer C.P. 2012. The economics of the food system revolution, Annual Review of Resource Economics, 4: 14.1-14.40.
8. Bhattacharya, B.B. (2003), "Trade Liberalization and Agricultural Price Policy in India since Reforms", Indian Journal of Agricultural Economics, Vol.58, No.3
9. Braun, Joachim von, Gulati, A., Hazell, P., Mark W. Rosegrant and Ruel, Marie (2005) Indian Agriculture and Rural Development-Strategic Issues and Reform Options.
10. Dev, S. Mahendra (2008), Inclusive Growth in India, Agriculture, Poverty and Human Development, Oxford University Press, New Delhi.

## **HUMAN RESOURCE MANAGEMENT REVIEW: MAKING SENSE OF HR IN FAMILY FIRMS: ANTECEDENTS, MODERATORS, AND OUTCOMES**

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### **ABSTRACT**

*Family business researchers have felt increasing distress with the lack of understanding about how families that are their structure, relationships, emotions, and goals – shape how families manage family firms, leading to calls to more fully incorporate “family science” theories about the nature of family into research about family firms. It seems likely that families' first impact in family firms will be on how employees are treated and managed. Thus, this special issue brings together papers that offer an early glance at what is to be gained by leveraging theories about family to help explain how families influence human resource management within family firms, and how human resource management, in turn, impacts key family firm outcomes.*

**Key words:** *Human resources, review, family firms, Antecedents, Moderators, And Outcomes.*

### **INTRODUCTION**

“All happy families are alike; each unhappy family is unhappy in its own way.”

- Leo Tolstoy, from Anna Karenina

“Govern a family as you would cook a small fish – very gently.”

- Chinese proverb

As the above quotes suggest, the governance of a family and by extension family firms is complicated. Family firms are the most common type of organization in the world, and they differ considerably from non-family firms in their goals, behaviors, and outcomes. They pursue unique goals, such as the desire to pass the firm to the next generation (Gómez-Mejía, Haynes, Nuñez-Nickel, Jacobson, & Moyano-Fuentes, 2007), and their unique goals regularly nurture distinctive behaviors. For example, while family firms regularly hire family members (Jaskiewicz, Uhlenbruck, Balkin, & Reay, 2013), they are also less likely to fire employees – even during economic downturns (Block, 2010). Although research on human resource management (HRM) in the context of family firms is still relatively scarce, the few existing studies support the idea that family firms differ substantially from non-family firms, as well as from each other, in their human capital management (Griffeth, Allen, & Barrett, 2006; Perez-Gonzalez, 2006), compensation and compensation systems (Gómez-Mejía, Larraza-Kintana, & Makri, 2003), performance appraisal (Gómez-Mejía, Nuñez-Nickel, & Gutierrez, 2001), knowledge transfer

(Cabrera-Suárez, De Saa-Perez, & García-Almeida, 2001; Jaskiewicz et al., 2013), organizational citizenship behavior (Arregle, Hitt, Sirmon, & Very, 2007), and workplace justice perceptions (Van der Heyden, Blondel, & Carlock, 2005). Despite a growing number of important insights describing how HRM in family firms differ from non-family firms, as well as from each other (e.g., Gagne, Sharma, & De Massis, 2014), theory is only beginning to emerge to explain how these differences emerge and how they shape important outcomes in family firms. One reason for the absence of research on the topic is that scholars have not paid sufficient attention to the connection between families and family firms' HRM practices. Indeed, family business researchers have felt “growing discomfort” with the lack of understanding of the family in the family business context (James, Jennings, & Breitreuz, 2012).

Because it is not known how families' diverse structures, family-member relationships, family goals, and emotions affect HRM. Practices, the effect of families on family and non-family employees' psychological contracts, organizational citizenship behavior, workplace deviance, or any other factor known to impact organizational processes and outcomes remains largely in a black box. Fortunately, we do not need to start from scratch to generate theory that explains differences among families and the ways in which these differences might influence HRM practices and their outcomes in family firms. Researchers from education, psychology, and sociology have already done much and summarized it under the heading:

“family science.” However, despite several calls for increased research, theory building that leverages family science theories in the context of family firms remains in its infancy (Aldrich & Cliff, 2003; James et al., 2012; Jaskiewicz, Combs, Shanine, & Kacmar, 2017; Olson et al., 2003). This special issue, therefore, takes a step toward leveraging family science research to explain how different elements of family might influence HRM within family firms, and how HRM might, in turn, impact key family firm outcomes. Building upon the small number of studies, mostly from HRM and organizational behavior (e.g., Clark, 2000; Dencker, Joshi, & Martocchio, 2007; Greenhaus & Powell, 2006; Lewis & Cooper, 1996; Wayne, Grzywacz, Carlson, & Kacmar, 2007) and family business (e.g., Distelberg & Blow, 2011; Eddleston & Kidwell, 2012; Lubatkin, Durand, & Ling, 2007), we are proud to present seven papers that provide novel theory to explain different ways families can shape HRM and how HRM, in turn, can affect family firms.

#### **SUMMARY OF CONTRIBUTIONS**

The seven papers in this special issue can be divided according to whether their focus is on A. Family as Antecedent to HRM, Relationships among Family and Non-Family Members, and C. HR Practices Unique to Family Firms. We summarize each of the papers below:

**Family as antecedent to HRM:** The three papers in this group draw from family science research and research on imprinting to describe different family attributes as antecedents that influence HRM and other outcomes in family firms. The paper by Kidwell, Eddleston, and Kellermanns begins with the observation that researchers often attribute a “positive halo effect” when describing how founders imprint processes and behavioral norms on firms. The authors observe that, especially in the family firm context, it seems likely that imprinting can also be harmful. In particular, they explain that business families are known to promote behaviors and values such as entitlement, preferential treatment, and parental altruism that can be positive, or at least normal, within family dynamics, but that harm the family firm when allowed to metastasize into the organization's culture. Using cases to illustrate, they describe how negative behaviors that have their (1) genesis in the family firm undergo a (2) metamorphosis via imprinting and learning that (3)

manifests in destructive outcomes for the family firm. They suggest, in particular, how “negative imprinting” yields less formal and easily manipulated HR processes. The good news is that negative imprinting is not determinative. The authors describe how each generation might “re-imprint” the family firm with new habits and cultural values that break the cycle. In the second paper in this group, Daspit, Madison, Barnett, & Long adopts the circumplex model (Olson, 2000) to explore the source of bifurcation bias via HR practices. Bifurcation bias is when family-member employees are treated differently from nonfamily employees. Specifically, the authors apply Olson's (2000) description of unbalanced family structures to explain how biased HR practices emerge that support favoritism toward family-member employees over non-family member employees. This is a problem because biased HR practices can result in biased selection and pay practices, among others, which can hurt the firm's performance. They describe four unbalanced family types from the circumplex model and describe how each relates to corresponding types of imbalance in HRM systems. Balanced family systems, in contrast lead to HRM systems in family firms that are largely absent of bifurcation bias. Despite the negative implications of bifurcation bias, the authors describe ways that it can actually favor the nonfamily member employee, which is a novel perspective regarding the effect of family dynamics on HRM in family firms.

The third paper in this group is by Hedberg and Luchak and draws on John Bowlby's (1973) theory of human attachment to describe how different family-firm founders' early experiences related to bonding and attachment shape their objectives with respect to socioemotional wealth. They suggest, for example, that founders who develop “avoidant” attachment styles (due to unmet attachment needs) are more likely to focus on maintaining close control as a central socioemotional wealth objective. Socioemotional wealth objectives, in turn, shape adopted HR principles, HR strategy, and the implementation of specific HR practices in family firms.

This paper is one of the first attempts to tie founders' early experiences in the family to their objectives and behaviors in the family firm, and to link such objectives and behaviors to consequences that affect non-family employees.

**Relationships among family and non-family members:** The two papers in this group draw on

social exchange theory (SET) to explore different family – non-family interactions. Dhaenens, Marler, Vardaman, and Chrisman examine mentoring in family firms by recognizing that there are many different kinds of mentor-protégé combinations depending on whether someone is a family member or a non-family employee. They build on this observation and SET to explain how different mentor-protégé combinations yield different types of protégé commitment. When both are family members, for example, they suggest that prosocial mentoring will generate greater normative commitment among protégés. Switch the protégé to a non-family member, however, prosocial mentoring continues but the purpose is to foster affective commitment. This paper offers a more nuanced view of mentoring by demonstrating the range of organizational commitment outcomes that can result from different family non-family combinations. Waldkirch, Nordqvist, and Melin draw on Lawler's (2001) affect social exchange theory and apply it to the triad of key family leaders that includes the non-family CEO, the older generation family owner, and the next generation family owner. The authors explain how different types of social exchanges among triad members under different conditions affect the probability of non-family CEO turnover. When triad members are balanced in terms of strength and dependence, they expect non-family CEOs to feel attached and less likely to leave. When the relationship is imbalanced, however – either because the next generation is just entering or the current generation is clinging to power – whether the non-family CEO remains attached and committed will depend on the nature of the social exchange. The authors summarize Lawler's (2001) four basic exchange types – i.e., generalized, negotiated, reciprocal, and productive – and describe how each kind of imbalance affects non-family CEOs' attachment under each exchange type. By introducing social exchange to this context and expanding the conversation to include the next generation, the authors are able to offer detailed predictions about when non-family CEOs are most likely to search for employment elsewhere.

**HR practices unique to family firms:** The final two papers both start with a known HRM difference between family and non-family firms – i.e., bifurcation bias and nepotism – and attempt to explain how heterogeneity among families leads to differences among family firms in the way they

manage these unique HR practices and the resulting consequences. Bifurcation bias occurs in family firms because it is difficult for family owners not to treat family and non-family employees differently. The paper by Jennings, Dempsey, and James draws on the stepfamily analogy to explore the origins and consequences of bifurcation bias. The authors explain that if bifurcation biases are present, they can favor either family or non-family employees, and the direction of such biases may differ across HR practices. In the paper, the authors develop a typology of bifurcated HR practices in family firms and suggest potential moderators that might attenuate the potentially negative outcomes of biased HR practices. In particular, they argue that, rather than ignoring bifurcation biases, families need to be aware of and communicate openly about them. The authors introduce the concept of 'bivalent bifurcation' – which is where family employees are favored in some HR practices while non-family employees find advantages in others – and suggest that bivalent bifurcation can be superior to eliminating or ignoring bifurcation bias. This paper is important because it develops theory on the origins and consequences of different bifurcation biases that exist simultaneously in the HR practices of a family firm. Finally, nepotism is the practice of giving employment opportunities to relatives. Although its practice is common in family firms, it has often been characterized negatively because it undermines the values of merit and diversity in HR decisions (Jaskiewicz et al., 2013). The Firfiray, Cruz, Neacsu, and Gómez-Mejía paper takes a "mixed gamble" perspective wherein nepotism affects outcomes as part of family's current socioemotional wealth (SEW) endowments and as a factor affecting future financial wealth. They distinguish among different SEW goals and explain why nepotism varies among family firms depending on the SEW goals the family most desires.

Specifically, families focused on maintaining "influence and control" and those seeking "renewal of family bonds" will engage in more nepotism than those seeking "family identification" as the central SEW outcome. Nepotism, in turn, interacts with environmental conditions and the focus of the HR system (in terms of ability- motivation- or opportunity-enhancing) to influence firm performance. The paper is important because it engages with the heterogeneity of families with respect to this

important HR practice, and shows how nepotism interacts with the HRM system.

### **OUTLOOK AND CONCLUSION**

Despite emerging insights on the uniqueness of HRM practices among family firms (Gagne et al., 2014), we still lacked theory on how family structures, relationships, emotions, and goals shape the evolution of HRM in family firms and how HRM, in turn, influences key outcomes among family firms. With this special issue, we took an important first step toward filling this gap. Specifically, the papers in this special issue take important steps toward providing answers to the following three broad questions: First, what are the family-based antecedents of HRM in family firms? Second, how do family members interact with non-family employees in the family business? And third, how do families manage HRM practices that are unique to family firms, and toward what organizational consequences? Taken together, the seven following papers shed light on the family-based origins of HRM in family firms, their consequences – good and bad – and mechanisms for families to deal with the uniqueness and complexity of their HRM. We hope that the papers offer a modest step toward new family-based theories of HRM in family firms and spurs more research on the topic. In this context, the Special Issue culminates with an interview that two of the Special Issue Editors, Peter Jaskiewicz and Jim Combs, conducted with Gary Powell and Jeffrey Greenhaus. These two influential scholars have helped draw researchers' attention to the work-family interface. They have done much to explain how employees bring their home-life into the workplace and vice-versa, and described ways that employees manage the interface between the two (Greenhaus & Powell, 2006, 2012; Powell & Greenhaus, 2010a, 2010b). Family business is a

unique domain because when these owner-managers bring their home life into the workplace, the impact is magnified throughout the firm. We asked about emerging trends in the workplace, among families, and the interface between them, and together we draw implications that might help family business and HRM scholars identify important questions that merit time and attention. Acknowledgements We thank the outgoing editor of HRMR – Rodger Griffith – and the incoming editor – Howard J. Klein. Both of them have been extremely helpful and supportive through the entire process of putting this special issue together. We similarly extend our deepest thanks to the outstanding group of scholars who volunteered to review the manuscripts that were submitted to this special issue. In alphabetical order, these scholars are: Tim Barnett, Mississippi State University, USA; Jon Carr, University of North Carolina, USA; Simone Chlosta, ifm Bonn, Germany; Emilija Djurdjevic, University of Rhode Island, USA; Maw Der Foo, National University of Singapore, Singapore; Bob Greer, Texas Christian University, USA; Denis Gregoire, HEC Montreal, Canada; Wayne Hochwarger, Florida State University, USA; Stefanie Johnson, University of Colorado, USA; Mari Kira, University of Giessen, Germany; Jessica Kirk, University of Colorado Boulder, USA; Kincy Madison, Mississippi State University, USA; Rob Nason, Concordia University, Canada; Samantha Paustian-Underdahl, Florida International University, USA; Tyge Payne, Texas Tech University, USA; Sabine Rau, King's College, UK; Philipp Sieger, University of Bern, Switzerland; Lloyd Steier, University of Alberta, Canada; Michele Swift, Oregon State University, USA; James Vardaman, Mississippi State University, USA; Anthony Wheeler, University of Rhode Island, USA.

### **REFERENCES**

1. Aldrich, H. E., & Cliff, J. E. (2003). The pervasive effects of family on entrepreneurship: Toward a family embeddedness perspective. *Journal of Business Venturing*, 18, 573–596.
2. Arregle, J. L., Hitt, M. A., Sirmon, D. G., & Very, P. (2007). The development of organizational social capital: Attributes of family firms. *Journal of Management Studies*, 44(1), 73–95.
3. Block, J. (2010). Family management, family ownership, and downsizing: Evidence from S & P 500 firms. *Family Business Review*, 23, 109–130.
4. Cabrera-Suárez, K., De Saa-Perez, P., & García-Almeida, D. (2001). The succession process from a resource-and knowledge-based view of the family firm. *Family Business Review*, 14(1), 37–4

## MANAGEMENT OF EXERCISE PHYSIOLOGY, FITNESS ACTIVITY AND MOVEMENT SCIENCE

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### ABSTRACT

*Endurance exercise training produces numerous metabolic and cardiovascular effects. Metabolic adaptations include an increase in oxidative capacity of skeletal muscle (greater number and size of mitochondria); an increase in skeletal muscle myoglobin concentration; a greater ability to oxidize fatty acids for energy; and an increase in stored glycogen. Cardiovascular effects of training include a decrease in resting heart rate and heart rate response to sub maximal exercise; an increase in resting and exercise stroke volume; an increase in maximal cardiac output; an increase in VO<sub>2</sub>max; and an increase in arteriovenous oxygen difference. Aerobic exercise training contributes to cardiovascular fitness, because it beneficially alters the coronary artery disease risk profile. An inverse relationship exists between physical fitness and resting heart rate, body weight, percent body fat, serum cholesterol, triglycerides, glucose, and systolic blood pressure. In addition, exercise training increases the high-density lipoprotein fraction of total cholesterol. Endurance exercise is any activity that uses large muscle groups, can be performed continuously, and is rhythmic and aerobic in nature. To develop and maintain cardiovascular fitness, this exercise should be performed at a frequency of 3 to 5 days per week, an intensity of 60% to 90% HR<sub>max</sub> or 50% to 85% HR<sub>max</sub> reserve, and duration of 20 to 60 minutes.*

**Keywords** Endurance exercise, Cardiovascular fitness, training

### INTRODUCTION

Lack of physical activity is now considered as important risk factor for heart diseases as high blood cholesterol, high blood pressure, and cigarette smoking, not because activity is that potent, but because so many of us are inactive or sedentary. Poor diet, coupled with lack of exercise, causes at least 300,000 deaths a year, mostly from heart disease, and contributes to an increased risk for cancer and other illness. **(Fitness and health, fourth edition, by Brian J, Sharkey, Ph D)** The regular moderate physical activity contributes to the length and the quality of life. Regular activity reduces the workload of the heart. Changes in skeletal muscle, including improved oxygen-using (aerobic) enzymes and enhanced fat metabolism allow the heart to meet exercise demands with a lower heart rate. Regular activity serves as a positive coping strategy, a diversion from the stress of everyday life. It occupies the mind, allowing the passage of time during difficult periods. It allows the substitute of good habits for bad ones, positive addictions for negative ones.

### SELF-ESTEEM, SELF-CONCEPT, AND BODY IMAGE

Can regular activity or improved fitness have a beneficial effect on self-esteem and self-concept, and could that reduce or prevent anxiety or depression? An extensive review of research on children indicated that activity was associated with a positive self-concept, that participation in activity programs contributed to self-esteem, and that fitness activities were more effective than other components of the physical education program in developing self-concept (**Gruber, 1986**) Some researchers believe that activity increases levels of mood-altering substances called endorphins. Studies show that endorphins, morphine-like compounds produced in the brain, can reduce pain and induce a sense of euphoria. When beta endorphins were reported to increase in runners after a marathon run, runners were quick to speculate that these opiates were responsible for the euphoric sensation known as the runner's high. Subsequent research cast doubt on that hypothesis. Although the blood endorphin levels are elevated during and after an endurance effort, findings have indicated that the levels do not correspond with mood states (**Markoff, Ryan, & Young, 1982**).

### **DO YOU ENJOY ...**

- Sharing your passion for health and fitness with others?
- Selecting and using training/instructional methods and procedures appropriate for teaching new things?
- Managing your own time and the time of others?
- Actively looking for ways to help people?
- Working with a wide variety of individuals?
- Being active and on the move?

### **TYPE OF WORK ...**

Today's fitness professionals are involved in numerous exciting and innovative careers that focus on "exercise as medicine". Professionals in this field include **personal trainers, group exercise instructors, corporate fitness directors, researchers, fitness technicians, fitness specialists, coaches, teachers, rehabilitation specialists, athletic trainers, and recreation managers**. They work with clients in a variety of settings including, but not limited to: gyms, recreation center, rehabilitation settings, aquatics settings, outdoor facilities, client's homes, resorts/spas, schools, and athletic training facilities. Fitness professionals work with client's of all ages, genders, abilities, and at various life stages.

Fitness professionals help clients assess their level of physical fitness and set and reach fitness and health goals. They demonstrate various exercises, help clients improve their techniques, and help provide motivation for clients. Group exercise instructors conduct group exercise sessions that involve aerobic exercise, stretching, and muscle conditioning. Pilates and yoga are two increasingly popular conditioning methods taught in exercise classes. Group exercise instructors are responsible for ensuring that their classes are motivating, safe, and challenging, yet not too difficult for the participants.

### **PATHWAY TO SUCCESS ...**

The majority of employers require fitness professionals to have a nationally recognized certification (NSCA, ACSM, ACE) and experience in or further certifications in specialty areas (Yoga, Pilates, Exercise and Pregnancy, etc.). An increasing number of employers require fitness professionals to have an Associates or a Bachelor's degree in a field related to health or fitness, such as exercise science or physical education. Most employers require both a degree and a national certification. Physical Therapists,

Physical Therapy Assistants, Athletic Trainers, Dieticians and some other careers require further education (Master's degree or PhD) and licensing.

### **WHAT EMPLOYERS LOOK FOR ...**

Employers need individuals who ...

- Have a passion for health and fitness and a strong desire to help others.
- Have the ability to plan and lead a class or an individual client in a manner that is motivating and safe.
- Are outgoing, good at motivating people, and sensitive to the needs of others. Have strong sales skills.
- Can explain safety rules and regulations governing sports, recreational activities, and the use of exercise equipment.
- Offer modifications for exercises during classes or training sessions to accommodate different levels of fitness.
- Plan routines, choose appropriate music, and choose different movements for each set of muscles,
- depending on participants' capabilities and limitations. Observe participants and inform them of corrective measures necessary for skill improvement.

Movement Science prepares students for careers in different health-related disciplines, such as medicine, physical therapy, occupational therapy, physical rehabilitation, and biomedical research. The curriculum includes coursework, laboratory research opportunities, and hands-on learning experiences that focus on understanding the control, mechanics, and physiology of human movement. The program culminates with a B.S. degree in Movement Science with emphasis in three disciplines:

**Biomechanics** applies principles of mechanics to human movement. Biomechanics courses offer good preparation for graduate studies in biomechanics, ergonomics, prosthetics, physical therapy, or rehabilitation medicine.

**Exercise Physiology** focuses on metabolic, hormonal, and cardiovascular responses to acute and chronic physical activity. The curriculum prepares students for careers in health-related fields, as well as for graduate studies in exercise physiology, physical therapy, occupational therapy, and biomedical research.

**Motor Control** examines the ways movement is learned and controlled across the lifespan through neural and behavioral mechanisms that include cognitive factors. Motor control knowledge can be



applied in physical and occupational therapy careers, as well as other health professions.

**Honors students** are expected to pursue a rigorous and diversified course of study. Students must complete the regular Movement Science curriculum as well as advanced coursework, independent study, and a thesis during the senior year. Students must maintain a 3.5 GPA throughout the program. (Dr. Susan Brownsheeb@umich.edu)

### **LEARN HOW TO ASSESS, ANALYZE AND HUMAN PERFORMANCE ENHANCE.**

Develop the hands-on and technological skill set necessary to succeed in the rapidly growing world of fitness, health and wellness, sport and human movement.

The field of exercise and movement science is rapidly expanding, both from professional athletes looking for enhanced performance to individuals looking for an enhanced quality of life. As new technologies begin to mainstream the “quantified self” movement, a multitude of career opportunities are opening up for individuals with degrees in exercise and movement science and a sophisticated understanding of human movement performance.

### **PHYSIOLOGICAL UNDERSTANDING + PERFORMANCE TECHNOLOGY APPLICATION**

Lewis’ innovative and interdisciplinary curriculum combines anatomy, physiology, kinesiology, biomechanics, motor behavior, nutrition, technology, data analytics, and more, through which you will:

- Develop deep anatomical and physiological understandings of the body’s response to exercise and movement
- Learn to measure human performance through use of video and computer-based assessment paradigms
- Understand the complex nature of nutrition and its variable effects on human performance
- Examine the ways biomechanical movements are acquired, performed and controlled through neural and behavioral mechanisms
- Learn to gather data and utilize analytics to discover insights on training and sports performance
- Develop best practice methodologies for athlete assessment, functional analysis and performance improvement

- Conceptualize innovations and trial new strategies and technologies within the fitness, sport, and movement-related fields.
- Get hands-on experience of athletic assessment at one of the top NCAA Division II athletic programs in the nation
- Get hands-on training with cutting-edge sport performance measurement tools
- Internship, work placement and clinical experience opportunities through leading local fitness and healthcare employers, starting as early as your first semester on campus
- Earn certifications throughout the program from accredited organizations like the American College of Sport Medicine (ACSM), the National Strength Training and Conditioning Association (NSCA), and the National Academy of Sport Medicine (NASM).
- Small class sizes provide the perfect learning environment for hands-on real-life application
- The program features an evolving curriculum design that incorporates special and current topics to keep up with industry trends and technology

### **WE CAN HAVE SUCH EXPERTISE.**

- Exercise Physiologist
- Fitness Director
- Sport Performance Specialist
- Personal Trainer
- Group Exercise Instructor
- Strength Training and Conditioning Specialist
- Corrective Exercise Specialist
- Health Navigator
- Recreation Therapist
- Health Fitness Professional
- Corporate Wellness Professional
- Activity Coordinator
- Sport Biomechanics
- Athletic Coach

Exercise and Movement Science can also be used to prepare for graduate studies in the following disciplines: Occupation Therapy, Physical Therapy, Kinesiology or Exercise Science, Exercise Physiology, and Ergonomics.

To conclude the part that many people view the active life and its associated behaviors as a medieval torture or religious rite, replete with fasting, denial, and mortification of the flesh. These folks are unwilling to give up the pleasures of rich (fatty) foods and unable to break addictions to cigarettes, drugs or a alcohol. Since behaviors are often inter related in a dogma of self-indulgence, these same individuals are likely to disdain the pleasures and rewards of the active life

## REFERENCES

1. Adams, W. C., Bernaur, E. M., Dill, D. B. & Bomar, J.B., Jr. (1975). Effect of equivalent sea level and altitude training on VO<sub>2</sub> max and running performance Journal of Applied Physiology, 39, 262-268.
2. American college of sports Medicine, (1995), ACSM Guidelines for Exercise Testing and Prescription (5<sup>th</sup> ed) , Baltimore: Williams & Wilkins.
3. Andrell, D. (1984). The history and future of wellness. Pleasant Hills, C A : Diablo Press.
4. Astrand, P.O., & Rodahl, K.(1970). Text book of work physiology: Physiological bases of exercises (2<sup>nd</sup> ed), New York: McGraw-Hill.
5. Benson H (1975). The relaxation response. New York: Harper & Row
6. Blair , S (1993). Physical Activity, Physical fitness, and Health. Research Quarterly for Exercise Science and Sport,64, 365-376
7. Blair S,& Kohl, H.(1988) Physical Activity or Physical fitness: Which is more important for health? Medicine and Science in Sports and Exercise, 20,S8.
8. Caspersen , C.& Merritt, R. (1995) Physical activities trends among 26 states, 1986-1990. Medicine and Science in Sports and Exercise, 27, 713-720.
9. Cooper K. H. (1970). The new Aerobics. New York: Bantam
10. Dr. Susan Brown ([shcb@umich.edu](mailto:shcb@umich.edu))
11. DeLorme, T & Watkins, A (1951). Progressive resistance exercise. New York : Appleton – Century Crofts.
12. Fitness and health, fourth edition, by Brian J, Sharkey, Ph D



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## TECHNOLOGICAL ADVANCEMENTS THAT HAVE CHANGED SPORTS

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### ABSTRACT

*In many sports there are many decisions which cannot be determined by human interfaces. So we need to use different types of technologies to determine the decisions perfectly One of most prominently used technology is HAWK-EYE technology. It is used in sports like cricket, tennis, snookers and in some games. It is a technology where we can determine speed, deviation of ball from actual track etc. Hawk-Eye as the most innovative technology provider in sports broadcasting and is a development that will reinforce the group's presence and influence. It is primarily used by the majority of television networks to track the trajectory of balls in flight.*

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**Keywords:** Hawk-Eye, Triangulation, phenomenon, measuring angles, 3D ball.

### INTRODUCTION

When sports and science interact you have powerful results, Can you imagine your life without science? Unless you are OK with the idea of living without medicine and transportation the answer is a resounding no. Now think about sports. Sports today use increasingly complex technologies to enhance performance. You may not see the obvious link between sports and science, but this is all around the industry. The TV you watch in your bedroom, the protective gear used when you play, the heart monitors, analytics, fantasy sports applies it's all forms of science, and it is all around us.

We have seen some considerable leaps forward in sporting performance as a direct result of technology either used during competition or in training, but the big question is, which technology has had the biggest impact on its respective sport? The game of cricket has attained great commercial importance and popularity over the past few years. As a result there has been felt a need to make the game more interestingly for the spectators and also to try and make it as fair as possible. The component of human error in making judgments of crucial decisions often turns out to be decisive.

Alas, technology never rests; there are always new ideas, tests, and problems to solve. But in this moment of time, Here are some technologies which have changed the sports world.

### HAWK-EYE TECHNOLOGY

This is the revaluation in this field in year 2001 saw the birth of phenomenon which the world soon came to know as HAWK -EYE.

This technology uses 6-7 high-end cameras situated above the field of play (e.g. a birds-eye view) to analyze the flight and trajectory of an object being used in sports competition. Most commonly used in Tennis, Cricket, Rugby, Badminton and Volleyball, Hawk-Eye Technology has been in use since 2006 in tennis and cricket is more accurate than a judge's eye.

### BENEFITS OF THIS TECHNOLOGY

- 1) Hawk-Eye technology helps to take an error-free decision in cricket, lawn tennis, rugby league, football, and baseball etc.
- 2) This technology has reduced the criticism of the players and spectators about the decision of the match referee.
- 3) By analyzing the movement of the balls through this technology, the umpire can take an error-free decision quickly when the game is going on. With Hawk-Eye Technology, you just don't see this anymore: Hawk-Eye also has its applications in military operations and automobiles.

### PRINCIPLE OF HAWK-EYE

A Hawk-Eye system is based on the principle of Triangulation. **Triangulation** is the process of determining the location of a point by measuring **angles** to it from known points at either end of a fixed baseline.

## PROCESSOR FOLLOWS 4 STEPS

- (a) Identify each frame from each camera, and groups the corresponding pixels to the image of the ball.
  - (b) Compute for each frame the 3D position of an image thus identified using ball image data from at least two different cameras.
  - (c) Predict a ball flight-path from the said 3D ball position as computed in successive frames.
  - (d) Map the predicted path on the modeled area so as to identify any interaction with one or more of the said characteristic features.
- 1).The cameras are used in two sets, and a multi-channel frame grabber handles each set of cameras.
  - 2).The images captured are then processed by software to produce a 3-D image.
  - 3).This is updated 100 times every second.
  - 4).The system is able to locate the ball in 3-D and can predict the motion with a claimed accuracy of 5 mm.
  - 5).The system generates a graphic image of the ball path and playing area by using which umpires take decisions.

## APPLICATIONS

Its applications are mainly in sports like **Cricket, Tennis, Badminton, Volley ball and other games** .

## CONCLUSION

We have looked at various aspects of the HAWK-EYE technology. Initially, we outlined the main problems which one could encounter while trying to implement such a system for a sport like cricket. Then, we looked into the details of each step of the process which finally gives us the wonderful looking graphics that we see on TV during cricket analysis shows. We got a fair understanding of the algorithms and mathematics which goes into the system. With the help of examples, we looked at the applications which the technology finds in modern day sport, with cricket being our main focus. We got an understanding of how the graphics can be produced, using the setup, which also was described in detail. We have thus seen that the HAWK-EYE is a great innovation, which puts technology to good use in the field of sports. The technology is used widely these days, in sports such as Tennis, Badminton and Cricket. The accuracy which can be achieved with the use of the system is making the authorities think seriously about reducing the human error component involved in important decisions. As the system runs in real time, there is no extra time required to see the visualizations and graphics. The system is also a great tool which can be used by players, statisticians, tacticians, coaches to analyze previous games and come up with strategies for subsequent ones.

## REFERENCES

1. <http://www.hawkeyeinnovations.co.uk/> ,
2. <http://en.wikipedia.org/wiki/Hawk-Eye> ,
3. <http://www.scribd.com/> ,
4. \*<http://www.google.co.in/> ,
5. \*<http://www.fas.org/> ,
6. \*<http://www.autoequip.co.za/alignment-equipment/3d-digital-imaging-alignment-dsp600>
7. \*Video Processor Systems for Ball Tracking in Ball Games. International publishing number WO 01/41884
8. [www.hawkeyeinnovations.co.uk](http://www.hawkeyeinnovations.co.uk)
9. \*[www.wikipedia.org](http://www.wikipedia.org)  
\* [www.therulesofcricket.co.uk](http://www.therulesofcricket.co.uk)

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## **USE OF INFORMATION TECHNOLOGY IN PHYSICAL EDUCATION & SPORT**

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### **INTRODUCTION**

In a modern & Technical era in the field of physical education & sports it is most to use new technique, new equipments & new tools to improve the standards & performance for this. Hi-Tech Technology is the most important factor in the field of physical education & sports.

Hi technology important roles for delivering physical education & sports around the world, ICT has changed the development planning and management of coaching in physical education and sport. The use of ICT is easiest method & gets a effectiveness result. ICT available for all any time & any where implementation of ICT in physical education & sports are enhanced he performance of player & achieving best level, for this purpose paper focused on use of ICT in physical education & sports, new concept of ICT application of ICT, role of physical education Teacher & coaches, suggestion for physical education teacher & coaches etc.

### **WHAT IS ICT**

ICT is an umbrella term that includes any communication device or application, encompassing radio, cellular phone, computer, network & software satellite system & so on, as well as the various services & application associated with them such as video conferencing & distance learning ICT are often spoken in particular context, such as ICT education, physical education, sports & health care.

### **DEFINATION OF ICT**

Information Technology is an application & commodity support through which or by means of which information is transferred, recorded, edited, sotred manipulated or disseminated.

According to UNESCO information technology as scientific, technology & engineering disciplines & management techniques used in information handling & processing information & their application, computer & their interaction with man & machine & associated social, economic & cultural matters.

### **ICT TO IMPROVE STUDENT LEARNING**

ICT should to be utilized selectively within the learning context & should focus upon improving students understanding & enthusiasm. The prime goal must reside with effective teaching & learning with ICT contributing to such a dynamic process.

It is important to remember that ICT is not a tool for learning but a medium for delivering pre determined content. Lessons must be avoided where students simply search for & retrieve information with no prior learning outcomes being set by the teacher.

ICT allows the teacher to reconsider teaching & learning & frees the teaching form the constraints of the classroom & traditional teaching strategies. ICT is appealing to students & must surely be the preferred learning mode, given that the computer is often viewed as the 'Child's Machine'. If learning materials are designed around technologies, the students should be motivated by such opportunities as use of technologies in physical education & sports.

### **TALEMATICS**

Telematics typically is any integrated use of telecommunications & informatics, also now as ICT telematics is originally coined to mean the convergence of telecommunication & information processing, the term later evolve to refer automation in automobiles. This includes dial up services to the internet as well as all type of networks with Global positioning system (GPS) tracking data processing is very sophisticated system of handling software & language.

### **MULTIMEDIA**

Computer have integrated learning with multimedia presentations.

- Internet : A global network providing the capability to communicate, share ideas & access information & resources from around the globe.
- Intranet : Similar to the internet, but information from within a school or organization.

- World wide web : The world wide web is that part of the internet supporting graphics audio, video & hyperlinks (the ability to connect form on computer site to another) as well as standard text.
- Local area network : The development of local area networks (LANs) allows computer users to communicate with each other without leaving their location or without the need of a telephone conversation.
- Technology in physical education & sports in Physical education & sport field. Technology helps physical education teachers) coaches/ Trainers to enhance the learning process in academics & sports performance by employing innovative techniques/ methods. Technology is used an effective tool to enhance I the authenticity of the decisions & results.

The learning process in academics and sports performance by employing innovative techniques/methods. Technology is used as an effective tool to enhance I the authenticity of the decision and results.

**Assisting the Umpires/Referees :** In the field of sports instant replay and other high-tech aids are used to help referees in order to make the right call. Basketball referees use replay systems to make sure players are shooting within the time allotted by the shot clock. In international cricket, the third umpire sitting off the ground with access to TV replays of certain situations (such as disputed catches and boundaries) to advise the central umpires. The umpires out on the field are in communication via wireless technology with the other umpire. The Third umpire is also asked to adjudicate on an out decisions, which he makes without consultation with the two central umpires. Replays could be used to decide off-side decisions, whether a ball passes over the goal line, and clarify penalty decisions in football.

**Hawk-Eye Technology :** Hawk-Eye is revolutionary sports tracking device. Hawkeye is the name of computer and camera system which traces a ball's trajectory. This has helped transform coverage of Test Cricket and other sports, including tennis. Hawke- eyes used in Wimbledon providing both stats and line call coverage for the BBC and ESPN. The system is the most technologically advanced cricket coaching system in the world. It provides valuable information to players, coaches and umpires to enable them to identify faults, measure performance and improvement, focus on specific areas and improve

tactical awareness. Hawk-Eye is currently developing a system to have correct decisions in any kind of game. HawkEye is a computer system used in cricket tennis, snookers, volleyball, basketball, hockey, wushu, cycle polo and other sports to visually track the path of the ball and display a record of its most statistically likely path as a moving image Hawk-Eye can track any type of bounce, spin, swing and seam movement of the ball. Give as prediction as accurate as 99.99 percent Hawk-Eye was used for referring decisions to the third umpire in LB,W. They track the ball's entire trajectory, right from the point where it is released from the bowler's hand to the point the ball is considered dead.

**Authentic Substitute for Human Error:** In the earlier days, whatever decision was made by the match officials was considered the last word. Though efforts had been made by all the great sports governing bodies of the world to do away with bias, yet the element of human error still remained and will continue to exist. What technology strives to do is to remove the element of human error in the course of a match been played.

**Technological Advancement in Equipments:** Equipment is constantly changing in all sports. It has become to increase power and reduce injury, it is now stronger and provides better protection in certain sports.

**Technological Advancement in facilities :** Technology has improved the materials that are available to sports manufacturers making the athlete more aerodynamic in swimming cycling, skating and has improved the quality of surfaces in football, hockey tennis athletics and gymnasium halls. Improvement in playing surfaces has made the sports safer and attractive. Fitness Gyms are full of computerized training Equipment, Stadiums are being updated to make spectators Safer.

**Technology Applied to athlete's Health :** Ranging from nutrition to the treatment of injuries, as' She knowledge of the human body has deepened over time, an athlete's potential has beini, increased<sup>1</sup>; Athletes are now able to play to an older age, recover more quickly from injuries and train more effectively than previous generations of athletes.

**Encourage Research :** Advance technology Created new opportunities for research in physical education and sports. Being able to use motion capture to capture an athlete's movement or advanced computer simulations to model physical scenarios has greatly increased an athlete's ability

to understand what they are doing and how they can improve themselves.

#### **Technology Advancements in Sports:**

Technology continues to transform many aspects of our lives. Today with the advent of mobile phones we can communicate with the rest of the world no matter where we are, micro sensors can detect an imminent car crash and deploy airbags in the instant before a collision, and computers that once filled a room can be carried in our pockets and owned by everyone. Technology has gone a long way in proving its mettle in sport. It has created a niche for itself in every major sport on the planet. Be it the outdoor sports like soccer, tennis or cricket or their indoor counterparts like snooker, badminton or basketball technology is used in each one of them. Treadmills swimming flumes, cycling and rowing machines replace the usual athletic environment so that they can be more easily assessed. Ventilators can be used to monitor lung function and consumption of oxygen. Pedometers, heart rate monitors and trip computers for bicycles today are common place and represent some of the earliest technological innovations popular with elite and recreation athletes alike. A runner, swimmer or rower wearing these devices can have examined in detail their performance on the track or even on race day itself.

**Hot Spot :** Hot spot is an infra-red imaging system used in cricket to determine whether the ball has struck the batsman, bat or pad . Hot spot is new technology that requires two infrared cameras on opposite sides of the ground above the field of play that are continuously recording an image. With the use of this technology we can help the batsman in knowing the truth that the ball had struck the pad and not the bat, with the help of the white spot which is produced on the pad.

**The White Spot :** Whenever we slap a person, we are applying some force and at this instant the heat is produced due to the friction that occurs between the face and hands and if we use the IR cameras we could easily detect this.

**Hypoxic Tent :** An altitude tent, also known as an altitude simulation tent or hypoxic tent, is an enclosed living space which simulates high altitude by maintaining a lower oxygen concentration. It is used by athletes and by high altitude mountain climbers to stimulate the body's natural adaptations to altitude including an increase in the number of red blood cells and enzymes, Red blood cells carry oxygen to the body; athletes benefit from increased delivery of oxygen to the muscles, and mountain climbers can

avoid altitude sickness by better utilizing the diminished amount of oxygen found at high altitudes.

**Automated Boxing Scoring System :** The Automated boxing scoring system (ABSS) is a research and development project being developed by a group of Australian institutions and private companies. It aims to provide a training aid and unbiased scoring for the sport of Amateur Boxing and potentially other Combat and Martial arts sports.

**Pre Cool Vest:** A cooling vest or ice vest or "pre cool vest" is a piece of equipment worn to cool a person down. Cooling vests are used by many athletes, industry workers, doctors working dogs, people with Multiple Sclerosis or Hypo hydrotic ectodermic dysphasia and by military pilots and tank crew. Olympic athletes use the lightweight body cooling vest to pre-cool before events.

**Cyclops :** Cyclops is computer system conceived by British inventor Bill Carlton of Malta, which is used on the ATP and WTP professional tennis tours to help determine whether a serve is in or out. The system, which must be activated by the chair umpire before each serve, projects five or six infra-red horizontal beams of light along the court 10 mm above the ground. One beam covers the good (short) side of the service line and others cover the fault (long) side.

**Desso Grass Master :** Desso Grass Master is a sports playing field surface composed of natural grass combined with artificial fibres. The artificial grass fibers are injected 20 centimeters (7.9) in deep and cover about 3% of the surface. While the grass is growing. The roots interwine with the artificial fibers. The designers claim this anchors the field to create a solid, even structure with good drainage and 'playing comfort'

**Goal-Line Technology :** Goal-line technology is proposed technology which determines when the ball has crossed the goal -line thus indicating whether a goal has been scored or not. Goal-line technology has not yet been implemented in a competitive game of association football.

**Point Tracker :** Point Tracker created by IBM, is an application featured in grand slam tennis tournaments that presents an animated 3D view of each shot played in a singles match.

**Global Position Systems :** High precision GPS or Global positioning systems now have accuracy better than 1 Ocm and can be used to monitor runners, skiers, football players and rowing sculls position and even velocity, **Rail Cam :** The camera is fastened to rail system that runs on the

top of the glass on one side of the ice rink. As the play shifts from end to end, the motorized mount allows the camera to follow the action, sliding rapidly down the side of the ice. Though there is an ongoing debate on the feasibility of the use of technology in sports, it has certainly provided man with a useful tool to reduce human error and increase performance and as far as its scope is concerned, it is definitely here to stay.

**EMG Biofeedback** : EMG stands for electromyography, measures the electrical response of the muscles when contracting. The electrical response is measured with pads placed on the skin and results are displayed visually and/or indicated by a tone sound. By indirectly measuring muscle contraction, this allows the user to see and/or hear their level of muscular tension; EMG biofeedback produces rapid and significantly greater development of strength when combined with more traditional form of strength training. It

is used for muscle reeducation and strengthening in sports rehabilitation following surgery or trauma, selective training of a particular muscle after injury and to remediate neck, scapular and lower back pain.

### **SUMMARY**

At last, it is to be said that technology has become a part and parcel of entire physical education and sports environment, other than the area of broadcasting and televising sports events. Technology in the form of teaching aids (wind gauge, underwater camera, photo finish camera, various measuring tools, foul indicators, electronic gadgets, overhead and LCD Projectors, laser beam technology, adobe Photoshop etc.) helps the physical education teacher and sports trainers to make their teaching and coaching more interesting and also improves the teacher-taught relationship.

### **REFERENCES**

1. Berghoff W, Pietrzak W, Rhodes R. "Platelet-Rich plasma application 'during closure following total knee arthroplasty\* Orthopedics. 2006, 29 (7):590-8.
2. Bruce, Linda et al, (2005) Sports Technology. Macmillan Education Australia. Buckwalter J.A, Brown TD (2004)
3. Buchcha A. N. (2014), "Research Paper in National Conference".
4. Elizaveta Kon Roberto Buda, Giuseppe Filard, et al. "Platelet-rich plasma: intrarticular knee injections produced favourable results on degenerative cartilage lesion". Knee Surg Sports Traumatol Arthrosc DOI 10.1007/00167-09-0940-8. 14 September 2009.
5. Everts P, Devilee R, Mahoney C, Eeftinck-Schattenkerk M, Knape J, Van Zundert A. "Platelet gel and brin sealant reduce allergenic blood transfusions in total knee arthroplasty", Ada Anaesthesiol Scand. 2006, 50: 593-9.
6. Fenwick SA, Hazleman BL Riley GP. "The vasculature and its role in the damaged and healing tendon", Arthritis Res.2002: 4: pp. 252-60. Fridetl, Ron (2009) Sports Mechanics Learner Publication Company, USA. Gardner M.J. Demetrakopoulos D, Klepchick P Mooar P. "The efficacy of autologous platelet gel in pain control and blood loss in total knee arthroplasty: an analysis of the hemoglobin, narcotic requirement and range of motion". Int Orthop. 2006, 31: pp 309-13,
7. Guran J.M. Juran on Quality by Design. "The new steps for planning Quality into Goods and Services\*. The Free Press New York, 1992.
8. Kharat Avinash (2014), "Research Paper in National Conference".
9. Kunte D.B. (2014), "Research Paper in National Conference".



## **EFFECTS OF PSYCHOLOGICAL STRESS ON REACTION TIME**

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### **ABSTRACT**

*Psychological stress impacts, and has the potential to impact, many aspects of individuals' lives, including physiological and emotional states. Research correlating anxiety, sleep deprivation, and other factors which can be closely aligned with psychological stress, indicate that perhaps psychological stress can lead to an increase in individual reaction time. This study recruited 100 adult participants who do not have any diagnosed mental disorders which could be the cause of their stress. Half of the participants were assessed and placed in a "significantly psychologically stressed" group, and half were considered non-significantly stressed.*

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**Keywords:** Psychological stress

### **INTRODUCTION**

Psychological stress affects each person differently, although its effects can include a wide range of emotional and physical symptoms. Stress may be associated with daily routines, or caused by sudden life changes and trauma. Individuals respond to and perceive their stress levels uniquely. Research has shown that significant stress can also cause increases in heart rate, blood pressure, and respiration rates (Costin, Rotariu&Păsărică, 2013). Stress can affect a person's thoughts and feelings, behavior, and physiological state. Since stress can be distracting, it may affect a person's ability to react as quickly to stimuli as those who are not experiencing significant stress.

Many known factors influence reaction time, including arousal or states of attention, age, mental and physical fatigue. Several of the factors which affect reaction time can be effects of psychological stress. Several studies have studied the effects of stress on reaction time, although few have made the distinction of "mental" or "psychological" stress, and this factor is usually studied along with others. One study, for example, studied the effects of psychological stress on reaction time, along with studying the effects of gender and color of stimulus on reaction time. The study found that psychological stress "resulted in a significant decline in the reaction time" to a specific color in male participants (Venkates, Ramachandra, Baboo&Rajan, 2002, p. 560). It is difficult to draw specific conclusions about the role of psychological stress from this study, since a

number of factors were being tested. It also only points to a decline in reaction time for males. Das, Gandhi, & Mondal(1997) reported that, the factor of stress in premenstrual phases was found to result in decreased reaction times. Many researchers have noted the fact that significant, or excessive, stress can cause: anxiety, reduced concentration, sleep difficulties, and more (Swann, 2011).

### **METHODOLOGY**

#### **RESEARCH TOOLS AND APPARATUS**

To measure the level of stress : Zung Stress online test being used to find out the level of stress. This study was aimed for comparing the reaction times of various state Indian National Wrestlers. Visual Reaction times of the 200 subjects were measured with Top End Sports Online Reaction time test in an environment.

### **RESULTS**

This study was aimed at discovering what, if any, relationship exists between psychological stress and reaction time. Researchers believed that significant psychological stress would distract individuals, and produce emotional and physiological symptoms that would result in their reaction times being lower than non-stressed persons.

### **SUMMARY**

Once suitable participants are recruited, they will be administered brief physiological (heart rate, respiratory rate, and blood pressure) and

psychological (self-report information about stress in their lives, brief interview with a psychiatrist to rule out any persons whose stress may be attributed to a mental disorder) assessments. This information will be used to place participants into two groups: participants that are significantly psychologically stressed at the time of the study, and participants who are not significantly

psychologically stressed. Participants will complete a short, computer-based test which asks them to respond to a visual stimulus by pressing any key. Reaction times will be recorded by the computer and statistically analyzed.

### REFERENCES

1. Costin, H., Rotariu, C., & Păsărică, A. (2013). Identification of psychological stress by analyzing electrocardiographic signal. *Environmental Engineering & Management Journal*, 12(6), 1255-1263.
2. Das, S., Gandhi, A., & Mondal, S. (1997). Effect of premenstrual stress on audiovisual reaction time and audiogram. *Indian Journal of Physiology and Pharmacology*, 41(1).
3. Swann, J. (2011). Understanding the common triggers and effects of stress. *British Journal of Healthcare Assistants*, 5(10).
4. Venkatesh, D., Ramachandra, D., Baboo, N., & Rajan, B. (2002). Impact of psychological stress, gender and colour on visual response latency. *Indian Journal of Physiology and Pharmacology*, 46(3).



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## BENEFITS OF USING INFORMATION TECHNOLOGY IN SPORTS

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### ABSTRACT

*This paper has been written relating to advance technology which has effectively magnified the equipment designs used in International sports competitions, and actively understand the impact of the advanced technology of apparatuses in conducting sports competitions received better-quality design to refer it as a paramount importance in getting accurate results in the contested events. Thus, use of various technological apparatuses such as computers plays a very effective and crucial role in conducting the sport competitions worldwide. In many Asian as well as in Euro American nations, it has become remarkable example that these nations are using advance technology in sports competitions and have the ability to use modern equipment that are incorporated with sensitive devices in computers as its important function. The display of well-designed equipment's manufacturing athletic gears provide enormous benefits to the relevance of delicate resources which reduce the weight during active work outs that increase the strength and provide superior probability to extend the life span of individuals who engage themselves in regular physical daily activity programs. It is important to note that advance equipment's and material used have made the sport participation safer that helped to increase the large number of participants in sports competitions equally for boys and girls at all levels as it seems good sign for sports competitions particularly developing country like Bangladesh.*

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**Keywords:** Information technology, sports technology, Bio-mechanism

### INTRODUCTION

The field of physical education and sports can make a significant contribution to the role that technologies play in our lives by carefully considering the benefits and liabilities of new information technologies on the whole person, body as well as mind. Information technology play vital role in the human being in particularly in field of sports and games. It helps to avoid mistake in organization and administration of various sports and games at world level.

Information Technology in Sports has established scientific discipline, Research activities, improve Learning and coaching, Bio-mechanical analysis and field research have evolved. In future very soon the way computer with be applicable in sports with good quality and best results.

Benefits of Information Technology Here are some of the ways technology can provide or facilitate most of the types of support that someone trying to become or stay physically active needs. Now a day's computer is widely used as training. In this era of globalization sketch board is quit away. Power point presentations, Video clips and Sound have become much more effective and needful, CD, DVD is more useful in training. Some way

computer is applied in sports sciences, scoring systems, computerized test all evaluation can be largely followed. A coach keeps monitoring on the players. A computer helps us if any deficiency is found. Records of the player can be maintained for future plan Selection of players for various game and sports is an important for this multiple regression helps in many ways. Hence computer plays a significant role in storing research data and its analysis. Treatments in sports medicine involve Cardio-Vascular, Flexibility and strength building programme. Sports Medicine is the study, prevention and treatments of sports and fitness related injuries.

### APPLICATION IN SPORTS

The field of physical education and sports can make a significant contribution to the role that technologies play in our lives by carefully considering the benefits and liabilities of new information technologies on the whole person, body as well as mind. I.T. and computers is more authentic innovation and convincing. A variety of programmes are available which help in track-grading, conducting health assessment, monitoring

research projects, and analyzing sports performances.

### **CONTRIBUTING TO SPORT EQUIPMENT RESEARCH AND DEVELOPMENT**

Computer Aided Design, more commonly known as CAD, has also played an integral part in designing enhanced sporting equipment, ultimately resulting in optimum athletic performances. CAD makes it possible to apply virtual design and testing techniques to each and every aspect of movements, thereby contributing to sport equipment research and development. CAD has proved to be an efficient resource for coming up with new sports products and brilliant ideas. It is mainly used to sustain protection, comfort and durability of specialized sports gear.

### **IMPROVING ATHLETIC PERFORMANCES WORLDWIDE**

Latest developments in sporting technologies have led to an influx of a large range of products which are enhancing athletic performances across the world. They are effectively maintaining athlete health, observing and treating injuries by means of heart rate and body-fat monitors. This has allowed a deeper understanding and knowledge of how athletes can further push their abilities and recognize their maximum potential. Moreover,

modern sporting technologies have also played their part in rectifying judging errors which ensure only the best athletes are able to win.

### **USES OF INFORMATION TECHNOLOGY IN SPORTS**

- 1) To update the health status of players.
- 2) Preparing training schedule.
- 3) Video Feed back of training session.
- 4) Storing the results to evaluate the sport person and trainer.
- 5) To analysis the team performance in competition.
- 6) The Coach can have the self-appraisal through the Information technology.
- 7) To Improvement in demonstrations and storing the personal data's of athletes.

### **CONCLUSION**

Information technology play vital role in the human being in particularly in field of sports and games. It helps to avoid mistake in organization and administration of various sports and games at world level. Information Technology in Sports has established scientific discipline, Research activities, improve Learning and coaching, Bio-mechanical analysis and field research have evolved. In future very soon the way computer with be applicable in sports with good quality and best results

### **REFERENCE**

1. Froes, F.H. Journal of Minerals, Metals & materials Society. 1997; 15-19
2. Jeganath Mohanthy. Modern Trends in Educational Technology. Hyderabad: Neel Kamal Publications. 2003.
3. Pradeep K Sinha, Priti Sinha. Computer Fundamentals. New Delhi: BPB Publications. 2003.
4. Ahmad S. Facilitating on TV: A Call for Broadcast Communication Style & Voice Management.
5. World Conference on E-Learning in Corp., Govt., Health., & Higher Ed. 2002; 1:2238-2241.
6. Almassy J. The Wonders of Mobile Learning, Exploration of the Sistine Chapel, Vatican, Society for Information Technology and Teacher Education International Conference. 2003; 1:2574-2575

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## THE USE OF INFORMATION COMMUNICATION TECHNOLOGY IN TEACHING AND LEARNING OF PHYSICAL EDUCATION

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### ABSTRACT

*The emergence and use of information communication technology (ICT) in this century is a significant development affecting the teaching and learning of physical education and sport. Education is faced with a new dimension dominated by e-learning. For Physical educators, this trend is also reflected by the necessity to improve their teaching and methodology. The modern alternative is the use of ICT meant to increase accessibility to information and teaching process effectiveness. This paper highlights the use of modern ICT in physical education and sports. The use of ICT for teaching and learning has been summarized, in the following aspects: the needs for ICT, computer-motion analysis, internet, video analysis/conferencing, chatting and challenges. It is concluded that ICT use enormously improve teaching and learning of physical education and sport..*

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**Keywords:** ICT In Physical Education (P.E.), Teaching and learning.

### INTRODUCTION

The National Association for Sport and Physical Education (NASPE) believes that technology can be an effective tool for supplementing instruction when used appropriately. Therefore, the primary purpose of this document, developed by a taskforce of NASPE's Physical Education Steering Committee, is to provide guidelines for using technology to help students achieve the Standards for Physical Education. Teachers now face a generation of students who have never known life without a computer, video game console, cellular phone or Internet access; and that is changing the scope of education dramatically. Technology tools can provide objective data on activity levels and creative methods for individuals to engage in physical activity. Studies have indicated that active gaming can promote higher levels of energy expenditure compared to seated video games, as well as increasing heart rate and oxygen consumption. National School Health Policies and Programs Study indicated that 42% of physical education teachers receive staff-development training on using physical activity monitoring devices; 37% on using technology overall. Also, between 17% and 49% of the teachers studied received additional training for administering fitness tests, assessing student performance, and developing portfolios and individual physical activity plans: areas in which technology can supplement instruction and help in managing data. Those statistics in addition to the

recent release of updated National Educational Technology Standards for Teachers underscore the importance of developing guidelines for proper technology use in physical education.

Technology such as projection systems, smart boards and wireless transmission (Wi-Fi and Bluetooth) allow for the display and transfer of information far beyond the traditional chalkboard. Teachers can enhance physical education instruction by using those tools, provided that set-up and/or implementation don't reduce student activity time.

Planning and preparing effectively in advance of lesson presentation is necessary to ensure that these valuable tools become an integrated part of the lesson with minimal transition time and manage Physical educators must consider which types of physical activity monitoring devices are suitable for students' developmental levels. Using technology to monitor children's heart rate and comparing the data to adult ratios, for example, or having children use pieces of equipment designed for adults can provide invalid information. Teachers should use these tools to enhance instruction only if the data provided are accurate for the grade level to which they are to Using technology for technology's sake might not provide relevant instruction experiences for students, since technology is not the curriculum but rather a tool or device to supplement. When implementing technology, teachers must continue to adhere to the best practice of maximizing participation and success.

All students, not only a few should benefit from technology. If not enough Instruct Desktop programs such as Microsoft Excel, and Web and CD-ROM software can allow for the collection of data using hand-held computers, with the ability to transfer results to desktop systems quickly. Those technologies can help physical educators determine assessment performance quickly and easily through calculation formulas, and allows them to create and customize individualized fitness plans, as well as offering many other uses.

Motion-analysis software and digital video make student performance evaluation easier, thereby enhancing teacher, peer and individual assessment. Many pieces of technology, such as heart rate monitors, pedometers and active games, have the ability to track performance, allowing students to document and monitor their progress. However, physical educators must consider the reliability and validity of such devices when selecting the technologies to use. Students also should be well-versed in using the devices, to prevent an increase in management time and are reduction in student activity levels.

Implementing technology appropriately into physical education can enhance teaching and learning and contribute to providing a quality physical education program. Technology can aid in content presentation and can help students becoming physically educated individuals who have the knowledge, skills and confidence to enjoy a lifetime of physical activity.

Practical use of technology in the teaching and learning of physical education opines that the use of technology in the learning process of physical education may not be a goal of its own but it is a tool with which to reach objectives. The following are the uses of technology in learning physical education.

### **INTERNET**

Internet is a global system of interconnected computer networks that promote free flow of information by packet switching using the standardized internet protocol suite. It is a network that consists of millions of private and public academic, business and government networks of local, global scope that are linked by copper wires, fiber-optic cables and wireless connections technologies. The internet provides various information resources and services which can be used by physical educators for teaching and learning. They include electronic mail, online chat, electronic transactions, and bulletin board, file transfer and file sharing, online newspapers, and

journals, online gaming and inter-linked hypertext documents and other resources of the worldwide web. Physical education teachers share experiences with other professionals via the internet which are integrated into teaching lessons. Students explore new knowledge as they surf the web for assignments, chat with fellow students and play games online. The internet can be used to maximize the effectiveness of their learning process of physical education. Students have the possibility to email their questions or comments concerning their questions concerning issues in health and audition fitness, physical education programmes, courses to their physical education teachers and academic staff. Internet is used to access a mailing list of professionals in the same area of study. A user sends an email message to like mailing list which is broadcast to other users for accessing current information. Examples are the sports philosophy and Questia lists.

### **COMPUTER**

Computer is an electronic device that has the capacity to store, retrieve and process both qualitative and quantitative information fast and accurately. Computers are used to produce documents, lesson plans, to convert scores management. It also involves video units PC heart rate monitor, remedy heart rate monitor and educational software. Computer also aids learning experiences when they are used for motion analysis. This involves using computer to examine the way learner moves and then determine ways in which this movement can be improved in a practical physical education class. This device stresses how human motor abilities can be perfected and controlled. For example if you ask a softball and baseball pitcher how he/she throws a fastball, they may not be able to tell you. Motion analysis visually shows the rudiments and sequence of actions involved in arm, leg movements to enhance performance of skills. Video tape images are also transferred into computers. Special application software analyzes the images. It measures the exact angle at which the players hold his or her arms and legs. The speed and efficiency of each movement is measured. When using images, the teachers' advantage consists in his possibility of making corrections as soon as pupils exercise is completed, which helps him to quickly progress and improves his learning. Other computer software such as the programme Professional Evolution Soccer (PES) is used to play games. Learners play,

identify appreciate the skills, rules and evaluate officiating of the game.

### **VIDEO CONFERENCING**

It allows two or more people at different locations to see and hear each other at the sometime. The communication technology offers new possibilities for sport colleges, libraries including formal instruction to share strategies for coaching sport skills. A very attractive multimedia tool determining students' enthusiastic participation in physical education lessons is represented by the audio aids. Direct or indirect aids such as drums, piano respectively. Radio cassette recorder equipped with CD/DVD can be used to reline the movement pace and get students familiarized, with some sonorous competitive conditions. The digital camera use in the instructive educative process allows a quick verification of students' placement and posture, being at the same time a very good mean to stress body segment positions when performing sonic motor elements. These are the potentials used to enhance teaching and learning of physical education.

### **CHAT THROUGH THE INTERNET**

Interactive chat improves communication with experts and colleagues and community members. Chat allows fellow physical educators to simultaneously communicate publicly on your website, internet, extranet. Team members, class and course mates from different locations can easily conduct on line meetings. Colleagues gather together to intimate groups and discuss issues related to physical educations. They could gather in large online events to interact coaches and teachers can assess chat groups on particular academic issues in physical education and sports

### **CHALLENGES OF TECHNOLOGY USING PHYSICAL EDUCATION**

Although technology has attractive potentials for improving teaching of physical education, it also has challenges especially in developing nations of the world. Physical educations are not technology compliant. The reports indicate that many do not still appreciate the use of technology in teaching and learning and complaint. Nowadays, it is uncommon to see physical education computers in classroom and on sport playground. These could be either ignorance of technology use or affordability of technology devices. Similarly most educational institution in Nigeria is not providing enough funds for equipping schools with technology devices. Technology becoming more and more mobile and affordable and this could eventually turn into a reality making the study of human movement in physical education a reality. Other challenges include the availability of regular power supply, staff training and development on technology softwares; assessing softwares and packages for teachers. Other challenges include crashing of computers corruption of files.

### **CONCLUSION**

Physical education essentially requires the performing physical activity. This is associated with the development of motor skill. Physical education within the school system requires time, facility space and interactive lesson plans. Technology provides access to information, compresses information, motivate learners, and connect learners to teachers and teacher to the colleagues. There are nowadays many available technological innovations that could be inserted into the physical education lesson. The visual physical education lesson is essentially based on the connected learning environment which uses technology that are networked in structure. Physical education should avail themselves of these technology opportunities to make their lesson more real and dynamic.

### **REFERENCES**

1. [http://en.wikipedia.org/wiki/Physical\\_education](http://en.wikipedia.org/wiki/Physical_education)
2. Okposio.O.Collins, The Use Of ICT in Teaching and Learning of Physical Education, Department of Physical and Health Education, College of Education, Agbor, Delta
3. Continental.J. Education Research 4(2):29-32, 2011 ISSN: 2141 - 4181© Wilolud Journals,2011
4. <http://www.pelinks4u.org/archives/technology/022601.htm>
5. <http://www.pesoftware.com/Technews/news.html>
6. <http://www.humankinetics.com/excerpts/excerpts/using-technology-to-promote-physical-activity>
7. <http://www.wiloludjournal.com> Printed in Nigeria

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## **ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICT) IN PHYSICAL EDUCATION AND SPORTS: AN OVERVIEW & PERSPECTIVE**

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### **ABSTRACT**

*In a modern and technical era in the field of physical education and sports, it is most to utilize incipient techniques, novel equipment and new tools to improve the standards and performance. Information and Communication Technologies (ICT) is the most consequential factor and methodology in the field of physical education and sports around the world. It has changed the development, planning and management of coaching in physical education and sports. The utilization of ICT is the most facile method and gets an efficacy result. The aforesaid system available for all, anytime and anywhere. Implementation of ICT in physical inculcation and sports have enhanced the performance of the player and achieving the best level, for this purpose paper focused on the use of ICT in physical education and sports with few novel concepts and its applications. The role of physical education teacher and coaches, suggestions for physical education teacher and coaches etc.*

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**Keywords:** ICT, Physical Education, Teaching and learning

### **INTRODUCTION**

Relentless innovation in computer and information science and the products that emerge from this innovation present educationalists with incipient and virtually revolutionary conceptions for engendering edifying and learning environments. Such concepts as 'Virtual learning', even 'Virtual Universities', and e-learning radically challenge the notion of how edifying can be carried out and where learning is achieved (McElhone, 2000). Teachers should be conscious of the quality of their teaching. Information and communication technology (ICT) is becoming increasingly pervasive in our modern society and a requirement for ideal means of teaching especially in the field of physical education (Zhang and Martinovic, 2008). Information and communication technology (ICT) has a significant role in teaching and learning process as a tool. The use of ICT by learners offers a potential to enhance learning as all subjects as well as physical education. Teaching will get new dimensions, as lessons will be greatly enhanced by the technology tools. The uses of multimedia instructional tools will significantly enrich the teaching content that will become more dynamic and captivating (Gerad and Mathiot, 2000). Sansauwal defined information technology as the use of hardware and software for efficient management of information i.e storage,

retrieval, processing, communication, diffusion and sharing of information for social, economic and cultural upliftment (Sansauwal, 2000). This includes the ability to use technology as a tool for research, organize, evaluate and communicate information and the possession of a fundamental understanding of the ethical issues surrounding the access and use of information (Zhang and Martinovic 2008). Physical education benefits from the integration of ICT in making lessons more natural and real. The utilization of ICT in physical education is becoming very important as it can make a significant contribution to primary, secondary and tertiary institutions. This starts with knowledge and understanding of principles applicable when considering using and implementing ICT software and programs in teaching physical education. The aim of this paper is to present a sketch of ICT usage in physical education and to explore its usefulness for the evaluation of computer-based learning.

### **FEW BASICS FUNDAMENTAL & PERSPECTIVE**

#### **2.1 WHAT IS ICT?**

ICT is an umbrella term that includes any communication device or application, encompassing, radio, cellular phone, computer, and network hardware and software, satellite



system and so on, as well as the various services and application associated with them such as video conferencing and distance learning. ICT is often spoken in a particular context, such as ICT in education, Physical education, sports and healthcare.

## **2.2 NEW CONCEPT OF ICT**

Some company making a software and taking a course of ICT one of the example is as Digital classes. Pearson world largest education company brings to you Digital class an ICT based solution that combines state of the art, hardware with syllabus, Compliant multimedia based interaction content this solution drawn upon Persons global expertise in digital content and its vast experience in education over hundred million people worldwide. They suggest that ICT tools make learning real-life experiences so that players understand and never forget therefore it is needful to use ICT tools in the field of sports and physical education for the purpose of development of skills, match practice, match the behaviour and advanced technique. Examples of ICT application that can be used in physical education and sports.

## **2.3 DEFINITION OF ICT**

Information technology is an application and commodity support through which or by means of which information is transferred, recorded, Edited, stored, manipulated or disseminated. According to UNESCO information technology as “scientific, technological and engineering disciplines and the management techniques used in information handling and processing information and their application, computers and their interaction with man and machine and associated social, economic and cultural matters.” According to ILA Glossary, “Information technology is an application of the computers and other technologies to the acquisition, organization, storage, retrieval and dissemination of information.”

### ➤ **Camera**

The video camera can provide footage of the experienced performance in action can be used to inspire, to demonstrate correct techniques and to develop players. The camera can also use in assessment for learning tools. The camera is immediately simple to use and it has a reasonable battery life.

### ➤ **Motive analysis software**

There are many software packages available in market useful for highlighting techniques are some of the athletic field events.

### ➤ **Film editing in PE**

To identify a common fault of players and after that give the suggestion to players.

### ➤ **Mobile camera phone**

We can take a photo, shooting of any technique and it can be observed through PC it is helpful to the sportsman.

### ➤ **Interactive whiteboard**

It is a surface onto which computer screen can display through a data projector. As it is a touch sensitive it allows the teacher to use a pen or finger-like mouse to control computer from the board and save any changes for future internet and website to support teaching and learning. Below enlisted tools are also applicable to get more information:

- Video projectors system
- Developing functional skills
- Video conferencing
- Youtube
- Powerpoint presentation
- N- list
- SMS mobile
- Two way SMS
- E-journals
- Research review

## **SUGGESTIONS**

Tim Kelly survey on ICT education and give four main suggestions they are as

- The importance of ICTs for training teachers. Much of this takes the form of basic computer literacy instead of how to integrate computers into teaching methods, but the emphasis on building capacity is important.
- Secondly, providing and sustaining ICT infrastructure in schools, especially through public-private partnerships, is essential.
- Thirdly, while ICT is an important part of formal educational institutions, it can be just as powerful in non-formal education settings, creating the opportunity for life-long learning.
- Finally, several countries have very strong Open and Distance Learning initiatives that seek to provide mass education and overcome geographic or financial barriers.

## **ROLE OF PHYSICAL EDUCATION TEACHER AND COACHES IN THE FIELD OF ICT**

Physical education teachers and coaches are the interfaces between players and ICT tools. Physical education teachers and coaches have a need to

focus and seize new opportunities and demonstrate how the ICT tools help and improve the performance of the player. And they can apply a greater role to change the development, planning and management of sports. This was they can take a right full place as human agent side the search engine in searching the internet.

### **CONCLUSION**

In modern and technical era it is must to know the cognizance of ICT for every physical teacher, coaches and players. The aim of this manuscript is

to the improvement of player performance by using advanced technology. The development of ICT in the field of physical education and sports has a significant impact on society and has benefited in developing countries.

### **ACKNOWLEDGMENT**

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### **REFERENCES**

1. M. McElhone (2000), A methodological approach to educational innovation - a case study involving web-based learning, British Educational Research Association Conference, Cardiff University, 7-10 September 2000.
2. Z. Zhang, and D. Martinovic (2008), ICT in Teacher Education: Examining needs expectations and attitudes, Canadian Journal of Learning and Technology, 34(2), Spring Printemps.
3. L. Gerard and D. Mathiot (2000), Techniques audio visuelles et Multimedia, Tomes L et 2 Dunod, Paris.
4. D.N. Sansanwal, (2000), Information Technology and Higher Education, University NEWS, 38(46)
5. [www.use of ICT in physical education and sports. Com](http://www.useofict.com)
6. [www.survey on ICT on education in Indina.com](http://www.surveyonict.com)
7. Interview on All India Radio "Importance of ICT" by Ranjit Dharmapurikar on dated 20 Nov. 2011
8. S.S. Awacher and S.K. Nair, Impact of Information technology on college libraries by Smt. - entire research vol. 3



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## **THE EFFECTS OF PSYCHOLOGY ON ATHLETIC PERFORMANCE**

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### **ABSTRACT**

*Negative external or internal psychological factors can lead to mental blocks, causing breaks in focus and preparation, poor performance and, at times, injuries to the athlete. They can produce physical disruptions such as muscles tightening, shaking and increased perspiration. If not dealt with, these factors may not only affect the athlete but the team as a whole. To combat these powerful effects, coaches and athletes can focus their efforts on tactics such as goal setting, routines, visualization and confidence.*

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**Keywords:** *psychological factors athletic performance*

### **INTRODUCTION**

We all know the importance of preparing physically to compete in sports, however, preparing psychologically is just as, if not even more important, for an athlete. Without the right mind-set, it will not matter how often an athlete has been training and working out - they simply will not be able to perform at their best. Both internal and external negative psychological factors can have a profound effect on how well an athlete performs; they can cause mental disruptions when practicing, breaks in focus, and even influence physicality, for example by causing shaking, muscle tightness, and increased perspiration, all of which can lead to injury if left untreated. Strategies such as goal setting, routine, and visualization can help athletes and coaches overcome these powerful psychological effects, along with talking therapies to help athletes change their mindset and improve their self-confidence.

### **EFFECTS OF PSYCHOLOGY ON ATHLETIC PERFORMANCE:- GOAL SETTING IN ATHLETICS**

Goal setting can be a successful tactic to improve athletic psychology. These goals, however, must be realistic. Goals should be designed in small increments that are genuinely achievable in the short term. I have seen swimmers who have struggled to meet larger goals, such as reaching a certain stage of competition or great improvements in their swimming times. Not reaching these exaggerated goals can lead to a loss of confidence and weak self-efficacy. Time goals set by athletes, such as swimmers and runners, should be minimal.

For basketball players, minor increases in points per quarter are a more attainable goal than all around statistical increases or wins.

It is incredibly important not only to make attainable goals, but also to break them down into small components to understand how a goal is going to be achieved. Once these small goals are established, the next stage of goal-setting in athletics should be accomplished: completion. An athlete should write down and physically check off each and every goal.

This exercise is beneficial for the psychology and confidence of the athlete. Checking off accomplished goals is tangible and visual, and it paints a clear picture of achievements. It also helps the athlete with visualization, a sense of self worth and strong self-efficacy. When athletes can see their goals being achieved, they are empowered and confident.

### **VISUALIZATION AND ATHLETIC PERFORMANCE**

Athletes who can visualize them having success will be successful. Individuals must battle the inside voice that is telling them they cannot complete their goals. To silence this negative voice, athletes can visualize success and practice self-talk. Positive self-talk goes hand in hand with visualization with the athlete both hearing and seeing success.

The more athletes imagine practicing a task, the easier it is for them to accomplish the task in a physical environment. They can rely on their visualized cues to help guide them through the act. Ice skaters, for example, visualize the different elements of their performance. Mentally, away from the ice, they feel the air, they hear the music

and they complete their jumps. Visualization is more important to individual sports such as ice-skating and gymnastics than for team sports. Practicing visualization is a form of meditation. It is critical for the athlete to be in a state of relaxation. This is harder for some athletes whose minds are constantly running. It may help the individual to listen to soothing music and cover his or her eyes. At first, the athlete may need a form of guided meditation, but it does not take long for successful visualization to happen alone.

### **ATHLETE ROUTINE AND PERFORMANCE**

While some athletes are not affected by routine, others can be superstitious and obsessively follow patterns before, during and after practice and competition. A popular routine that jumps to mind is listening to music. Some athletes prefer soothing music and others prefer louder, faster paced tunes. Relying on music for a routine can backfire when an athlete forgets their music or has technical difficulties with it. Once out of a routine, athletes may believe they aren't prepared and cannot focus. Many times visualization is a part of a routine. For example, on the way to the mat, some wrestlers may become nervous. To combat this anxiety, the wrestler may visualize a special place as a distraction. Whether it is a trip to an amusement park or relaxing on the beach, they work to take themselves out of their current situation to keep their mind off stepping on the mat and the anxiety of performance. While this works for

some athletes, others do not want to be distracted. They may thrive under pressure and want to stay in the moment as best they can.

### **CONCLUSION**

While many people may not think it has that much of an impact, it's been proven that psychology plays a central role in athletic performance. Studies show that over ten psychological factors can affect performance in either a positive or negative way, depending on the situation itself. Things such as goal setting, personal awareness, routine, concentration, meditation, confidence, control, and even overall flow mindset can determine whether an athlete will perform poorly or exceptionally in their chosen field.

All of these factors are strongly tied in with each other as well, and athletes who do not take the time to focus and balance themselves may find that their performance will suffer as a result. Confidence and stress management play a tremendous role in athletics, and a lack of either can be detrimental to athletic performance. Routines and muscle memory also play a significant role, as these psychological factors can help athletes find comfort and confidence in their sport or activity.

Goal setting is a key psychological factor because it allows the individuals to focus their resources and drive towards a single purpose. This can allow them to excel and push themselves forward, finding inner strength to perform at the highest level as possible

### **REFERENCES**

1. Roberts, N. (2017) How Does Psychology Affect Sports Performance? [WWW] Available [Accessed 18/2/2018].
2. Drake, R. A., & Myers, L. R. (2006). Visual attention, emotion, and action tendency: Feeling active or passive. *Cognition and Emotion*, 20, 608-622. (cited in the Emotion chapter).
3. Harmon-Jones, E., Vaughn-Scott, K., Mohr, S., Sigelman, J., & Harmon-Jones, C. (2004). The effect of manipulated sympathy and anger on left and right frontal cortical activity. *Emotion*, 4, 95-101.
4. Dunn, D.S. (2013?). A short guide to writing about psychology. (3rd ed) Harlow : Pearson Education. Guidelines with examples for citing references in APA style in Chapter 7.
5. Wallace, M., & Wray, A. (2011). *Critical reading and writing for postgraduates*. Los Angeles, Calif. ; London : SAGE.
6. Neville, C. (2010). In ebrary, Inc. The complete guide to referencing and avoiding plagiarism [electronic resource]. Maidenhead ; New York: Open University Press.
7. Pears, R., & Shields G. J. (2013). *Cite them right : the essential referencing guide*. Basingstoke : Palgrave Macmillan.S

## THE ROLE OF YOGA IN SPORT AND EXERCISE PSYCHOLOGY

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### ABSTRACT

*Mental preparation for competition is an increasingly important factor in athletes' training, but there has been very little field research on how the various preparation strategies affect different types of athletic performance. Now a new US study has shown that yoga and motivational exercises can both boost one-mile run performance through sports psychology, although the latter was most effective.*

**Keywords:** sports psychology

### INTRODUCTION

The ancient practice of yoga is thousands of years old. It was first brought to India 3,500 years ago by nomads from central Asia practicing an intellectual discipline they referred to as 'Yoga'. It was a way of using the mind to restrain the senses and control the body. The main tradition practiced in Western Europe is Hatha Yoga which is based on the Hatha Yoga Pradipika, which is a sort of manual of Patanjali's Yoga Sutras. It describes how to train the body, so that it can be used as a means of enlightenment.

The Bhagavad Gita, the Yoga Sutras of Patanjali and the Hatha Yoga Pradipika all form the central concepts of yoga's philosophy of life. Yoga techniques were summarized for the first time by Patanjali so as to bring a practical form of yoga to the people. 195 sutras were written in short, concise meaningful sentences. As in modern day psychology they are explanations of the nature of the mind, how it works and the obstacles, difficulties and emotional disturbances that can affect its functioning in terms of self-knowledge and reflective action. Patanjali recommended an 'Eight-Limb Path' as a way to change the mind positively. He believed that one of the mind's fundamental characteristics was its inability and refusal to stay in the 'here and now'. He described it as a monkey jumping from one branch of thought to another. As you will hear me describe in any of my classes, the mind is always wandering and being rebellious, never focusing on the moment, but instead getting distracted by past events, future plans and all the sensations it has to process in the meantime. As it is the mind's job to think, it is relentlessly interpreting everything that is seen, perceived and experienced. It is led by thought patterns, habits, doctrines, perceptions and

conditioning which have been learned and instilled over the lifetime of the person. These behaviors, thoughts, attitudes have been reinforced through repetition, regardless of whether they are good or bad, right or wrong.

### THE ROLE OF YOGA IN SPORT AND EXERCISE PSYCHOLOGY

In modern day psychology they might be referred to as self-defeating behaviors as a result of threatened egotism, self-regulation failure and emotional distress. They are ultimately afflictions of the mind, a huge cause of suffering that prevents us seeing things clearly.

In order to free the mind of these afflictions we practice Ashtanga. The Eight-Limb Path consists of:-

**Yamas** – dealing with the world around us. This is our moral code of conduct. These are the moral principles that govern the way you treat others and the world around you.

**Niyamas** – dealing with yourself. These are five observances or rules of conduct, by which we should live our lives i.e. purity, modesty, contentment, discipline, self-study and acknowledgement of our own limits.

**Asana** – dealing with the body. These are the physical postures or exercises in yoga.

**Pranayama** – dealing with breathing. This is the conscious control of energy by practicing controlled breathing techniques.

**Pratyahara** – dealing with the senses. This denotes the withdrawal of the senses. It teaches us to close the doors to the senses so that the mind can still be aware of external stimuli but no longer responds to them.

**Dharana** – concentration. This is the ability to focus our entire concentration on one object, one question, or one consideration and keep it there.

**Dhyana** – meditation. This is an interaction with the object of concentration whereby we become observers and view the object intuitively, free from subjective notions. It is an acceptance.

**Samadhi** – The absolute: the inner freedom. This is the complete feeling of being at one with the world, knowledge of the true self. Ultimate enlightenment! Inner Happiness!

So now that we have established what yoga is and what it is trying to achieve. How does sport and exercise psychology fit in to the equation. Psychology is the science of behavior. As sport and exercise psychologists we are interested in examining, researching and providing theory and evidence based interventions and solutions to cognitive and behavioral difficulties experienced by athletes that impinge their ability to perform to their highest potential. Afflictions of the mind such as experiencing competitive anxiety, dealing and coping with stress, handling pressure and nerves, staying in the present, remaining focused, coping with negative thoughts, the inner critic, low confidence, self-esteem and belief systems are all common issues experienced by athletes regardless of the sporting discipline. Some psychological interventions recommended that are evidence-based to deal with some of these common issues are developing pre performance routines, introducing positive self-talk, the use of mental imagery, goal-setting, concentration skills and deep breathing and relaxation exercises.

Athletes can learn and develop a lot of these psychological skills through the practice of yoga and it is always worth acknowledging the value it can add to any psychological intervention. There are many research studies that show that yoga has the potential to reduce stress, anxiety, depression, and PTSD. Previous studies carried out on the influence of yoga on anxiety suggest that yogic relaxation can counter balance sympathetic over-activity and increases in parasympathetic activity.

All the somatic manifestations of anxiety such as the racing heart, palpitations, tremors, sweating, increased blood pressure, dry mouth, avoidance behaviour, restlessness and heightened responsiveness seem to decrease and slowly disappear after a yoga intervention. Recent studies also show an association between yoga and decreased serum cortisol (stress hormone) levels, as well as enhanced immune function, in healthy individuals. Apart from reducing stress, yoga practice promotes feelings of relaxation and enhances subjective well-being. Yoga's physical postures and breathing exercises improve muscle strength, flexibility, blood circulation and oxygen uptake which not only benefits general physical health but also mental health while also helping the practitioner become more resilient to stress.

Through the Eight-Limb Path in yoga an athlete is going to learn how to focus and concentrate the mind through the withdrawal of the senses and meditation. The breathing techniques are used as a way of centering the athlete to handle pressure and nerves, keeping the mind from wandering and staying in the present. Positive self-talk is encouraged through the yamas and niyamas which help increase confidence and self-esteem. Visualizations/mental imagery can be introduced during relaxation or 'shavasana' to develop performance outcomes. While 'sankalpas' or positive intentions are set during yoga nidra (yogic sleep) which can equate to goal-setting.

### **CONCLUSION**

You cannot overlook the physical and psychological benefits yoga can bring to any athlete. It is a holistic practice that encourages a body and mind connection through the breath. The skills learned on the yoga mat are skills for life and not just for sport. It is a grounding practice that infiltrates every part of your life with the ultimate goal to strip back all that is negative to help us achieve contentment and happiness. I truly believe that **'Better People Make Better Athletes'**

### **REFERENCES**

1. Bryant, Edwin (2009). *The Yoga Sutras of Patañjali: A New Edition, Translation, and Commentary*. New York, USA: North Point Press. ISBN 978-0-86547-736-0.
2. Crangle, Edward Fitzpatrick (1994), *The Origin and Development of Early Indian Contemplative Practices*, Otto Harrassowitz Verlag.
3. Dhillon, Dalbir Singh (1988). *Sikhism, Origin and Development*. Atlantic Publishers.
4. Michelis, Elizabeth (2004). *A History of Modern Yoga*. London: Continuum. ISBN 0-8264-8772-6.
5. Herman, Ellen. "Psychology as Politics: How Psychological Experts Transformed Public Life in the United States 1940–1970."

- 
- Doctoral dissertation accepted by Brandeis University, 1993.
6. Hock, Roger R. *Forty Studies That Changed Psychology: Explorations Into the History of Psychological Research*. Fourth edition. Upper Saddle River, NJ: Prentice Hall, 2002. ISBN 978-0-13-032263-0
  7. Kozulin, Alex. *Psychology in Utopia: Toward a Social History of Soviet Psychology*. Cambridge: MIT Press, 1984. ISBN 0-262-11087-3
  8. Morgan, Robert D., Tara L. Kuther, & Corey J. Habben. *Life After Graduate School in Psychology: Insider's Advice from New Psychologists*. New York: Psychology Press (Taylor & Francis Group), 2005. ISBN 1-84169-410-X
  9. Severin, Frank T. (ed.). *Humanistic Viewpoints in Psychology: A Book of Readings*. New York: McGraw Hill, 1965



## WHAT YOGA ASANS ARE SAFE DURING MENSTRUAL PERIODS?

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### ABSTRACT

Menstrual periods that come every month to a lady and only they know how they feel during this time. This feeling varies from person to person. Menstruation is the time when women feel different. Some women feel totally normal and fully energetic while others feel a lot of mood swing, a lot of pain, irritability etc. Yoga should be avoided or can be followed during menstrual periods is always a controversial issue. Some say that there is no side-effect of practicing yoga at this time and it should be continued while others say that it can be dangerous during the menstrual period and should be avoided. It is said there is no side-effect in practicing easy asanas of yoga which do not include a lot of body movements or inversions and they can be practiced avoiding other asanas. So, the upcoming article will give you the complete detail about whether it is safe to practice yoga during menstrual periods and if yes then which one is safe and which one is not..

**Keywords:** Menstrual periods asanas

### INTRODUCTION

#### YOGA POSES (ASANAS) THAT ARE SAFE DURING MENSTRUAL PERIODS

Although it is advisable to avoid asana during first two days of menstrual periods but if you are used to yoga then you can continue it as well. You can easily practice pranayama, yoga Nidra or meditation.

These yoga asanas are totally safe during menstrual periods. You can practice any of this asana that do not include must strain to the body but must remember that do not push your body to anything.

- To warm up you can practice some preparatory movements like 1 to 12, simple arm, legs and knee movements.
- You can also go for Surya Namaskar if you not facing heavy bleeding and cramps.
- Chandra namaskar can also be practised. Even it is said to be preferred as this time you get more calming and rejuvenating feeling.
- Easy and gentle bends like half forward bend, forward bend and light massage on pelvic region and abdominal helps you to have relief from cramping and heavy bleeding.
- The Vajrasan series is also very helpful for removing tension from your back and to remove pelvic congestion. That's why Vajrasan can be done at the time of menstrual periods but only at the low level. Do not bend much. Just do it lightly.

- Leg up taking the support of wall is helpful for removing stagnant blood from the legs without lifting your pelvic region. This asana is also helpful to open your pelvic region. Legs can be totally straight or at some comfortable distance. Do the way you are comfortable to do.
- You can get relief from back pain and pelvic tension by doing marjari asana and vyaghr asanas (Tiger Pose)

These both are very helpful but do it slowly.

#### SOME OF THE ASANAS THAT SHOULD BE PREFERRED DURING MENSTRUAL PERIODS

##### 1. COBBLER'S POSE – BADDHA KONASANA

This pose is also known as butterfly pose and it is basically taught to them who are the beginners of yoga but this is very safe during menstrual periods as during menstruation you feel lower portion to be heavy and you want to give rest to your lower body and this yoga asana includes the sitting posture and sitting posture is the most comfortable one during menstrual periods.

This is helpful during periods as it opens up your pelvic region. You can sit in this posture for several minutes.



### **How to Do This Asana?**

- First of all, sit on a yoga mat.
- Bend your both knees and bring together the soles of your both feet.
- Let your knees fall on another side just like a butterfly.
- Bring your feet closer to your body till you are comfortable.
- Sit up tall, your back must not be bent.
- You can tightly hold your joint soles and move them slowly.

### **2. HEAD TO KNEE POSE – JANU SIRASANA**

This also includes the sitting posture and it is also totally safe during the menstrual periods.

#### **How to Do This Asana?**

- Sit down on a mat.
- Straighten your one leg.
- Try to hold thumb of your straightened leg if you can or you can also hold anything where you can reach comfortably.
- Now breathe in extending your spine long and then leave breathe by deepening the forward bend.
- Repeat this for five breathes and now change the leg and repeat this again.

### **3. SEATED STRADDLE – UPAVISTHA KONASANA**

This asana is also a comfortable one during menstrual periods but do it slowly and only to the extent that is comfortable for you.

#### **How to Do This Asana?**

- Sit down on a yoga mat.
- Open your legs wide as much that is comfortable for you.
- Now bend forwards in between your legs and breathe in and out for about 4 to 5 times in bending mode.
- Then straighten yourself.
- Repeat till you are comfortable.

### **4. SEATED FORWARD BEND – PASCHIMOTTAN ASANA**

This is also a comfortable one during menstrual periods but does not apply much force. Do it lightly.

#### **How to Perform This Asana?**

- Sit down on a yoga mat.
- Straighten both of your legs.
- Now hold your both of the toes with hands and bend yourself forwards.

- Keep yourself in this position till you are comfortable.

### **5. PRANAYAMA**

Pranayama is very beneficial during menstrual periods as it is very helpful in keeping you calm and balancing your emotions which are needed at the time of periods. It also gives the power to face pain with calmness.

But take care that while doing this; do not put any strain on your breathing. And pranayama should not include bandhas and kumbakh as these can increase heat in your body. Deep breathing is very beneficial.

So, breathe deeply with calmness. Do whatever and at what extent your body is allowing you to do and what is making you feel better.

But, you should avoid right nostril breathing, bellow's breathing and front brain cleansing as these three increases the amount of heat which leads to increment in the bleeding and with this it also puts more pressure on the abdominal region.

#### **How to Use Pranayama?**

- You just need to sit down on a yoga mat.
- You just need to breathe in and breathe out calmly.

### **6. SUPPORTED BRIDGE POSE**

Supported bridge pose can also be done during menstrual periods. In this exercise, you need to elevate your hips using your shoulders as a bridge. But remember to avoid the abrupt movements, try to take slow and easy movements.

#### **How to Perform Supported Bridge Pose?**

- Lie down on a yoga mat.
- You need to lie down straight on your back.
- Keep your knees raised and hands should be completely straight towards your legs.
- Now using your hands, lift your hips forming a straight line between your shoulders and your hips.
- Keep yourself in this position until the time you can. Initially, time should be about 5 seconds.
- Now slowly return your buttocks towards the floor.

Note that you should avoid abrupt movements; you need to slowly move everything.

### **7. GODDESS POSE – SUPTABADDHA KONASANA**

Goddess pose is also very comfortable during menstrual periods but do this until the time you are comfortable in it.

### How to Perform Goddess Pose?

- Take a yoga mat.
- Lie down on the yoga mat on you back.
- Now open your hands at 90 degrees to your body.
- Now bend your knees to move your feet together forming a namaskar pose with legs.
- Yes, you need to meet the soles of your feet by bending the knees like you do namaskar by joining hands bending the hands.

### 8. VAJRASANA

Vajrasana can also be done at the time of menstrual periods but perform it lightly. You should not bend for much time.

### How to Perform Vajrasana?

- Sit on the yoga mat.
- Sit in the posture such that your butt touches your feet by folding your legs.
- Place your hands on your lap facing the sky.
- Remain in this position for the time you are comfortable.
- Bring yourself in the comfortable position and you can repeat it till you are comfortable to do it.

### 9. SURYA NAMASKAR

If you are not facing much bleeding or cramps then you can also go for namaskar Chandra namaskar.

### How to Perform Surya or Chandra Namaskar?

- Surya Namaskar includes 12 poses.
- First of all, stand in the erect position, keep your feet together and join your hands like in the prayer position.
- You need to bring this position with inhaling and exhaling.
- As you breathe in, lift both of your arms up and then join your hands in front of your chest by exhaling the air.
- The second one is raised Arms pose
- In this pose, breathe in and lift your arms up and little back by keeping your biceps close to your ears and then come in the comfortable position by exhaling.
- The third one is hand to foot pose.
- In this pose, you need to bend your body by touching your hands with your feet but keep your spine erect.
- The fourth one is the equestrian pose.

- In this, you need to do your right leg back as far as possible and keep your left leg till ankle at a right angle to the floor.
- Do your face towards the sky.
- The fifth one is stick pose
- This is the extended pose of the fourth pose in which you need to back your left leg as well by breathing in.
- The sixth one is salute with eight points.
- In this exhaling the air you need to touch your knees to the earth and try to do your hips back as much is comfortable.
- Next is cobra pose.
- Now you need to touch your legs with earth completely.
- Now raise your chest keeping your elbows bend.
- Next, you need to do a mountain pose.
- In this, you need to keep your chest downwards and hips upwards like a mountain.
- Next is again equestrian pose.
- In this, you need to repeat equestrian pose but with opposite legs.
- Now repeat again hand to foot pose.
- Then repeat raised arms to pose.
- Then stand straight vertical in relaxed position.

### 10. MEDITATION

Meditation is a really a good and calming practice especially at this time as at this time you need to control your emotions, yourself. Om chanting and Om meditation are really helpful at this time. Yoga Nidra is also very beneficial at the time of menstrual periods and that's why highly recommended.

### 11. CLEANSING PRACTICES

Some of the cleansing practices can also be done but many of these should also be avoided as well. Those which can be done are Jalneti and dandaneti but you should avoid vaman, lagooshankarprakashalan, kapalbharti, purmashankarprakashalan.

### CONCLUSION

Firstly, if you can avoid then avoid yoga asana for at least first two days of menstrual periods. But if you want to do then do according to the information provided. But one thing you should always remain in mind that do only for which your

body is comfortable. Do not push your body at all to do anything. Do, gentle and slow asana and do

only for small time till the time your body is allowing you to do.

### REFERENCES

1. Denise Lardner Carmody, John Carmody (1996), *Serene Compassion*. Oxford University Press US. p. 68.
2. Stuart Ray Sarbacker, *Samādhi: The Numinous and Cessative in Indo-Tibetan Yoga*. SUNY Press, 2005, pp. 1–2.
3. Tattvarthasutra [6.1], see Manu Doshi (2007) *Translation of Tattvarthasutra*, Ahmedabad: Shrut Ratnakar p. 102
4. Kimberly Lau (2000), *New Age Capitalism*, University of Pennsylvania Press, ISBN 978-0812217292, page 100
5. Karel Werner (1977), *Yoga and the Rig Veda: An Interpretation of the Keśin Hymn (RV 10, 136)*, *Religious Studies*, Vol. 13, No. 3, page 289–302
6. *Yoga isn't an all-Hindu tradition – it has Buddhist, even Sufi, influences*, Samuel 2008, p. 8.
7. Mark Singleton (2010), *Yoga Body: The Origins of Modern Posture Practice*, Oxford University Press, ISBN 978-0-19-539534-1, pages 25–34
8. Whicher, pp. 1–4, chronology on pp. 41–42
9. W. Y. Evans-Wentz (2000), *Tibetan Yoga and Secret Doctrines*, 3rd Edition, Oxford University Press, ISBN 978-0-19-513314-1



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## A STUDY OF BURNOUT OF MALE PHYSICAL EDUCATION TEACHERS IN RELATION TO THEIR AGE LEVELS

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### ABSTRACT

*The present study examined the relationships of age with burnout among male Physical Education teachers working in government senior secondary school of ten Districts of Himachal Pradesh except District Chamba and District Lahul-Spiti. The population in this study consists of 134 male Physical Education teachers from ten District of Himachal Pradesh. Maslach Burnout Inventory-Educators Survey (MBI-ES) by Christina Maslach and Susan E. Jackson (1986) was used for data collection, while one way Anova and t-test are used for statistical analysis. According to the results of the analysis, the burnout components-emotional exhaustion and personal accomplishment show no significant differences in male Physical Education teachers of different age groups i.e. up to 35 years, 36-45 years and 46 years and above. But in case of depersonalization, it shows significant difference in male physical Education teachers of different age groups i.e. 36-45 years and 46 years and above.*

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**Keywords:** Age, Male Physical education teachers, Maslach Burnout Inventory.

### INTRODUCTION

Teacher burnout can lead to students' negative reactions and attitudes toward the teacher in particular and the learning situation in general. Negative reactions are connected with reduced quality in teaching, less flexibility to accept various student needs, and 'poor teacher-student interactions' (Capel, 1991). Lack of interest in teaching, communicating, and conveying the lesson of the day might be warning symptoms of the burned out teachers. Low achievements of the students (Dworkin, 1985); high teacher absenteeism, mental health, deteriorating performance and early retirement (Leithwood, Menzies, Jantzi, & Leithwood, 1999); resentment, anger and helplessness (Blase, 1982), and the like are among the negative consequences of the chronically burned out teachers. The result would further lead to the deterioration in social and family relations (Cano-Garcia, Padilla-Munoz, & Carrasco-Ortiz, 2005). Burnout has been defined as a syndrome with three dimensions - emotional exhaustion (EE), depersonalization (DP), and reduced personal accomplishment (PA) - that usually occurs among those who work with people (Maslach, 1982). Emotional exhaustion, in the teaching profession, happens when the teacher has a feeling of tiredness and fatigue that develops when emotional energies are drained. As a result, the teachers find that they cannot give their best to students as they once could. Teachers experience depersonalization or cynicism when they do not

have positive feelings about their students. For example, they show cold, callous, negative, and indifferent attitudes toward them and sometimes resort to physically distancing themselves from the students. The reduced personal accomplishment or inefficacy occurs when teachers feel that they can no longer help the students to learn and grow. In other words, their feelings of competence and successful achievement in relation to the students decrease. Among the three dimensions, emotional exhaustion represents the basic experience of an individual stress (Maslach, Jackson, & Schwab, 1986). Different sources have been associated with the phenomenon of burnout. Background (e.g., educational level, type of school, etc.), individual attributes (e.g., age, gender, teaching experience, etc), and organizational factors (e.g., class size, work environment, workload, etc.) are involved in the burnout occurrence (Schwab & Iwanicki, 1982; and Koustelios, 2003). Teaching in Physical education is an exciting and challenging profession that combines classroom skills with emphasis on excellence in sports. The Physical Education teachers while playing a number of diverse as well as specialized roles as teachers, officials, organizers and administrators easily become prone to job stress. Excess of job stress create high level of burnout. If physical education teachers & coaches are not saved from undesirable effects of burnout, the quality of teaching & learning is bound to suffer to a great degree. Hence, there is a need to study burnout of Physical Education teachers. Therefore, the investigator has planned to

conduct the present study i.e. to examine burnout of male Physical Education teachers working in government senior secondary school of Himachal Pradesh.

### OBJECTIVE

To find out the significant difference in burnout of male Physical Education government senior secondary school teachers of different age groups i.e. up to 35 years, 36-45 years and 46 years and above.

### HYPOTHESIS

There would be no significant difference in burnout of male Physical education teachers of different age groups i.e. up to 35 years, 36-45 years and 46 years and above.

### METHODOLOGY

The present study was conducted as a survey among male Physical Education teachers serving in government senior secondary school of Himachal Pradesh.

#### Sample

The present investigation was conducted on 134 male Physical Education teachers from ten District of Himachal Pradesh were selected randomly.

#### Instrument

Maslach Burnout Inventory-Educators Survey (MBI-ES) by Christina Maslach and Susan E. Jackson (1986) was used for data collection.

#### Statistical analysis

The collected data were analyzed by one-way ANOVA and 't' test.

### RESULTS

The obtained summary of statistical results has been presented in the following tables:

**Table-1**  
**ANOVA of Three Components of Burnout Scores of Male Physical Education Teachers on the Basis of Age Levels**

Components of Burnout	Source of Variation	SS	df	MS	F	Sig.
Emotional Exhaustion	Between	22.168	2	11.08	0.29	NS
	Within	5089.571	131	38.85		
Depersonalization	Between	148.948	2	74.47	3.87	*
	Within	2519.985	131	19.24		
Personal Accomplishment	Between	106.658	2	53.33	1.47	NS
	Within	4744.096	131	36.21		

NS-NotSignificantat0.05and0.01Level. \*\*Significantat0.01Level. \* Significant at 0.05 Level

It is evident from table 1 that F-value in case of emotional exhaustion (F=0.29) and personal accomplishment (F=1.47) were found out which are not significant at 0.05 and 0.01 level of significance. It means teachers belonging to different age levels did not differ significantly with respect to emotional exhaustion and personal accomplishment. Hence, the research hypothesis of no significant difference in burnout emotional

exhaustion and personal accomplishment is *accepted*.

The F-value of depersonalization (F=3.87) was found out to be significant at 0.05 level. It means that significant difference exists on the depersonalization component of burnout. Hence, null hypothesis stand *rejected*.

For getting the clear idea of source of mean differences, post-hoc was done by 't' test. The obtained results have been presented in the table 2.

**Table-2**  
**Summary of 't' Statistic in Respect of Burnout (Depersonalization) of Male Physical Education Teachers of Different Age Levels**

Age Groups	N	M	SD	Comparison Groups	Df	't'	Sig.
Up to 35 years	32	5.06	3.77	1&2	105	0.9847	NS
36-45 years	75	4.23	4.12	1&3	57	1.5451	NS
46 years and above	27	6.96	5.63	2&3	100	2.6732	*
							**

NS-NotSignificantat0.05and0.01Level. \*\*Significantat0.01Level. \* Significant at 0.05 Level.

Table 2 shows that 't'-value (0.985) for first (up to 35 years) and second (36-45 years) age groups of male Physical Education teachers with respect to their mean scores on depersonalization is less than the given table value at 0.05 level of significance with df 105, which is not significant 0.05 level. It means that there exists no significant difference between the depersonalization of first and second age groups of male Physical Education teachers. Thus, the hypothesis of no significant difference in depersonalization component of burnout of male Physical Education teachers of different age groups i.e. up to 35 years and 36-45 years, is *retained*. Table 2 further reveals that t-value (1.545) for first (up to 35 years) and third (46 years and above) age groups of male Physical Education teachers with respect to their mean scores on depersonalization is less than the given table value at 0.05 level of significance with df 57, which is not significant at 0.05 level. It means that there exists no significant difference between the depersonalization of first and third age groups of male Physical Education teachers. Thus, the hypothesis of no significant difference in depersonalization component of burnout of male Physical Education teachers of different age groups i.e. up to 35 years and 46 years and above is *accepted*.

The last part of table 2 shows that t-value (2.673) for second (36-45 years) and third (46 years and above) age groups of male Physical Education teachers with respect to their mean scores on depersonalization is higher than the given table

value at 0.05 and 0.01 level of significance with df 100, which is significant at both the levels. It means that there exists significant difference between the depersonalization of second and third age groups of male Physical Education teachers. Thus earlier formed hypothesis i.e. there would be no significant difference in depersonalization component of burnout of male Physical Education teachers of different age groups i.e. 36-45 years and 46 years and above is partially *rejected* at both levels of significance i.e. 0.05 and 0.01. Showing the table, it is found out that the mean scores of depersonalization of male Physical Education teachers belonging to third age group 46 years and above (6.96) is higher than mean scores of depersonalization of male Physical Education teachers belonging to second age group 36-45 years (4.23). It may therefore be concluded that in case of depersonalization 46 years and above Physical Education teachers have more burnout as compare to 36-45 years Physical Education teachers.

### **CONCLUSION**

A lack of comprehensive study on Physical Education teachers' burnout provoked us to conduct the present study and determine the impact of age on the burnout of male Physical Education teachers, working in government senior secondary school of Himachal Pradesh. Results revealed that only depersonalization component of burn out shows significant difference between 2<sup>nd</sup> and 3<sup>rd</sup> age group male Physical Education teachers i.e. 36-45 years and 46 years and above

### **REFERENCES**

1. Blase, J. J. (1982). A social-psychological grounded theory of teacher stress and burnout. *Educational Administration Quarterly*, 18, 93-113.
2. Cano-Garcia, F.J., Padilla-Munoz, E.M., Carrasco-Ortiz, M. A. (2005). Personality and contextual variables in teacher burnout. *Personality and Individual Differences*, 38, 929-940.
3. Capel, S. A. (1991). A longitudinal study of burnout in teachers. *British Journal of Educational Psychology*, 61, 36-45.
4. Dworkin, A. G. (1985). When teachers give up: Teacher burnout, teacher turnover and their impact on children. ERIC Documentation Reproduction Service No. ED 273575.
5. koustelios, a. (2003). burnout among physical education teachers in greece. *international journal of physical education*, 40, 32-38.
6. Leithwood, K. A., Menzies, T., Jantzi, D. & Leithwood, J. (1999). Teacher burnout: A critical challenge for leaders of restructuring schools. In R. Vandenberghe, & A. M. Huberman (Eds.), *Understanding and preventing teacher burnout: A sourcebook of international research and practice* (pp. 1-13). New York, NY: Cambridge University Press.
7. Maslach, C., Jackson, S.E., & Schwab, R. (1986). *Maslach Burnout Inventory- Educators Survey (MBIES)*. Mountain View, CA: Consulting Psychologists Press.
8. Schwab, R. L. & Iwanicki, E. F. (1982). Who are our burned out teachers? *Educational Research Quarterly*, 7, 5-16

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## **PHYSICAL FITNESS FOR GIRLS**

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### **INTRODUCTION**

Physical activity is important for everybody, including all teenagers, but especially for girls who are generally less active than boys the same age. The American College of Sports Medicine and the U.S. Centers for Disease Control and Prevention recommend that a teenager spend at least 30 minutes doing some type of physical activity each day. Unfortunately, physical activity seems to diminish for many when they reach the teenage years.

Physical fitness is a measure of the body's ability to function efficiently and effectively in work and leisure activities, resist hypokinetic diseases (diseases from sedentary lifestyles), and to meet emergency situations.

Physical fitness comprises two related concepts: general fitness (a state of health and well-being), and specific fitness (a task-oriented definition based on the ability to perform specific aspects: sports or occupations). Physical fitness is generally achieved through correct nutrition, exercise hygiene and rest.

Physical fitness is defined as the state of general well-being, physically sound and healthy, along with mental stability. Physical fitness is important as it keeps our body free from illness. It enables the organs like heart, lungs and muscles to function efficiently. The five important components of physical fitness,

1. Cardiovascular Fitness - Cardiovascular fitness (also known as cardiorespiratory fitness) is the ability of the heart, lungs and vascular system to deliver oxygen-rich blood to working muscles during sustained physical activity
2. Muscular Strength - Muscular strength is the amount of force a muscle or muscle group can exert against a heavy resistance.
3. Muscular Endurance- Muscular endurance is the ability of a muscle or muscle group to repeat a movement many times or to hold a particular position for an extended period of time.
4. Flexibility - Flexibility is the degree to which an individual muscle will lengthen.

5. Body Composition - Body composition is the amount of fat in the body compared to the amount of lean mass (muscle, bones etc).

### **DISCUSSION**

#### **PHYSICAL EXERCISES FOR GIRLS**

##### **CARDIOVASCULAR EXERCISES**

Cardiovascular exercise is any type of exercise that increases the work of the heart and lungs. Typical forms of cardiovascular activities include walking, jogging, step aerobics, swimming, and biking. Cardio activity improves your heart/lung function and muscle mass; it's a lot about endurance and is often called cardiovascular endurance.

##### **RESISTANCE EXERCISES**

Resistance exercises cause your muscles to contract against an external resistance such as weights, rubber bands, your own body weight, bottles of water, or any other object that causes the muscles to contract. Resistance exercises focus on your muscles and may include weight lifting, certain yoga postures and floor exercises,

##### **FLEXIBILITY EXERCISES**

Flexibility is about your range of motion and is required in your daily activities such as walking, bending, lifting, driving, etc. Stretching and yoga help achieve greater flexibility; stretching also helps with good posture and can reduce the risk of injury.

##### **BALANCE EXERCISES**

Balance training focuses on the communication between your mind and your muscles that allows the body to remain stable; it's a lot about coordination. Balance helps prevent injuries, allows us to perform daily activities, and provides the foundation for cardio, resistance, and flexibility training. Balance should not be taken for granted. Balance training may include yoga, Tai Chi, outdoor biking and hiking, and specific exercises like standing on one foot

### **BENEFITS OF PHYSICAL FITNESS FOR GIRLS**

1. Increased Strength.Stamina and flexibility.
2. Helps maintain a healthy body weight.
3. Improves fitness and heart health.
4. Decreased incidence of stress and depression
5. Increased self esteem
6. Positive body Image
7. Mental and Emotional Development.
8. Physiological and Psychological development

### **COMMON BARRIERS**

1. Copying the behavior of their physically in active parents.
2. Lack of energy due to poor physical fitness.
3. Myth of girls cannot do exercise and play **sports.**

4. Peer Pressure
5. Lack of facilities and coaches for girls.
6. Fear of being teased.
7. Embarrassment to do physical exercises **on sports dress.**

### **TIPS FOR PARENTS**

- 1.ImportancPhysical Exercise
2. Be a Role Model.
3. Watch Women Sports, Have fun
4. Keep it simple
5. Build Exercise and discover the Interest among child to do physical Exercises.

### **CONCLUSIONS AND RECOMMENDATIONS**

Physical exercises are essential in promoting the stay fit and good health along with physical, mental, emotional and social development.

### **REFERENCES**

1. [www.better health Channel](http://www.better health Channel)
2. [www.Live strong.com](http://www.Live strong.com)





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## TECHNOLOGICAL SIGNIFICANCE IN PHYSICAL EDUCATION & SPORTS

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### ABSTRACT

*In many schools and colleges PE is still not seen as a priority area for use of ICT and allocation of resources and equipment is still only just being recognized and established with the rapid developments in technology however, ICT now has made a significant impact on a number of P'E departments and has the potential to enhance teaching learning administration and management in PE (Green 2002 Stratton & Finch 2001 Lochwood, 1997) It has been suggested that the pervasion of ICT in education is now impacting on PE as much as any other subject. These slow but positive signs of shifts in understanding and improved resourcing have almost certainly been influenced primarily by two sources. First is the ongoing general profile. Recognition training and resourcing which has been associated with all aspects of ICT in school and colleges over recent years some of which focuses on a mismatch between what student teachers learn about ICT and what they can use in schools (Cuckle&Clarke, 2002 simpson&payne 1999 Fischer, 1996) second is due to developments in technology particularly digital video, which can now be used by any teacher to dramatically enhance many of the activities within PE. Technical development in digital video and computer based PE sport resources and the availability of other equipment such as handheld waterproof devices and wireless technology are of particular relevance in PE the availability and ability, access and relative simplicity of use are contributing to these technologies now having more potential and impact on PE than on other subjects (tearle&katene, in press Stratton &finch, 2001*

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**Keywords:** PE, ICT

### INTRODUCTION

The use of ICT in physical education (PE) is currently far less developed and researched than ICT use in other subject areas. Research into ICT development and use during initial teacher training (ITT) follows this trend within these areas it has been suggested that student teachers working in more numeric subjects generally reported positive views and use of ICT where those in less numeric subjects were less positive (Cuckle&Clarke, 2000, 2003) PE has quite unequivocally demerits in terms of the nature of its teaching and learning, and for some time was the only National Curriculum subject where use of ICT was not a requirement. Curriculum 2000 changed this stating that.

### DIFFERENT MATERIAL USES IN SPORTS FOR INCREASING SKILLS

#### SPORT SPECIFIC

Tennis it is now standard at the major tennis tournaments for a line review system to be in place with players given power to review contentious line call it is powered by the Hawk-Eye ball tracking system. See more about Hawk Eye for tennis

Hawk eye is the name of a line calling system which traces a ball's trajectory and sends it to a virtual reality machine

Hawk Eye uses six or more computer linked television cameras situated around the court the computer reads in the video in real time and tracks the path of the tennis ball on each camera These six separate views are then combined together to produce an accurate 3D representation of the path of the ball.

Soccer/ Football soccer is looking at joining the 21st century, looking at various technology for the goal line to determine if the pass passes over the line or not see more about football soccer technology

Technology use in sports is increasing rapidly. The use of technology to determine if a ball has crossed the goal line is one way that it is being tested.

There is a need for goal line technology in soccer particularly as there are numerous examples where the TV replay has been able to show wrong decisions by the referee where a ball has or has not passed over the goal line and the goal was given or not given Technology in cricket tennis and American Football Basketball the NBA uses replay vision to review last touch decisions in the final two

minutes of games and also to determine whether players release the ball before the shot clock expires.

Computer in using ICT in teaching is a requirement for qualified teacher status according to the teacher training Agency (TTA 2002a who identify two specific standards relating to effective use of ICT in professional role they use ICT effectively, both to teaching (TTA 2002 P13) The drive to encourage teachers to use ICT support learning is reinforced by the TTA who state that teachers should be able to exploit the potential of ICT to raise further pupils standards of achievement (TTA, 1999a p.1)

Developing an ICT culture is an important part of the process of integrating ICT into a school's learning and teaching programs (Van Damme, 2001) Trainee teachers will be day players in developing this culture as their role may well be to provide vision to keep up with the rapidly developing technology (Stratton and Fich, 2001) Trainee teachers therefore need to understand what learning means and what learning means and what approaches are conducive to support and enhance learning in P/E using ICT (Eclbourn&Cale 2001) The TTA Newly Qualified teacher support and enhance learning in PE using survey (2002b) showed that trainees across all subjects rated the extent to which their training provided them with the knowledge, skills and understanding to use IT in their subject teaching was low (55%) However Cuckle and Calrke (2003) identified and identified and increase in the level of interest and competence in ICT amongst both trainee teachers and subject mentors in school potentially attributable to more effective education in ICT. The rapid development of technology and probable contribution of ICT to the learning process in PE makes it imperative to ensure that newly qualified teachers are adequately prepared to exploit the potential. Both ITTE providers and schools need to be able to overcome barriers and promote the development of necessary competences and confidence to make the technology accessible teachers.

The world of sport is continually changing over the years. And the use of technology is just one of those areas that have made an impact on many sports the use of technology in aussie rules is increasing and has the potential to have a great impact on the sport

The other popular football code soccer has been toying with the concept of goal line technology for quite a while but has been slow to implement it at

the elite level whether a ball has crossed over a goal line in both codes can have a great impact on the result of a game, and spectators expect that the right decisions are being made. With so many cameras following the ball in AFL games, when a goal umpire makes a mistake it is usually clear for all to see

Rugby League the NRL was an early implementer of using the video referee to help adjudicate questionable tries.

### **COMPUTER SOFTWARE**

There are numerous software packages that are designed for fitness and nutrition professionals to organize data and produce reports, ideal for visitors to this site Here are a couple of packages that come recommended by Top end Sports

Team Beep Test the most versatile and useful software for conducting and recording results of the beel[ beet test with results recorded directly onto your computer

Body Byte a universal standalone computer software program specially developed to comprehensively organize and manage all the information associated with nutrition, training and fitness

Science Fitness&Nutrition Software Fat calculator a universal standalone computer software program specially developed to comprehensively researchers and students for easy estimation of body fat percent.

Body Tracker Quickly and easily calculate and tracker your body fat percentage

Fitness Age A review of the online fitness assessment tool which uses the results of a series of physical tests to calculate the fitness age of a person.

Energy Test a review of an online tool to determine the client's Energy Index a factor of a person's healthiness, the body's physical performance and total energy level

Biomechanics & Physics of Sport

Biomechanics is the sport science field that applies the laws of mechanics and physics to human performance in order to gain a greater understanding of performance in athletic events through modeling, simulation and measurement.

Physics of juggling, it is also necessary to have a good understanding of the application of physics to sport as physical principles such as motion, resistance momentum and friction play a part in most sporting events Biomechanics is a diverse interdisciplinary field, with branches in Zoology, Botany, physical anthropology orthopedics

Bioengineering and Human performance The general role of biomechanics is to understand the mechanical cause effect relationship that determine the motions of living organisms in relation to sport biomechanics contributes to the description explanation and prediction of mechanical aspects of human exercise sport and play.

### **DISCUSSION**

Using live delay programs provides immediate feedback to individuals and groups enabling them to identify areas for developments and acquire and develop skill using analysis packages to compare pupil performance with the model performance enables pupils to evaluate and improve performance using producer packages to develop teaching cards and reciprocal coaching cards allows pupils to take on different responsibilities in class, develop skills and select appropriate skills to suit the situations. Pupils can also capture images of performance to use as display material that reinforce learning and celebrate success

PowerPoint's for presentation and demonstration of pupil's ability to select and synthesize information to meet their needs and develop an ability to question its accuracy bias and plausibility and to exchange and share information. For example, challenges can be set on a power point present from which pupils select an appropriate one for their ability/needs; diverse information can be provided from which pupils must select an appropriate solution to a problem set PowerPoint can be used to conduct plenary sessions and also used a tool appropriate solution to a problem set power point can be used to conduct plenary sessions and also used a tool for assessing learning

a) Using the internet to find resources to support teaching, Use of websites can extend pupil learning and help with the setting of enrichment activities; pupils can use websites to find things out develop ideas, exchange and share information, whilst reviewing modifying and evaluating work as it progresses.

b) Heart rate monitors and other health related exercise equipment to develop pupils knowledge and understanding of what happens to their body during exercise improve their ability to estimate the effect of exercise on their body and to develop appropriate training methods for different activities.

Use of interactive CD ROMS and DVD that enable pupils to learn new skills or develop existing skills through visual and auditory demonstrations, use of these media enable video audio demonstrations of skills played in full or broken down into components; or they can provide interactive peer evaluation sheets which can be used on interactive white board to focus pupil attention on improving and evaluating their and others work some cd roms provide game plans which help pupils select and apply skills and tactical ideas using animated drill or game play plans; fitness and health CD ROMs that enable pupils to develop their knowledge and understanding of fitness and health by selecting generic or sport specific warm ups, understanding components of fitness and developing skills.

### **CONCLUSION**

Physical education essentially requires the performing physical activity, This is associated with the development of motor skill. Physical education within the school system requires time, facility space and interactive lesson plans Technology provides access to information, compresses information, motivate learners, and connect learners to teachers and teachers to the colleagues. There are nowadays many available technological innovations that could be inserted into the physical education lesson. The visual physical education lesson is essentially based on the connected learning environment which uses technology that are networked in structure physical education should all themselves of these technology opportunities to make their lesson more real and dynamic. Technology can be used as an advocacy tool. As the push to decrease or completely eliminate physical education programs gains more momentum, necessary to show its worth in the overall education process. Technology gives you the tools to help accomplish this task. It allows you to collect and store data and provide tangible evidence that what physical education provides to students is worth the investment in time and money. Technology is valuable asset to any physical education program. It is a powerful instructional tool an assessment tool, and an advocacy tool . It engages students making the learning fun and meaningful. A combination of these characteristics enhances student learning

## **RREFERENCES**

1. [www.google.co.in](http://www.google.co.in)
2. [www.topendsports.com](http://www.topendsports.com)
3. Sport Science and Sports Apps
4. Cuckle, P and Clake, S (2003) Secondary school teacher mentors' and student teachers' views on the value of information and communication technology in teaching technology, pedagogy and Education 12(3),pp-377,391
5. Cuckle, P and Clake, S. and Jenkins ,1 (2000) student teachers' information and communication technology skills and their use during teacher training Journal of information technology Education 9(1),pp-9-22



## COMPARATIVE STUDY OF ANXIETY AND AGGRESSION LEVEL BETWEEN THE LAWN-TENNIS AND BADMINTON PLAYERS

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### ABSTRACT

*In the present study, an attempt has been made to compare the anxiety and aggression level between lawn-tennis and badminton players at university level. The study was carried out on 30 male players (15 each). The data was collected by 6 different coaching camps. The age of the selected subjects ranged from 18 to 28 years. Only those players were selected who had attended the inter-college lawn-tennis and badminton tournament at Sant Gadge Baba Amravati university. Only anxiety (competitive) and aggression level were selected for the study. The data was collected through the SCAT (Sports competition anxiety test) questionnaire of Dr R. Martin to measure anxiety and Dr. Anand Kumar & Dr P.S Shukla (questionnaires) aggression test to measure aggression level. The data was analysed by t-test. The investigator observed that badminton male players having more aggression level than the lawn-tennis male players and anxiety level of lawn-tennis and badminton male players are not significantly different at university level*

**Keywords:** Physical fitness, anxiety, aggression, lawn-tennis, badminton.

### INTRODUCTION

Physical education is misunderstood to mean physical activity or merely drill. It is necessary to provide knowledge regarding true meaning and scope of physical education. Anxiety in sport is most common in competitive sports environment and could also be termed competitive stress. A lack of consensus makes it difficult to clearly define anxiety and stress in sport, but one definition, proposed by sport psychology consultant Dr. Grahan Johan in the book "Sports psychology: A Self-Help Guide" is that it's "the result of an interaction between the individual and the environment an emotional response to the demands placed upon the individual by the environment. The aggressive constructs are a complex one, that there are individual differences in the invade, potential to aggression and that the aggression can also be stimulated by specific situations. When aggressive energies are expressed within the rules of a sport and channelled into skill by a mature athlete, then one may witness a peaceful and inspiring performance. Aggression for aggression sake should not be sanctioned. It is self-defeating and debilitating to others. The outstanding athlete's entire competition with control and not with impose. The aggressive athlete will be more active, eager, strong, highly motivated and likely to seek to vanquish any

opponent.

### PURPOSE OF THE STUDY

- i) Main purpose of this study was to compare Aggression and Competitive Anxiety level between Lawn-Tennis and Badminton players.
- ii) Another purpose of this study was to know the Aggression and Competitive Anxiety level of Lawn-Tennis and Badminton players.

### METHODOLOGY

In this investigation sources of data, selection of subjects, sampling procedure, Selection of tools & criterion measures, administration of questionnaire and Collection of data have been described.

#### Source of Data

For the present study, male athletes of Sant Gadge Baba Amravati university, who had participated in the intercollegiate lawn-tennis and badminton tournament were the sources of data.

#### Selection of Subjects

For the purpose of this study the subjects were selected from the entire athletes who had associated with various events of S.G.B Amravati University Lawn-Tennis and Badminton Tournament. The age of the subjects was ranging from 18-28 years.

Events	No. of Athletes
Lawn-Tennis	15
Badminton	15
Total	30

### Sampling Technique

Purposive sampling technique were adopted to select the subjects for the present study.

### Selection of Test and Criterion Measures

To collect the data pertaining to the study aggression was assessed by using “Anand Kumar & P. S. Shukla” questionnaires and Competitive anxiety were assessed by administrating the SCAT (Sports competition anxiety test) questionnaire of R. Martin.

### ADMINISTRATION OF QUESTIONNAIRE

#### • Aggression Test

The aggression questionnaire prepared by Anand Kumar and P.S. Shukla. This inventory consisted to 25 items in which 13 items were keyed “Yes” and rest of 12 were “No”. The statement which was keyed “Yes” were 1, 4, 5, 6, 9, 12, 14, 16, 18, 21, 22, 24 and 25 and the statement which were keyed “No” were 2, 3, 7, 8, 10,11, 13, 15, 17, 19, 20 and 23.

#### • Sport Competition Anxiety Test (SCAT)

The sports Competition Anxiety Test is latest and most popular sport-specific anxiety test whose purpose is to assess individual differences in sports competitive trait anxiety or the tendency to pursue competition situations, as threatening, and /or to respond to these situations with elevated state anxiety.

Sports competition anxiety test questionnaire (SCAT) prepared by Rainer Martin (1986), was originally constructed for children (ages 10-15), its adult version was developed later on by suitably modifying the instructions and items. A reliability quotient of 0.85 had been reported for the adult version of SCAT.

### COLLECTION OF THE DATA

The data pertaining to this study will be collected on the selected subjects by administering the aforementioned questionnaire. The answer sheets of all the questionnaires will be given marks according to the developed Key and thus score will be recorded in a systematic way for further statistical treatment.

## RESULT AND DISCUSSION

### Statistical Treatment

The data pertaining to this study were obtained from responses given by the selected subjects in questionnaires were marked according to the key and then statistically analyzed by using mean, standard deviation (SD) and standard error (SE) i.e. ‘t’-test to find out the significant difference if any between the means of the two of selected groups of inter-collegiate level of participants.

### Findings

Findings pertaining to the statistical analysis have been illustrated in the following tables.

### Level of significant

To test the Null hypothesis level of significance was set at 0.05.

Table – 1

**Description of Means, Standard Deviations, and t-ratio for the Data on Sports Aggression of Lawn-Tennis and Badminton Players**

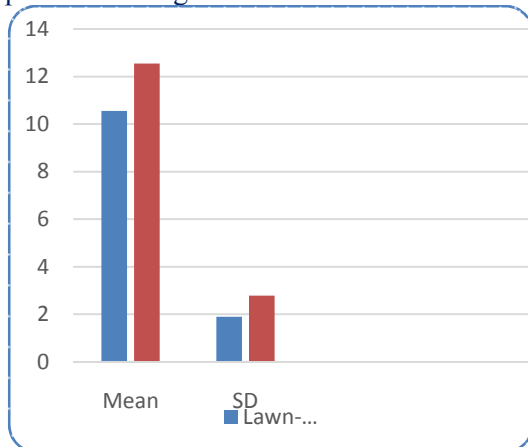
Group	No. of Subjects	Mean	Standard Deviation	Standard Error	t-ratio
Lawn-Tennis Players	15	10.55	1.90	0.75	2.66*
Badminton Players	15	12.55	2.78		

\* Significant at 0.05 level  
 Tabulated  $t_{0.05}(38) = 2.025$

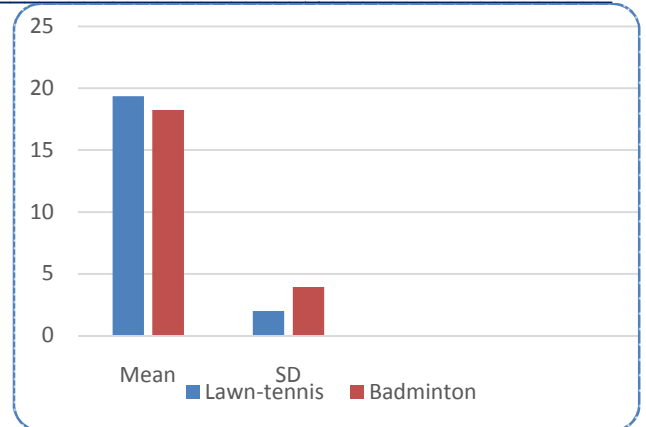
The findings of the table-1 revealed that the mean and standard deviation of aggression level of lawn-tennis players are 10.5 & 1.90 and the mean & standard deviation of badminton players 12.55 & 2.78 respectively. The mean difference is 2.00 and calculated t-ratio is 2.66, which is greater than the tabulated t-value of 2.025 at 0.05 level of confidence for 38 degrees of freedom.

Hence, it can be fairly concluded that the earlier stated null hypothesis is rejected means research hypothesis is accepted i.e.; significant mean difference exists in the variable of sports aggression in between lawn-tennis and badminton players. On the basis of mean value, it is also quite comprehensive that badminton players possess higher level of aggression compared to lawn-tennis players.

The difference of mean and SD graphically presented in fig.1



**Fig 1:** Graphical presentation of badminton and lawn tennis players on Aggression level at Inter Collegiate level



**Fig 2:** Graphical presentation of badminton and lawn tennis male players on anxiety level at inter collegiate level

Table – 2

**Description of Means, Standard Deviations, and t-ratio for the Data on Competitive Anxiety level of Lawn-Tennis and Badminton Players**

Group	Mean	Standard Deviation	Standard Error	t-ratio
Lawn-Tennis players	19.35	2.00	4.42	0.25 @
Badminton players	18.25	3.94		

@ Not Significant at 0.05 level  
 Tabulated  $t_{0.05}(38) = 2.025$

It is essential from the above findings that there is no significant mean difference between the lawn-tennis and badminton players in the variable of sports competitive anxiety because the calculated t-value of 0.25 is quite less than that of tabulated t-value of 2.025 at .05 level for the 38 degrees of freedom.

Hence, null hypothesis is accepted means there is no significant mean difference in competitive anxiety level between the lawn-tennis and badminton players.

Mean and SD difference has been shown in fig-2

### DISCUSSION OF FINDINGS

From the findings of table-1 it is clear that there was significant difference between the lawn-tennis and badminton players in the variable of aggression. Badminton players showed higher level of aggression as compared to lawn-tennis players, it may be attributed to the fact that Badminton is such a sport which needs a lot of aggressiveness to strokes with maximum power and maximum power can only be generated while a person becomes highly aggressive, hence such result occurs in this study

Findings of table-2 indicated that there was no significant difference between lawn-tennis and badminton players in the variables of competitive anxiety level. It may be due to improper training and coaching or psychological stress.

### CONCLUSION

Recognizing the limitations of the study and on the basis of the findings of this study the following conclusions are drawn: -

- i) There was significant difference between aggression level of the lawn-tennis and badminton players. Badminton players showed higher level of aggression as compared to lawn-tennis players.
- ii) There was no significant difference found between competitive anxiety of the lawn-tennis and badminton players in.

## REFERENCE

1. Abdul Rahaman, (sep.2012), "A Comparative Study of Sports Achievement Motivation of Male and Female Archers of Manipur" "International Journal of Physical Education, Health and Sports Sciences" Vol.01, No.1, p.35.
2. Ademba, Jane I. et.al, (2011), "Levels of Anxiety and Aggression among Orphans in Secondary Schools in Kenya", Educational Journal of Behavioural Science, Vol.02, No.1, pP.75-86.
3. Amardeep Singh, Sep (2014), "Locus of control and will to win Between Inter-College Basketball and Volleyball players" Research Journal of Physical Education Sciences Vol.2(9)13-16,
4. D. W. Rainey and H. Cunningham, (September 1988), "Comparative trait anxiety in male and female college athletes" Research Quarterly, 59 p. 244.
5. Ghosh, (sep.2012), "Sports Competition Anxiety Between State Level Chess and Cricket Players" International Journal of Physical Education, Health and Sports Sciences" Vol.01, No.1, p.63.
6. H. Shi, Z. J. Ma, H. Shi, (2008), "Research on Callisthenic Athletic' Anxiety and Its control in Gen eral Colleges and Universities Before the Competitions" Scholarly Journal, Journal of Xi and Institute of Physical Education, Vol.25, pp.124-126
7. J. Alder, C. Urech, N. Fink, J. Bitzer, I. Hoesli, (Jan 2011). "Response to Induced Relaxation during Pregnancy: Comparison of Women with High versus Low Levels of Anxiety" J. Clin Psychol Med Settings Vol.No.12,
8. K. J. Kim, J. W. Chung, S. Park, J. T. Shin, (July 2009), "Psycho physiological Stress Response During Competition Between Elite and Non-elite Korean Junior Golfers" International Journal Sports Medicine vol.30, 503-8.
9. Kanji, (DEC 27, 2008), "Autogenic training reduces anxiety after coronary angioplasty" A randomized clinical trial, Retrieved, from <http://www.eric.com.in>
10. N. Buchha Dr. A. N. Buchha, (August 2012), "Relationship Between will to win & sports competitive anxiety of Inter-University Cricket players" International/indexed & Referred Research Journal Vol.No.3
11. Owen Stephanie, Marc V. Jones & Steven R. Bray, (Jan.14,2009) "The influence competition location on athlete", Psychological States Journal of Sport Behaviour\_Vol.No.25, Retrieved
12. R. Kumar, (Dec 2011), "A study of will to win of Boxers with Reference to their level of Participation" South Asian Academic Research Journal Vol.1,
13. S. Gupta, (April 2013), "A critical Analysis of Mental Toughness and will to win Between Throwers and Jumpers" International Journal of Behavioural Social and Movement Sciences Vol.No.0
14. Z. Haider, (sep.2012), "Competition Anxiety Among Different Level of Volleyball Players" International Journal of Physical Education, Health and Sports Sciences, Vol.01, No.1, p.5



## RELATIONSHIP OF SOMATOTYPE TO HEART RATE

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### ABSTRACT

The purpose of the study was to find out the relationship between somatotype and Heart Rate of West Zone Inter University Kabaddi players. The sample consisted of 300 kabaddi players divided into three (100 Endomorphy, 100 Mesomorphy and 100 Ectomorphy). The somatotype was assessed using the Heath & Carter method and Heart Rate was assessed by manually with the help of index and middle fingers heart rate were taken in numbers of beat per minute. Statistical analysis was done by computing product moment correlation and analysis of variance (ANOVA) at 0.05 level of significance. The relationship of Heart rate with endomorph, mesomorph and ectomorph were found insignificant at 0.05 level with 298 degree of freedom as the obtained value ( $r = 0.174, 0.188 \& 0.268$ ) is much lesser than the tabulated value (0.113).. Comparison amongst all the three somatotyping variables with hemoglobin level shows significance difference as the calculated 'F' value is 8.198 is greater than the tabulated 'F' value 3.03. The sequence of performance in all three groups was (69.400) ectomorphy > (68.860) endomorphy > (67.640) mesomorphy.

**Keywords:** Heart Rate hemoglobin kabaddi players

### INTRODUCTION

The technique of somatotyping is used to appraise body shape and composition. The somatotype is defined as the quantification of the present shape and composition of the human body. It is expressed in a three-number rating representing endomorphy, mesomorphy and ectomorphy components respectively, always in the same order. Endomorphy is the relative fatness, mesomorphy is the relative musculo-skeletal robustness, and ectomorphy is the relative linearity or slenderness of a physique. For example, a 3-5-2 rating is recorded in this manner and is read as three, five, two. These numbers give the magnitude of each of the three components. Ratings on each component of  $\frac{1}{2}$  to  $2\frac{1}{2}$  are considered low, 3 to 5 are moderate,  $5\frac{1}{2}$  to 7 are high, and  $7\frac{1}{2}$  and above are very high (Carter & Heath, 1990).

Somatotype can reveal a lot about the capacity to succeed in athletic competition. Body type is at the very center of evaluating athlete capability. Athletics involves the performance of the body. A somatotype is important because it is like a blueprint. It is impossible to have realistic goals for our body if our analysis isn't based on reality. The only way to know that reality is to determine our somatotype. If we are a professional trainer we owe it to our clients to identify their somatotypes so that they don't push themselves beyond their

safe limits. One reason coaches and trainers ignore somatotype is because it may discourage some from spending money that will never bring them to their idealized goal. The arbitrary goal of getting "big" can be just as seductive as anorexia.

Heart rate is the number of heart beats per unit of time, typically expressed as beats per minute (bpm). Heart rate can vary as the body's need to absorb oxygen and excrete carbon dioxide changes, such as during physical exercise or sleep. Resting heart rate is the number of times your heart beats per minute at rest. Rest does not mean, when you are not exercising, but is your heart rate just as you wake up from a good night's sleep. Often people will use meditation or centered breathing techniques to help bring their heart rate back down to resting levels. Resting heart rate declines as a result of training. It is not uncommon for elite athletes to have resting heart rates as low as 30-40bpm. This physiological adaptation happens because a number of other adaptations allow it to.

One of these is an increase in stroke volume. An increase in the amount of blood pumped out with each contraction means the heart can have a lower rate of contraction while still transporting the same volume of blood. A decreased resting heart rate means an athlete has more room to increase their heart rate to its maximum and, therefore can perform set workloads with a lower heart rate,

perform at higher intensities than an untrained athlete, and maintain these intensities for longer.

## MATERIALS AND METHODS SUBJECT

For the present study researcher had collected data on Kabaddi players participated in the West Zone Inter University Kabaddi (Men) Tournament 2011 out of 576 players exact 443 players were tested and out of them 100 Endomorphy, 100 Mesomorphy and 100 Ectomorphy subjects were taken.

## ADMINISTRATION OF THE TEST

### Anthropometric:

Ten anthropometric dimensions are needed to calculate the anthropometric somatotype: height, weight, four skinfolds (triceps, sub scapular, supra Iliac and calf), two bone breadths (bicondylar humerus and femur), and two limb girths (upper arm and calf). Somatotype components (endomorph, mesomorph and ectomorph) of the subjects were calculated according to Carter and Heath Equation method.

### Endomorphy:

Endomorphy =  $- 0.7182 + 0.1451 (X) - 0.00068 (X^2) + 0.0000014 (X^3)$   
 where X = (sum of triceps, subscapular and suprascapular skinfolds) multiplied by (170.18/height in cm).

### Mesomorphy:

mesomorphy =  $0.858 \times \text{humerus breadth} + 0.601 \times \text{femur breadth} + 0.188 \times \text{corrected arm girth} + 0.161 \times \text{corrected calf girth} - \text{height} \times 0.131 + 4.5$ .

### Ectomorphy:

Three different equations will be used to calculate ectomorphy according to the height-weight ratio:

If HWR is greater than or equal to 40.75 then  
 ectomorphy =  $0.732 \text{ HWR} - 28.58$

If HWR is less than 40.75 but greater than 38.25 then

ectomorphy =  $0.463 \text{ HWR} - 17.63$

If HWR is equal to or less than 38.25 then  
 ectomorphy = 0.1

**Heart Rate:** Manually with the help of index and middle fingers heart rate were taken in numbers of beat per minute.

## STATISTICAL ANALYSIS

The relationship of each somatotypes components, Viz. Endomorphy, Mesomorphy and Ectomorphy to Heart rate established by computing product moment correlation. In order to find out the significant difference between three different

somatotypes components the analysis of variance (ANOVA) was applied at 0.05 level of significance.

## Relationship of Hemoglobin Level to Somatotype

**Table- 1**

Parameters	Somatotypes	Correlation Coefficient
Heart Rate	Endomorphy	0.174*
	Mesomorphy	0.188*
	Ectomorphy	0.268*

N=300 \*Significant at .05 level.  $r_{0.05}(298) = .113$

An analysis as shown in the above table indicated that the relationship of Heart rate with endomorph, mesomorph and ectomorph were found insignificant at 0.05 level with 298 degree of freedom as the obtained value ( $r = 0.174, 0.188$  &  $0.268$ ) is much lesser than the tabulated value (0.113).

## Comparison of Heart Rate to Somatotype

**Table- 2**

Source of Variation	d f	Sum of Square	Mean Sum of Square	F-Ratio
Between Groups	2	162.587	81.293	8.198*
Within Groups	27	2945.080	9.916	
	29			

N=300 \*Significant at .05 level.  $F_{0.05}(2, 297) = 3.03$

Above table revealed that there was significant difference in different somatotype components as obtained F-ratio was 8.198 which was higher than that of required tabulated 'F' value of 3.03 at .05 level of significance with (2, 297) degree of freedom.

Since the one-way analysis of variance was found to be significant in related to Hemoglobin, the least significant difference (L.S.D.) was applied to assess the paired means difference among the different somatotype components.

## Post-Hoc Test

**Table-3**

Endomorphy	Mesomorphy	Ectomorphy	M.D.	C.D
68.860	67.640		1.220*	0.877
68.860		69.400	0.540	0.877
	67.640	69.400	1.760*	0.877

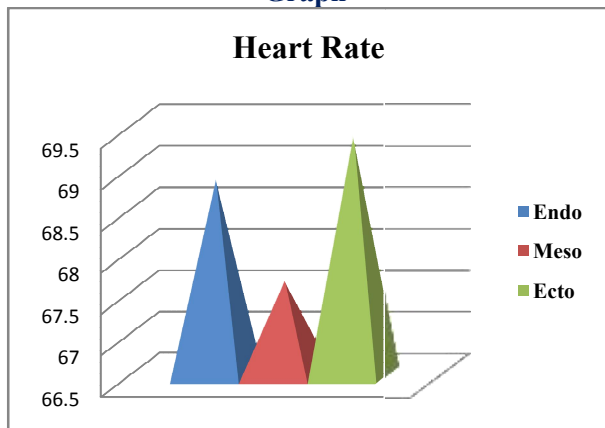
\*Significant at .05 levels.

Table-3 clearly revealed that significant difference was found between the means of endomorphy and mesomorphy, mesomorphy and ectomorphy as the mean difference of above two was greater than the critical differences.

Insignificant difference was found between the means of endomorphy and ectomorphy, as the mean difference was less than the critical difference.

The sequence of performance in all three groups was (69.400) ectomorphy > (68.860) endomorphy > (67.640) mesomorphy.

**Graph**



## DISCUSSIONS OF FINDINGS

Comparison amongst all the three somatotyping variables with heart rate shows significant difference as the calculated 'F' ratio is 8.198 which were greater than the tabulated 'F' value. While seeing the mean we can say that the mean heart rate of mesomorph kabaddi players (67.640) was much better than endomorph kabaddi players (68.860) and ectomorph kabaddi players (69.400). It may be said that heart rate is mainly depends upon the requirement of the oxygen by the body tissue. As the mesomorphic body type consist an athletic heart in general we can say that stronger heart, the more blood it can pump during each contraction, and the less frequently it needs to beat to get adequate blood flow (circulation) and oxygen to the body tissues. A well trained athlete can have a very low heart rate. Mesomorph body types consists a strong heart as compared to endomorph and ectomorph body type.

## REFERENCE

1. Sheldon, W. H. et.al., The Varieties of Human Physique (New York: Harper Press, 1940)
2. Thomas K. Cureton, Physical Fitness of Champion Athletes, (Urbana: The University of Illinois Press, 1951)
3. Berger, R. A. Applied Exercise Physiology, (Philadelphia: Lea and Febiger, 1982).
4. Bolonchuk, W. W. et.al., "Association Of Dominant Somatotype Of Men With Body Structure, Function During Exercise, And Nutritional Assessment", Journal of Human Biology, Vol.12, No.2, 2000.
5. Duncan, M. J. et.al., "Anthropometric And Physiological Characteristics Of Junior Elite Volleyball Players", British Journal of Sports Medicine, Vol.40, No. 7, 2006

## STUDY OF SPORTSMAN'S SPIRIT OF KABADDI PLAYERS AT DIFFERENT PLAYING POSITION

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### ABSTRACT

The purpose of the study was to know Sportsman's Spirit level of Kabaddi Players at Different Playing Position. Fifty (50) male Inter Collegiate Players were selected from Sant Gadge Baba Amravati University, Amravati Inter Collegiate Kabaddi (Men) Tournaments 2017-2018 held at Shri Pundlik Maharaj Mahavidyalaya, Nandura (Rly), Buldhana for the purpose of the study. Subjects were selected with purposive sampling methods 10 each from different playing position i.e. 10 Raider, 10 Corner, 10 Third, 10 Helper and 10 Center. The age of the subjects were ranged between 18 to 25 years. To measure the sportsmen's spirit level researcher has selected 'Sportsman-Spirit Test' which was constructed by L. N. Dubey. Statistical analysis was done by computing one-way analysis of variance (ANOVA) at 0.05 level of significant. Result shows that there is significant difference in sportsman spirit level between different playing positions of kabaddi players because calculated value  $F$  is 190.27 which is much greater than tab  $F_{0.05(2,57)} = 2.58$ . Since the  $F$  ratio is found to be highly significant, the Least Significant Difference (LSD) Post hoc test is applied to assess the paired mean difference and it was clearly revealed that all were found to be highly significant at 0.05 level of confidence.

**Keywords:** Sportsman-Spirit Least Significant Difference kabaddi players

### INTRODUCTION

Sports and physical activity has been considered an integral part of human life since its inception. It is universally accepted that sports and games fulfill the requirements of human activities. Revolutionary achievements of electronic media have made it all the more important not only in the lives of participants but also among the millions of spectators, viewers and listeners. Sports are now popularly conceived as both socially and personally beneficial activity. Sportsmanship (or sometimes sportspersonship) is an aspiration or ethos that a sport or activity will be enjoyed for its own sake, with proper consideration for fairness, ethics, respect, and a sense of fellowship with one's competitors. A sore loser refers to one who does not take defeat well, whereas a good sport means being a "good winner" as well as being a "good loser". Sportsmanship can be conceptualized as an enduring and relatively stable characteristic or disposition such that individuals differ in the way they are generally expected to behave in sport situations. In general, sportsmanship refers to virtues such as fairness, self-control, courage, and persistence, and has been associated with

interpersonal concepts of treating others and being treated fairly, maintaining self-control if dealing with others, and respect for both authority and opponents. Sportsmanship is also looked at as being the way one reacts to a sport/game/player.

### THE SPIRIT OF FUN AND GOOD FELLOWSHIP

First of all, the men who play this great game have fun playing it. The desire to win is not permitted to assume a position of such vast importance in the minds of the players that fun is replaced by grimness, relaxation by tension, and cordial friendships by bitter enmities. The players on opposing teams fraternize both before and after their matches.

### THE SPIRIT OF MORAL CONDUCT

Take a look at all the big sports around the world and you can't hide from the fact that the true spirit and true essence of the sport has to take a back seat to a bit too much of professionalism and in some cases fickleness. The Pro Kabaddi League has managed to instill professionalism in the sport that was otherwise missing, but the true spirit and

the essence in which kabaddi would be played on the mud courts in villages can still be felt on the courts of this fashionable competition.

The level of honesty among the kabaddi players is amazing. Never will you see a kabaddi player denying a touch, or faking one in case of the raiders, barring certain cases of absolute confusion and uncertainty. It's great to be an umpire in Kabaddi as the players themselves are great regulators and make the life of an umpire so very easy.

For such an intense contact sport, rarely would you see a player losing cool in even the most critical of situations. So what makes these players overcome their egos and maintain such a high level of honesty in their behavior and the game?

Every individual posse's different sportsman spirit level, at different level i.e. international, national, varsity etc. likewise every individual may posse's different sportsman's spirit according to their different playing position's of a particular game. To see whether there is significant different or not the researcher has taken study as "Study of sportsman's spirit level of Kabaddi players at different playing position".

### METHODOLOGY SUBJECTS

Fifty (50) male Inter Collegiate Players were selected from Sant Gadge Baba Amravati University, Amravati Inter Collegiate Kabaddi (Men) Tournaments 2017-2018 held at Shri Pundlik Maharaj Mahavidyalaya, Nandura (Rly), Buldhana for the purpose of the study. Subjects were selected with purposive sampling methods 10 each from different playing position i.e. 10 Raider, 10 Corner, 10 Third, 10 Helper and 10 Center. The age of the subjects were ranged between 18 to 25 years.

### ADMINISTRATION OF TEST

#### Least Significant Difference (LSD) Post hoc test

Table - 2

Helper	Center	Raider	Corner	Third	MD	CD
47.1	42.9				4.2*	2.066
47.1		37.3			9.8*	2.066
47.1			32.7		14.4*	2.066
47.1				27.5	19.6*	2.066
	42.9	37.3			5.6*	2.066
	42.9		32.7		10.2*	2.066
	42.9			27.5	15.4*	2.066
		37.3	32.7		4.6*	2.066
		37.3		27.5	9.8*	2.066
			32.7	27.5	5.2*	2.066

To measure the sportsmen's spirit level researcher has selected 'Sportsman-Spirit Test' which was constructed by L. N. Dubey. There are 30 different situations in this test. Every situation has three alternative responses. The response indicates high sportsman-spirit should be awarded 2 marks, moderate 1 marks and the response indicating no sportsman's spirit should awarded 0 marks. The test was distributed to the players and the same were collected back after having filled by the players.

### ANALYSIS

Statistical analysis was done on the basis of ANOVA comparison of sportsman's spirit of volleyball players at different playing position. A one-way analysis of variance (ANOVA) was utilized in order to determine the difference if any, during the birth season. When the difference was found significance the LSD Post-hoc test was applied to assess the paired mean difference among the group

#### Comparison of Sportsman's Spirit level of Kabaddi Players at Different Playing Positions

Table - 1

Source	SS	df	MS	
Between-treatments	2444	4	611	$F = 190.27$
Within-treatments	144.5	45	3.2111	
Total	2588.5	49		

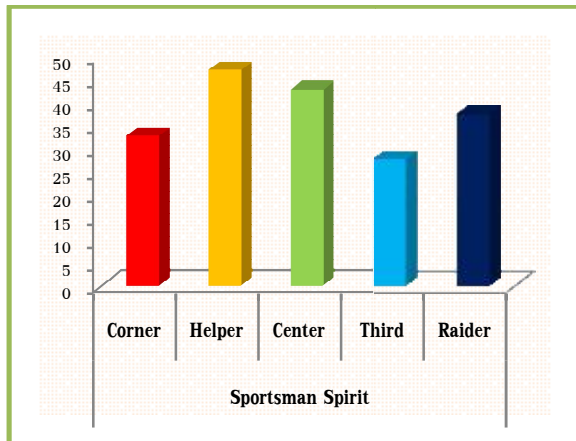
\*Significant at 0.05 level  $F_{0.05(4,45)} = 2.58$

Above table - 1 shows that there is significant difference in sportsman's spirit level between different playing positions of kabaddi players because calculated value F is 190.27 which is much greater than tab  $F_{0.05(4,45)} = 2.58$ . Since the F ratio is found to be highly significant, the Least Significant Difference (LSD) Post hoc test is applied to assess the paired mean difference among the group means which is shown on table no-2

\*Significant at 0.05 level

From the above table it was clearly revealed that all were found to be highly significant at 0.05 level of confidence.

### Graph



### **CONCLUSION**

It is concluded that the comparison of sportsman's spirit level of Kabaddi players at different playing positions was found to be significant. Players at 'third' position were found to have very low sportsman's spirit level, followed by 'corner', 'raider', 'center' and 'helper', which shows a high level of sportsman's spirit level.

### **REFERENCE**

1. Dube L. N., Manual for Sportsman-Spirit Test, Arohi Manovigyan Kendra, Jabalpur; 2010.
2. Abad, Diana (2010). "Sportsmanship". *Sport, Ethics and Philosophy*. 4 (1). doi :10.1080 /1751 1320903365227.
3. Clifford, Ken (2013). "Sport's also about sportsmanship". *Newcastle Herald*. 1 (33).
4. David Lacey, "It takes a bad loser to become a good winner." *The Guardian*, November 10, 2007.
5. Goldstein, Jay; Iso-Ahola, Seppo (2006). "Promoting Sportsmanship in Youth Sports". *Journal of Physical Education, Recreation & Dance*. 77 (7) 2006.
6. Joel Fish and Susan Magee, *101 Ways to Be a Terrific Sports Parent*, (Fireside, 2003) p. 168

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## **ESTIMATING MENTAL HEALTH STATUS AND SELF-CONFIDENCE BETWEEN VARIOUS CATEGORY OF OBESITY**

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### **ABSTRACT**

*Over the last decade children and adults, in the India, have been gaining more and more weight. Obesity is rapidly becoming an epidemic in our youngsters' lives. Whether it's all the fast food or lack of exercise, adults and especially children are heavier than ever. Main purpose of this study to compare the self-confidence and mental health between various types of obesity groups. For this study Forty (40) girls students 10 from each group of obesity were selected with the help of BMI (Weight in Kg/height in meter<sup>2</sup>) Underweight, Healthy weight, Overweight & Obese of Convent Schools Amravati City, Amravati. Subjects were selected with purposive sampling methods. To find out self-confidence and mental health of the subject researcher conducted self-confidence inventory, developed and standardized by M. Basavanna, Mental scale was developed by Dr. Jagadish, & Dr. A. K. Srivastava. Statistical analysis was done on the basis of ANOVA. If any difference was found significance, the LSD Post-hoc test was applied. Result shows that significant difference found in mental health and self-confidence between various types of obesity groups. Obese girls having less self-confidence and poor mental status. In this age group girls are more conscious about their feminine character. But due to obesity they may lose their self-confidence and ultimately it hamper their mental health. So it is need of the day, parents and society must think about the health of their wards and prefer active life style.*

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**Keywords:** *Mental health, self-confidence, Underweight, Healthy weight, Overweight and Obesed.*

### **INTRODUCTION**

Obesity is not a psychological disorder, but some researchers and clinicians argue that it should be considered a mental or behavioural issue. As it currently stands, obesity remains a medical condition, and, perhaps for this reason, research has focused neither on understanding the psychological impact of living with obesity nor the influence of mental health on the development of obesity.

Research usually examines each construct independently with little consideration for the relationship between excess weight and a broad range of psychosocial constructs concurrently. Research has not yet uncovered a clear model to elucidate these relationships. It is unclear to what extent psychosocial issues coexist in overweight/obese children or whether the strength or nature of the association changes with increasing weight. A recent review by Wardle and Cooke included 53 studies examining the relationship between obesity and psychosocial factors distinguishing clinical and community samples. Evidence for a causal or predictive relationship between obesity and mental health is inconclusive at best.

Today obesity is talked about as a major physical health problem. It can cause diabetes, high blood pressure, heart disease, immobilization, and many other problems. However many articles fail to mention what is one of the most important and most destructive problems. This is the effect of obesity on one's mental health and wellbeing. Being excessively overweight usually instils in its victims a sense of self worthlessness and gives them a very negative self-image.

Over the last decade children and adults, in the India, have been gaining more and more weight. Obesity is rapidly becoming an epidemic in our youngsters' lives. Whether it's all the fast food or lack of exercise, adults and especially children are heavier than ever. This increase in the national girth is giving way to such debilitating and chronic disease diabetes, joint and muscle ailments, and even heart disease. Besides that, there is a result from statistic says that disability due to obesity-related type 2 diabetes will increase particularly in industrializing countries, as insulin supply is usually insufficient in industrialized countries.

So, on the same way, the people who are obese do want to do something about their look and body shapes. There are questions to be asked, what do

they really think inside in mind? How do they feel when people talk about them? And what do they expect the way of people looking at them?

Sometime being fat is very unpredictable. Somehow the obese people cannot change the way they are, but inside themselves they always wanted to be skinnier and look better. They do not want people to look at them funny, or make stupid comment about them or their bodies. Being Obese does make them feel guilty and ashamed, they do want to do something to change the way they look. not only this, they also try to hide themselves from public, get a rid of people talking about them, and stay away to those skinny people.

## MATERIALS AND METHODS

### SUBJECTS

Main purpose of this study to compare the self-confidence and mental health between various types of obesity groups. For this study Forty (40) girls students 10 from each group of obesity were selected with the help of BMI (Weight in Kg/height in meter<sup>2</sup> ) Underweight, Healthy weight, Overweight & Obese of Convent Schools Amravati City, Amravati. Subjects were selected with purposive sampling methods. The age of the subjects were ranged between 12-13 years. To find out self-confidence and mental health of the subject researcher conducted self-confidence inventory, developed and standardized by M. Basavanna, Professor, Dept. of Psychology, S.V. University, Tirupati. The scale consists of 25 items in which 15 are positive and 10 are negative statements. Mental scale was developed by Dr. Jagadish, Dept. of Psychology R.B.S. College, Agra, & Dr. A. K. Srivastava Department of Psychology, Banaras Hindu University, Varanasi. The inventory consists of 56 statements.

### STATISTICAL ANALYSIS

Statistical analysis was done on the basis of ANOVA; A One-Way Analysis Of Variance was utilized in order to estimate self-confidence and mental health of various categories of obesity in girl students. If any difference was found significance, the LSD Post-hoc test was applied to assess the paired mean difference among the various categories of obesity.

**Table-1**  
**Comparison of mental health between various types of obesity groups**

Source of Variation	SS	df	MS	F	P-Value	F crit
Between Groups	2910.875	3	970.2917	<b>45.0658*</b>	0.000	2.866
Within Groups	775.1	36	21.5306			
Total	3685.975	39				

\*Significant at 0.05 level

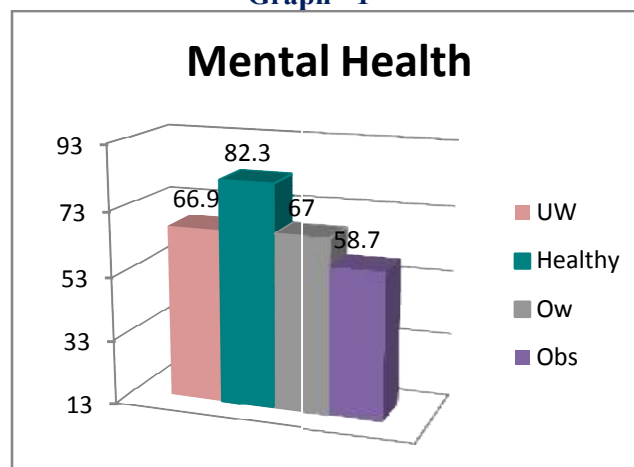
Above table shows that there is significant difference found in mental health between various types of obesity groups. Mental health shows significance difference because calculated 'F' value are 45.065 which is greater than tab  $F_{0.05(3,36)} = 2.866$ . Since the F ratio is found to be significant, the Least Significant Difference (LSD) Post hoc test is applied to assess the paired mean difference among the group means which is shown on table below.

**Table-2**

Post Hoc	UW	Healthy	OW
Healthy	15.4*		
OW	0.1	15.3*	
Obs	8.2*	23.6*	8.3*

\*Significant at 0.05 level CD - 4.208

**Graph - 1**





**Table-3**  
**Comparison of self-confidence between various types of obesity groups**

Source of Variation	SS	df	MS	F	P-Value	F crit
Between Groups	160.475	3	53.49167	12.6275	0.000	2.866266
Within Groups	152.5	36	4.236111			
Total	312.975	39				

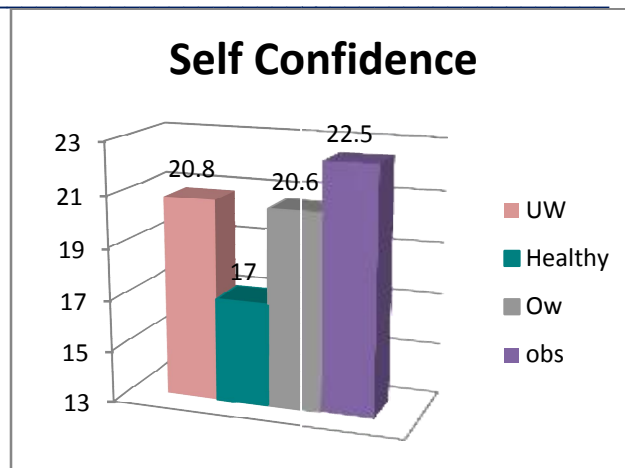
\*Significant at 0.05 level  
 Above table shows that there is significant difference found in self-confidence between various types of obesity groups. Self-confidence shows significance difference because calculated 'F' value are 12.627 which is greater than tab  $F_{0.05(3,36)} = 2.866$ . Since the F ratio is found to be significant, the Least Significant Difference (LSD) Post hoc test is applied to assess the paired mean difference among the group means which is shown on table below.

**Table-4**

Post Hoc	UW	Healthy	OW
Healthy	3.8*		
OW	0.2	3.6*	
Obs	1.7	5.5*	1.9*

\*Significant at 0.05 level CD - 1.86

**Graph - 2**



### CONCLUSION

Mental health of girls from healthy category mean is 82.3, mental health of underweight, over weight and obese categories mean are respectively 67,67, & 58.7 that means obese girls mental health status is poor than other category. Mean of Self-confidence of various categories of obesity shows, girls from healthy category mean is 17, mean of overweight and underweight are near about same that is 20.6 & 20.8 respectively mean self-confidence of obese category is 22.5. That means their self-confidence are lesser than other category (smaller the score more the self-confidence). Obese girls having less self-confidence and poor mental status. In this age group girls are more conscious about their feminine character. But due to obesity they may lose their self-confidence and ultimately it hamper their mental health. So it is need of the day, parents and society must think about the health of their wards and prefer active life style

### REFERENCES

- Rowland ML. Self-reported weight and height. *Am J Clin Nutr* 1990;52: 1125-33.
- Flood V, Webb K, Lazarus R, Pang G. Use of self-report to monitor overweight and obesity in populations: some issues for consideration. *Aust N Z J Public Health* 2000;24: 96-9.
- Erickson SJ, Robinson TN, Haydal FK, Killen JD. Are overweight children unhappy? *Arch Pediatr Adolesc Med* 2000;154(9):931-5.
- Israel AC, Ivanova M. Global and dimensional self-esteem in preadolescent and early adolescent children who are overweight: age and gender differences. *Int J Eating Disord* 2002;31(4):424-29. 24.
- Littlewood R. Commentary: globalization, culture, body image and eating disorders. *Cult Med Psychiatry* 2004;28(4):597-602.
- McCabe MP, Ricciardelli LA, Ridge D. "Who thinks I need a perfect body?" Perceptions and internal dialogue among adolescents about their bodies. *Sex Roles* 2006;55(5-6):409-19.
- Wardle J, Cooke L. The impact of obesity on psychological well-being. *Best Pract Res Clin Endocrinol Metab* 2005;19(3):421-40.

8. Gadalla TM. Association of obesity with mood and anxiety disorders in the adult general population. *Chronic Dis Can.* 2009;30(1):29–36.
9. Vanasse A, Demers M, Hemiari A, et al. Obesity in Canada: where and how many? *Int J Obes.* 2006;30:677–83.
10. Wilborn C, Beckham J, Campbell B, et al. Obesity: prevalence, theories, medical consequences, management, and research directions. *J Int Soc Sports Nutr.* 2005;2:4–31.



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## **COMPARATIVE STUDY OF REACTION TIME AND COORDINATION OF URBAN AND RURAL ARCHER'S**

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### **ABSTRACT**

*Today archery is a sport that can be participated in many ways; hunting, hobbies, and is even an Olympic event. Reaction time and Coordination play a key role in any athlete's performance. Sports require Reaction time and Coordination for every type of movement such as running, jumping, cutting, and shooting. The purpose of this study was to compare Reaction Time and Coordination of Urban and Rural Archer of Gadchiroli District, Maharashtra. For this study researcher selected 40 Archer's (20 Urban and 20 Rural) by using Simple Random Sampling Method. Variables were as follows: Reaction Time and Coordination. Reaction Time shows significant difference between Urban and Rural Archer's because the calculate 't' value 3.945 is greater than tabulated 't' value 2.021. Whereas Coordination show insignificant difference between Urban and Rural Archer's as the calculate 't' value 2.00 is lesser than tabulated 't' value 2.021. Concluding, we can say that Reaction Time and Coordination shows better in Rural Archer's as compared to Urban Archer's. The reason behind the significant may be attributed that Archer's belonging from rural area usually noticed that their lifestyle is more over based on hard physical works than that of urban people which makes the tribal's more hardy, speedy, agile, flexible and laborious and probably due to such reasons they assumed high functional ability in their daily life activities.*

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**Keywords:** : Reaction Time, Coordination, Archer's etc.

### **INTRODUCTION**

Archers have played a key part in warfare and hunting for thousands of years. It seems that archery was being developed in the early Mesolithic or late Paleolithic Age. Archery was especially well developed in some Islamic countries and in Asia, where Zen Buddhist monks used archery as an element of their meditation techniques. Archery has a colorful image. First used as a means of survival before history was ever recorded, and now it has changed to an ultra modern sport. The invention of the bow and arrow was made by prehistoric man. This was a great cultural advance because it raised man above the beasts. Today archery is a sport that can be participated in many ways; hunting, hobbies, and is even an Olympic event.

Reaction time is the time interval between the application of a stimulus and the appearance of appropriate voluntary response by a subject as rapidly as possible. Reaction time has been widely studied as its practical implications may be of great consequence, e.g., a slower than normal reaction time while driving can have grave results. Many factors such as physiological, psychological, pharmacological etc., have been shown to affect

reaction times. They are age, sex, gender, handedness, physical fitness, sleep, fatigue, distraction, alcohol, caffeine, diabetes, personality type and whether the stimulus is auditory or visual. Coordination play a key role in any athlete's performance. Sports require coordination for every type of movement such as running, jumping, cutting, and shooting. When a player lacks balance and coordination, they have a tendency to be very limited and this will eventually affect the way they perform in a practice or a game. This program focuses mainly on reinforcing movements and techniques that the player must do in order to exceed their limitations and get to the next level. The purpose of this study was to compare Reaction Time and Coordination of Urban and Rural Archer of Gadchiroli District, Maharashtra.

### **METHODOLOGY**

For this study researcher selected 40 Archer's (20 Urban and 20 Rural) who were at least participate in inter collegiate or state of Gadchiroli (MS) and were in regular practice at Mahatma Jyotiba Fhule Arts College ground by using Simple Random Sampling Method. The age of the students was

between 18-25 years. Variables were as follows:  
 Reaction Time and Coordination

### ADMINISTRATION OF THE TEST

#### REACTION TIME: REACTION TIME RULER TEST

The person to be tested stands or sits near the edge of a table, resting their elbow on the table so that their wrist extends over the side. The assessor holds the ruler vertically in the air between the subject's thumb and index finger, but not touching. Align the zero mark with the subject's fingers. The subject should indicate when they are ready. Without warning, release the ruler and let it drop - the subject must catch it as quickly as possible as soon as they see it fall. Record in meters the distance the ruler fell.

#### COORDINATION: ALTERNATE HAND WALL TOSS TEST

A mark is placed a certain distance from the wall (e.g. 2 meters, 3 feet). The person stands behind the line and facing the wall. The ball is thrown from one hand in an underarm action against the wall, and attempted to be caught with the opposite hand. The ball is then thrown back against the wall and caught with the initial hand. The test can continue for a nominated number of attempts or for a set time period (e.g. 30 seconds).

### STATISTICAL ANALYSIS

To compare the Reaction Time and Coordination of Urban And Rural Archer's 't' test was applied by the researcher for this study, level of significance was 0.05 at 38df. It is shown in following tables:

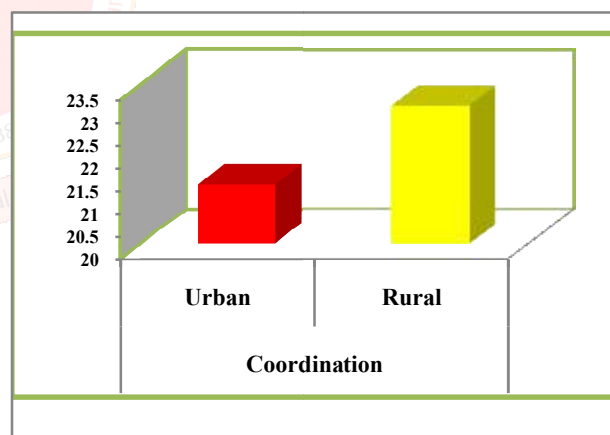
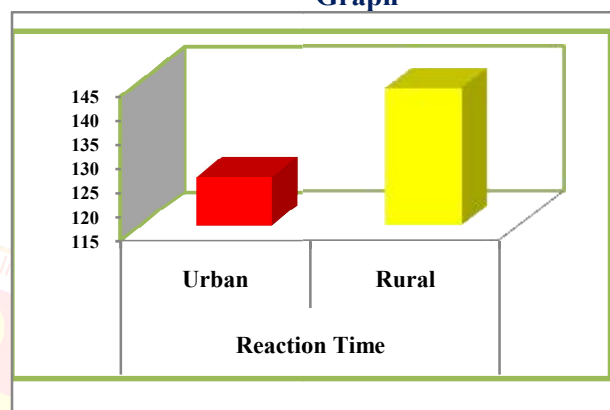
**TABLE**  
**Comparison of Urban and Rural Archer's**

Item		SUM	MEAN	S.D.	M.D.	S.E.	T-Test
Reaction Time	Urban Archer's	2505	125.25	13.42	18.25	4.625	3.945*
	Rural Archer's	2870	143.5	15.73			
Coordination	Urban Archer's	426	21.3	2.67	1.75	0.872	2.00
	Rural Archer's	461	23.05	2.83			

\*0.05 level of Significance (38df) tabulated 't' = 2.021

The above table shows that on the basis of mean difference there was much difference between the means of Reaction Time and Coordination. To see this differences is significant or not at 0.05 level of significance. Researcher further calculated 't' test & above table shows that only Reaction Time shows significant difference between Urban and Rural Archer's because the calculate 't' value 3.945 is greater than tabulated 't' value 2.021. Whereas Coordination show insignificant difference between Urban and Rural Archer's as the calculate 't' value 2.00 is lesser than tabulated 't' value 2.021.

#### Graph



### CONCLUSION

Concluding, we can say that Reaction Time and Coordination shows better in Rural Archer's as compared to Urban Archer's. The reason behind the significant may be attributed that Archer's belonging from rural area usually noticed that their lifestyle is more over based on hard physical works than that of urban people which makes the tribal's more hardy, speedy, agile, flexible and laborious and probably due to such reasons they assumed high functional ability in their daily life activities

### REFERENCE

1. Saha, G.C. & Haldar, S., "Comparison of Health Related Physical Fitness Variables And Psychomotor Ability between Rural and Urban School Going Children" *Journal of Exercise Science and Physiotherapy*, Vol. 8, No. 2: 105-108, 2012
2. Bucher C. A. And West D. A., *Foundation Of Physical Education And Sports*, (New York: Times Mirror Mosby College Publishing, 10<sup>th</sup> Edition, 1987)
3. <http://canarelli.org/ourpages/auto/2015/12/14/60545202/ARCHERY%20STUDY%20GUIDE.pdf>
4. <https://northjerseysportsperformance.com/product/balance-coordination/>
5. <http://www.topendsports.com/search.htm>



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## **EFFECT OF YOGA FOR THE PROMOTION OF MENTAL HEALTH AND WELL BEING FOR THE STUDENTS**

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### **ABSTRACT**

*Yoga provides training of mind and body to bring emotional balance. We argue that children and young people need such tools to listen inward to their bodies, feelings, and ideas. Yoga may assist them in developing in sound ways to strengthen themselves. Thus it helps in contributing social sectors in producing healthy citizens. First, we address how children and young people in today's world face numerous expectations and constant stimulations through the Internet and other media and communication technologies. One reason why children experience stress and mental health challenges is that globalization exposes the youth all over the world to various new demands, standards, and options. There is also an increased pressure to succeed in school, partly due to increased competition there but and partly due to a diverse range of options available for young people in contemporary times. Our argument also partially rests on the fact that modern society offers plenty of distractions and unwelcome attractions, especially linked to new media technologies. The dominant presence of multimedia devices and the time spent on them by children are clear indicators of the shift in lifestyles and priorities of our new generation. While these media technologies are valuable resources for children and young people for communication, learning, and entertainment, they also detract them from the desired goods and objectives. Yoga may help children and young people cope with stress and thus contribute positively to balance in life consequently well-being, and mental health can be achieved. Yoga improves children's physical and mental well-being. Similarly, yoga in schools helps students improve resilience, mood, and self-regulation skills pertaining to emotions and stress. Yoga is being used by a growing number of youth and adults as a means of improving overall health and fitness. There is also a progressive trend toward the use of yoga as a mind-body complementary and alternative medicine to improve specific physical and mental health conditions.*

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**Keywords:** : Yoga, Mental health, Social wellbeing.

### **INTRODUCTION**

Globalization exposes children and young people all over the world to various new standards and options. Now children not only have new resources in their lives, but are also expected to perform well. Different institutions in children and adolescents' lives, such as family, school, and the media, constantly provide stimulation as well as expectations. This exposure to new expectations and demands has the potential to create stress in young people's lives, especially related to evaluation of their performances.

Recent research shows that the most stressed-out generation is the current young adults. For example; the 2012 online survey "Stress in America" reported an average stress level of 5.4 out of 10 among 2,020 respondents in the US who were 18–33 years old. The researchers considered a stress level of three to six to be healthy. The survey has found that millennial (18–33 years of age) are more stressed than any other current

living generation. Respondents in the millennial generation were also less likely to give their healthcare an A grade. Almost half of them acknowledged not

It is common knowledge that stress can have serious health consequences. If unaddressed consistently, a high stress level could become a chronic condition, which could result in a range of health problems, including anxiety, insomnia, muscle pain, high blood pressure, and a weakened immune system. Research indicates that stress can even contribute to the development of major illnesses such as heart disease, depression, and obesity or exacerbate existing health issues (When such young adults are responsible for child care, they may tend to transmit their tensions to their children; thus, the situation becomes doubly alarming and worrisome for their families. Children learn to internalize the stresses. Their self-imposed expectations to meet the standards set by their caregivers, schools, and society may cause

them anxiety. Moreover, internalization of self-expectation may become non-malleable for young people.

We have observed that children are quite good at hiding their distress and emotional stress from their parents, since they do not want their parents to worry on their account. They desire to please their parents by their “appropriate” and “socially right” behaviors. Children dislike upsetting their parents and being the reason for adding to existing parental stress. According to a constructivist approach, children actively participate in their own development process. Moreover, children and young people interact with everyday life situations with world views that could be different from those of adults. In line with this theory, we believe that children function as an agency for their own well-being and have the evolving capacity to be partners of wellness with their families, friends, and society. However, children depend on the environment set by society to facilitate their potential for development.

yoga as a potential tool for the youth to deal with stress and to regulate themselves. Yoga provides training of mind and body to bring emotional balance. It is claimed that yoga leads to alignment and harmony. A recent thesis suggests that yoga is a tool to listen to your heart we argue that children and young people need such aid to listen inward, to their bodies, feelings, and ideas. Thus, yoga may contribute to healthy development and good mental health; health promotion for children needs to include improvement of their attention, self-esteem, empowerment, and self-regulation. We believe that children and adolescents need to develop based on their unique personalities, and to interpret and achieve the balance between their own strengths and societal expectations. Yoga may assist them in developing in sound ways, to strengthen themselves, and be contributing social beings.

### **CHILDREN, YOUNG PEOPLE, AND MENTAL HEALTH**

There are also examples of today’s youth who demonstrate more serious attitudes than those of earlier generations. For instance, in Norway, as in some European countries, youngsters use less drugs than did previous generations, perform better academically, and are more active participants in society and in elections. Moreover, youth behave more decently and less criminally, and are more hard-working in school. Children and young people also share more values with their

parents than did their pre-decessors, and while young people “hang out” online, many from the parent generation do the same. This similarity may be one of the reasons for the decrease in drug use and breaking of norms. However, this amicable behavior has its price; recent research also indicates that young people are more worried than their counterparts in the past (*op. cit.*). Furthermore, a greater number of youth are diagnosed with conditions such as attention deficit hyperactivity disorder (ADHD). Increased pressure is also exerted on them to succeed in school now than in previous times. Such increased emphasis on education and self-discipline can be challenging. Thus, there are more psychological problems among young people; many worry excessively, have sleep problems, and experience hopelessness and stress.

In fact, mental health problems are common among children and young people in the West, as well as in other parts of the world. The 2012 European Union (EU) Youth Report suggests that almost 10–20% of young people in Europe suffer from mental illnesses, while one out of five struggle with emotional or behavioral problems. Other sources confirm that while the majority of adolescents worldwide are healthy, 20% experience mental health issues). Similarly, a recent report estimates that 15–20% of Norwegian children aged 3–18 years have reduced functioning abilities due to mental problems such as anxiety, depression, and behavioral disorders. Generally, psychological challenges intensify around puberty; due to psychological and biological changes. When growing up, children face pressures from family, school, and other social contexts to perform satisfactorily and adjust to the rapidly changing pace of development in society.

The current scenario is challenging for both teachers and parents, as well as for children, to foster a positive mental health status. The transition from early childhood to youth and adulthood can be demanding in itself. In the midst of dealing with physical changes, children also have to develop their own identity, increase their autonomy from their parents, and handle changing peer relations. The pressure on young people also varies, encompassing academic, commercial/marketing, and relational issues, as well as succeeding in school, being popular, having a fit or slim body, wearing the right brands of clothes, and owning the latest technological gadgets, etc. This set of expectations creates stress,

which impacts children and young people's mental health and well-being, as well as hampers their school performance [see Ref.

Children also suffer from bullying (at school and cyber bullying), behavioral issues, problems with attention and self-regulation [such as ADHD and attention deficit disorder (ADD)], sleep disorders, obesity, computer dependency, drug abuse, and lack of school motivation, even leading to dropouts. Recent dropout rates in high schools are close to 30%, despite several years of political priority and designated measures in both the EU and the United States (US). Furthermore, schools are faced with the challenge that students (especially boys) are more attracted to the Internet, social media, and gaming than the school curriculum [cf. Ref.

### **CHILDREN AND YOUNG PEOPLE'S MEDIA USE AND HEALTH CHALLENGES**

Modern society also offers innumerable distractions and undesired attractions, especially linked to modern media and communication technologies, on which we have become dependent. The massive presence of media and the time spent on media technologies by children are clear indicators of the shift in lifestyles and priorities of our new generation<sup>2</sup>. In the US, children spend over seven and a half hours daily using media devices an alarmingly large average, yet rather matter of fact in 2013. Children worldwide are spending more and more time in front of television sets or computer screens and on cell phones, making media a central part of their lives. Young people today are expected to be and are often constantly online. Advertising, communications, as well as education present a brand new social networking image to make media accessible to children<sup>3</sup>.

Although media is a knowledge resource for children and adolescents' mental health, its intense use leads to questions concerning young people's capacity and interest to bring balance between physical and mental activities. A Kaiser Family Foundation study examined media use among very young children (0–6 years) and concluded that even these children spend as much time with electronic gadgets as they do playing outside. This study and many others draw links between media use and increase of health issues such as obesity and other physical and mental problems. Healthcare professionals use terms such as media addiction, identifying media as a factor of mental

illness, dependency, obsessive-compulsive behaviors, concentration problems, and other attention disorders. Besides these physical and mental risks, safety concerns are being raised in media-heavy communities; issues such as cyber bullying, young children being exposed to violence, and sexually explicit material, as well as extreme or inappropriate behaviors, are being highlighted. The world at large, including the deviances of society, is much closer and easily accessible with media tools and technologies.

We understand the media generation as the youth who live in a hypermedia environment. In many countries, including India, unequal access to media is an important concern, especially, since information and communication technologies (ICT) are regarded as major knowledge resources for the future. Children and young people's media use needs contextualization if this practice is to be understood properly [cf. Ref. First of all, children's everyday lives, which include their home situation, school, and leisure activities, provide a context. Cultures and norms are also contexts to consider when understanding the role of new media and ICT in children's lives. Media use is related to young people's social context, such as family, community, and friends or peer groups. The media landscape, including traditional media, is also the context for how new ICTs are appropriated. Children's use and reception will mediate the potential impact of media exposure. The consequences of media use can be extensive, and may affect how children spend their time, socialize, and even view the world. Thus, young people's media use can be a factor in how they experience themselves and their lives.

### **POTENTIAL BENEFITS OF PRACTICING YOGA FOR CHILDREN AND ADOLESCENTS**

"The beauty of yoga is that its benefits are available to students of every school-age group," according to Henningsen. She discusses how yoga can be a comprehensive approach to stress, something which is needed in the often tension-filled lives of children today [see also Ref. Yoga can help foster motivation, cultivate internal locus of control, improve sleep, and generally encourage healthy and balanced living. Yoga may also aid in shifting self-awareness inward to children's own cues and emotions, and thus, counteract negative social and cultural influences, including the current media pressure to be always online and available. As yoga often results in improved focus



and concentration, regular practice is frequently accompanied by better academic performance). Yoga has also been shown to help children with attention problems as well as to support executive function development. A number of studies have also suggested that yoga can assist children with special needs.

Yoga has been found to have physiological benefits for children through rehabilitation processes. Clinical studies also indicate that yoga improves academic performance and emotional balance [see Ref.]. The mental benefits of yoga relate to calming the heart rate, which signals the brain to activate the parasympathetic nervous system. Similarly, yoga can guide relaxation because it reduces sympathetic activity [e.g., see Ref.]. The sympathetic nervous system (fight or flight) is often engaged when children, similar to adults, are exposed to sensory overload. However, when the parasympathetic nervous system is activated, it increases our ability to focus and learn. Yoga is also said to reduce anxiety in young people as well as in seniors. Thus, yoga may assist healthy development and life-long learning.

### **CONCLUSION**

To conclude the part that yoga can be a valuable tool for children. We believe that the following

statement also applies for children and young people: “If you practice yoga every day with perseverance, you will be able to face the turmoil of life with steadiness and maturity.” The business enterprise has recognized the value of yoga globally. Across urban areas in recent times, yoga training centers, practice centers, private agencies, and individuals for both profit and non-profit sectors have opened studios and organized sessions in various forms and approaches. Many people pay fees to use these facilities and practice yoga. However, schools, pre-schools, and the public sector of education are not keeping up with the trend, notwithstanding their prime responsibility of developing the full potentials of children and young people.

Today’s children require a creative, interactive syllabus, and participatory method in the teaching–learning process. This approach is applicable for learning yoga too. Thus, if we can communicate with children and young people effectively, they can adopt yoga as a powerful tool for themselves to minimize stress, as well as develop resilience to deal with it. We believe in the need to focus on research to understand the ways children and young people can enjoy learning yoga, sustain it in practice, and use it

### **REFERENCES**

1. Sifferlin A. The most stressed-out generation? Young Adults (2013). Available from: <http://healthland.time.com/2013/02/07/the-most-stressed-out-generation-young-adults/>
2. American Psychological Association, Harris Interactive and Vanguard Communications. Stress in America: Missing the Health Care Connection (2013).
3. Langøien LJ. “Pay Attention – Listen to Your Heart!” Unfolding Practice, Change Realities and Awareness of the Embodied Self in Ashtanga Yoga [Ph.D. thesis]. Trondheim: Norwegian University of Science and Technology; (2013).
4. Hegna K, Ødegård G, Strandbu A. En ‘sykt seriøs’ ungdomsgenerasjon? Tidsskrift Norsk Psykologforen (2013) 50(4):374–7
5. World Health Organization. Adolescent Mental Health. Mapping Actions of Nongovernmental Organizations and Other International Development Organizations (2012).
6. Stortingsmelding 34. Folkehelsemeldingen. God Helse – Felles Ansvar (Popular Health Report. Good Health – A Common Responsibility). Oslo: Helse og Omsorgsdepartementet; (2013).
7. Hagen I, Wold T. Mediegenerasjonen. Barn og Unge i Det nye Medielandskapet (The Media Generation: Children and Young People in the New Media Landscape). Oslo: Samlaget; (2009).
8. Hagen I. The role of new media technologies and the internet in the promotion of mental health of children. Background Document for the Thematic Conference: Promoting of Mental Health and Well-Being of Children and Young People – Making it Happen. Stockholm: EU/Swedish National Institute of Public Health (2009). p.32–8

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## THE ROLE OF PERSONALITY IN SPORT AND PHYSICAL ACTIVITY

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### ABSTRACT

*Personality traits predict a number of performance markers in competitive contexts such as work and academia. Organized sport represents another competitive context in which some personality traits have been found to coincide with greater levels of success. For example, athletes competing in national or international competitions report higher levels of conscientiousness and lower levels of neuroticism than do those competing in club or regional competitions and athletes selected for the Paralympics Games report higher levels of tough-mindedness (a component of agreeableness) and lower levels of anxiety. To better understand the processes connecting personality traits to athletic success, researchers have recently begun to explore associations between personality traits and discrete athletic behaviors.*

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**Keywords:** *Personality, Sports, Physical activity*

### INTRODUCTION

People are remarkably varied in their ability to perform under stressful or challenging circumstances and in their tendencies to engage in health-related behaviors. To understand and encourage behavior change, the sources of these individual differences need to be uncovered. This review focuses on the personality dimensions outlined in the Five Factor theory of personality. Investigations have explored associations between personality traits and performance-related outcomes (e.g., academic and occupational success) and between personality traits and health-related outcomes (e.g., diet and stress). Amid the academic articles available, a considerable number have centered on personality-trait associations in the context of sport and physical activity. The development of this field originated when researchers started to notice particular traits among athletic adolescents (e.g., Fleming, 1934), and their articles tended to emphasize the contribution of athletic behavior to personality change. Over time, the focus shifted to consider personality traits as precursors to two core outcomes: sport performance (athletic success) and physical activity (exercise participation). We review each of these areas in turn, focusing on recent advances before considering new research questions and avenues of further study.

### PERSONALITY IN SPORT PERFORMANCE

Personality traits predict a number of performance markers in competitive contexts such as work and academia. Organized sport represents another competitive context in which some personality traits have been found to coincide with greater levels of success. For example, athletes competing in national or international competitions report higher levels of conscientiousness and lower levels of neuroticism than do those competing in club or regional competitions and athletes selected for the Paralympics Games report higher levels of tough-mindedness (a component of agreeableness) and lower levels of anxiety. To better understand the processes connecting personality traits to athletic success, researchers have recently begun to explore associations between personality traits and discrete athletic behaviors. It has been found that sport participants with high levels of conscientiousness use better preparation strategies. The relationship between personality and athletic success is often thought of as unidirectional—the general assumption being that personality traits cause some individuals to perform better or worse in athletic situations. However, it is also possible that athletic success, and the life changes that accompany this success, contribute to personality change. There is evidence from occupational settings that career success permeates personality change and, in particular, contributes to increases in levels of extraversion.

This is because success in occupational roles often accompanies changes in interpersonal activities (e.g., greater leadership behavior) that might challenge personality stability in adulthood. In athletic settings, success can also generate greater interpersonal activities, but, more importantly, it can lead to considerable income and media attention (e.g., changes in privacy, adoration by fans), and it remains unclear how these factors might contribute to personality change. We can speculate that the additional life stress that coincides with these factors might, under certain circumstances, contribute to undesirable changes (e.g., increases in neuroticism). Longitudinal studies are needed to explore bidirectional associations and potential moderator variables (e.g., social support) during important personal or career transitions (e.g., the transition from amateur to professional athlete).

### **PERSONALITY IN HEALTH-RELATED EXERCISE**

Physical inactivity has been identified as the fourth leading risk factor of global mortality, causing an estimated 5.3 million deaths each year (Lee et al., 2012). It is therefore unsurprising that psychologists are targeting the identification of factors associated with participation in regular exercise. There is now good evidence that personality traits relate to physical-activity levels. For example, new studies of adult sitting behavior have shown that low levels of conscientiousness, extraversion, and openness and high levels of neuroticism predict a greater occurrence of leisure-time sitting time. Comprehensive meta-analyses have also demonstrated that high levels of extraversion and conscientiousness and low levels of neuroticism relate to high levels of physical activity. In particular, industriousness (a component of conscientiousness) and activity (a component of extraversion) are often identified as important physical- activity correlates. The majority of research on personality and physical activity has targeted young adults. More recently, there has been a shift toward understanding physical-activity levels across the life span. Studies have demonstrated that older adults with high levels of extraversion have Greater muscular strength and those individuals with high levels of extraversion, openness, or conscientiousness or low levels of neuroticism record greater energy expenditure at peak walking pace importantly. It has also been found that positive attitudes toward

aging mediate a positive association between openness and levels of physical activity.

### **MOVING FORWARD**

The studies reviewed so far have provided some interesting perspectives on personality-trait associations in sport and physical activity. The greater focus on older adults has been an important development in the field—as have the greater use of longitudinal designs and variations in outcome measures (e.g., leisure-time sitting time, energy expenditure). In terms of research progression, the field might benefit from a more targeted focus on adolescent populations. In the context of sport performance, researchers might explore behavior-change interventions that target continued participation in sport among adolescents who have great athletic potential but personality traits associated with a high risk of drop-out. In the context of health-related exercise, researchers might explore changes in personality traits throughout adolescence and their relationship to changes in exercise motives. Longitudinal designs that target bidirectional associations might help to explain the shift from environmental to genetic influences on sport participation and the decline in exercise participation throughout adolescence. Adolescence is a critical developmental stage during which we observe not only the greatest changes in levels of physical activity but also the greatest changes in personality (McAdams & Olson, 2010).

There is reason to consider that these associations might not be mutually exclusive. Studies have found that sport participation contributes to the development of important life skills (Gould & Carson, 2008) and long-term health-related quality of life . Through sport participation, adolescents gain confidence, learn new physical capabilities, develop important social relationships, develop leadership skills, and gain satisfaction by working toward goals (Gould & Carson, 2008). It is reasonable, therefore, to consider that sport participation might contribute to personality change during adolescence. A critical question is whether different modes of physical activity have similar effects on personality change.

## **THE ROLE OF PERSONALITY IN SPORT AND PHYSICAL ACTIVITY**

Physical activity with low levels of social interaction. It would be interesting to explore the potential differences between activity modes in their effects on personality stability and change during adolescence. The role of personality in sport teams and exercise groups has received little empirical attention. In other (nonathletic) settings, it has been found that greater variation among group members in some personality traits (e.g., extraversion) and greater similarity in others (e.g., agreeableness) relate to more successful group performances. Similar associations might be observed in team sports, and this could have implications for applied practice in terms of selecting or deselecting players to fit the needs of a particular team or competition. In physical-activity settings, people often choose to take part in structured (group) exercise classes, and individual behavior in these contexts might also depend on the personality traits of other class members. For example, adherence levels might be higher when the group as a collective (or the group leader) scores highly on desirable personality traits (e.g., extraversion) or when the target person has personality traits similar (or dissimilar) to those of other group members. Personality similarity is one potential contributing factor to adherence levels in exercise programs, and this extends beyond other members of the exercise class to the personality traits of the consultant or service provider administering the physical-activity intervention. Consultants are often responsible for recruiting participants into behavior-change interventions and monitoring their progress.

It is reasonable to expect that clients' engagement and commitment to behavior-change recommendations might be contingent on their interactions with their service provider (e.g., relatedness) and that these interactions are conditioned by personality traits. Psychologist-client personality similarity is considered an important factor in turning intentions into behavior and researchers would do well to consider the personality traits of consultants when designing and implementing physical-activity interventions and evaluating their success. As far as we are aware, the personality traits of service providers have not featured in studies of behavior change that have targeted leisure-time physical activity. To critically evaluate intervention success, it is important to consider all potential moderator

variables, and these include the personality traits of the people delivering the interventions.

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Personality similarity is one potential contributing factor to adherence levels in exercise programs, and this extends beyond other members of the exercise class to the personality traits of the consultant or service provider administering the physical-activity intervention. Consultants are often responsible for recruiting participants into behavior-change interventions and monitoring their progress. It is reasonable to expect that clients' engagement and commitment to behavior-change recommendations might be contingent on their interactions with their service provider (e.g., relatedness) and that these interactions are conditioned by personality traits. Psychologist-client personality similarity is considered an important factor in turning intentions into behavior and researchers would do well to consider the personality traits of consultants when designing and implementing physical-activity interventions and evaluating their success. As far as we are aware, the personality traits of service providers have not featured in studies of behavior change that have targeted leisure-time physical activity. To critically evaluate intervention success, it is important to consider all potential moderator variables, and these include the personality traits of the people delivering the interventions.

## CONCLUSIONS

The available evidence shows that sport performance and physical-activity levels can be predicted by personality traits. Conscientiousness and neuroticism appear to be most important for athletic success, and these associations seem to mirror those observed in other performance contexts (e.g., academic and occupational success). Personality-trait dimensions also relate to interpersonal relationships in athletic dyads and can predict athletes' psychological states before, during, and after competitions. Little is known about the contribution of athletic success to personality change or how personality-trait similarities among team members relate to group success. In the context of physical activity, extraversion and conscientiousness (and, to a lesser extent, neuroticism) predict physical-activity

levels in nonclinical samples. These dimensions also relate to strength and mobility in older adults and, along with agreeableness, can predict unhealthy (addictive) exercise behavior. Importantly, new research has suggested that leisure-time physical activity can contribute to personality change during adulthood. We recommend additional longitudinal studies that explore bidirectional associations between personality traits and various modes of physical activity. This information would be particularly valuable to researchers pursuing the various environmental factors that contribute to personality-trait development, and might also be of value to health professionals targeting the promotion of physical activity and healthy living in developed nations

## REFERENCE

1. Allen, M. S., Greenlees, I., & Jones, M. V. (2013). Personality in sport: A comprehensive review. *International Review of Sport and Exercise Psychology*, 6, 184–208. A detailed narrative review of personality in sport performance that includes population-based differences and issues in applied practice.
2. Rhodes, R. E., & Pfaeffli, L. A. (2012). (See References). A systematic review of the relationship between personality traits and participation in physical activity that explores facet-level relationships and moderator variables including age, culture, and physical-activity mode.
3. Stephan, Y., Sutin, A. R., & Terracciano, A. (2014). Physical activity and personality development across adulthood and old age: Evidence from two longitudinal studies. *Journal of Research in Personality*, 49, 1–7

## **PERFORMANCE ANALYSIS IN SPORT**

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### **ABSTRACT**

*This paper will seek to provide a comprehensive description of Performance Analysis, its purpose and its broad possible applications. The paper will summarise the similarities of approach of biomechanics and notational analysis, and will show how, through the application of motor control theories, these two different approaches to of objective feedback can combine to help the sports player, coach and manager. The review of relevant researches in Performance analysis of sport is given also. The main focus of this paper is how biomechanical and notational analyses have helped, and can help, coaches and athletes to analyse and improve sports performance. It has been also showed how data from these researches can be analysed and processed in a variety of ways to provide a descriptive profile that can be used for giving both the athlete and the coach feedback about their actions.*

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**key words:** *Performance Analysis, Sport, biomechanics, notational analysis, training process*

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### **INTRODUCTION**

This paper will consider what performance analysis in sport what biomechanical and notation a analysis has in common and how they differ. The main focus will be how they have helped, and can better help, coaches and athletes to analyse and improve sports performance. Biomechanics, notational analysis and motor control all involve the analysis and improvement of sport performance. They make extensive use of video analysis and technology. They require careful information management for good feedback to coaches and performers and systematic techniques of observation. They have theoretical models-based on performance indicators—amenable to artificial intelligence developments and strong theoretical links with other sport science and information technologies disciplines. They differ in that bio mechanists analyse, individual sports techniques and their science is grounded in mechanics and anatomy. A notational analyst study technical and tactical patterns in soccer, gross movements or movement patterns, and is primarily concerned with strategy and tactics and has a history in dance and music notation. Notational analysts are gradually establishing their own methodological processes and interlinking these with developing theories for the specific problems associated with their data analyses. The practical value of performance analysis is that well-chosen performance indicators highlight good and bad techniques or team performances. They

help coaches to identify good and bad performances of player and facilitate comparative analysis of teams and players. In addition, biomechanics helps to identify injurious techniques while notational analysis helps to assess physiological and psychological demands of sports. Drawing on a range of examples, it will be argued that performance analysts require a unified approach, examining interactions between players, and their individual skill elements. Of fundamental importance is the need for us to pay far greater attention to the principles of providing feedback-technique points that a coach can observe from video and simple counts of events are unlikely to enhance individual or team performance. Notational analysis is an objective way of recording performance, so that critical events in that performance can be quantified in a consistent and reliable manner. This enables quantitative and qualitative feedback that is accurate and objective. No change in performance of any kind will take place without feedback. The role of feedback is central in the performance improvement process, and by inference, so is the need for accuracy and precision of such feedback The provision of this accurate and precise feedback can only be facilitated if performance and practice is subjected to a vigorous process of analysis. Augmented feedback has traditionally been provided by subjective observations, made during performance by the coaches, in the belief that they can accurately report on the critical elements of performance without any observation aids. Several

studies not only contradict this belief, but also suggest that the recall abilities of experienced coaches are little better than those of novices, and that even with observational training, coaches' recall abilities improved only slightly. Furthermore, research in applied psychology has suggested that these recall abilities are also influenced by factors that include the observer's motives and beliefs. The coach is not a passive perceiver of information, and as such his or her perception of events is selective and constructive, not simply a copying process. The applications of notational analysis in different sport activities

### MOVEMENT ANALYSIS

**Detailed** analysis of movement is a complex activity requiring sophisticated equipment. However, basic

analysis of movement can be done visually and should involve the following:

- A description of the actual movements which occur at the joints involved
- The plane(s) in which the movement occurs
- The muscles producing the movement
- The function of the muscles involved The type of contraction (isotonic - concentric or eccentric, isometric)
- The range of the muscle action (inner, middle, outer)

### ANALYSIS OF SPRINTING

The leg action in running is one that takes place in a and involves the hip, knee and ankle joints.

The bones of the hip involved are the femur and pelvic girdle which form a ball and socket joint. The bones of the knee involved are the femur and tibia which form a hinge joint. The bones of the ankle involved are the tibia and calcaneus which form a modified joint.

Each of these joints produces two actions, one when the leg is in contact with the ground (driving phase) and one when the leg is not in contact with the ground (recovery phase).

#### *Driving Phase*

Joints involved	Action	Agonist Muscle
Hip	<u>Extension &amp; hyperextension</u>	Gluteal muscles (gluteus maximus and gluteus minimus) and Hamstrings (biceps femoris, semimembranosus

		, semitendinosus)
Knee	<u>Extension</u>	Quadriceps group of muscles (rectus femoris, vastus medialis, vastus lateralis and vastus intermedius)
Ankle	<u>Plantar flexion</u>	Gastrocnemius

#### *Recovery phase*

Joints involved	Action	Agonist Muscle
Hip	<u>Flexion</u>	Iliopsoas
Knee	<u>Flexion</u>	Hamstrings (biceps femoris, semimembranosus, semitendinosus)
Ankle	<u>Dorsi flexion</u>	Tibialis anterior

### BIOMECHANICS-WHAT IS THE BIOMECHANICAL VIEW OF PERFORMANCE ANALYSIS?

Sports biomechanics is concerned with fine detail about individual sports techniques while notational analysts are more concerned with gross movements or movement patterns in games or teams. Furthermore, notational analysts are more concerned with strategic and tactical issues in sport than with technique analysis and the two disciplines do not share a common historical background. However, the similarities between the two groups of performance analysts are far more marked than the differences. A crucial similarity is evident when we look at the other sport science disciplines: sports psychology and physiology (including nutrition) essentially focus on preparing the athlete for competition. Performance analysts, in contrast, focus on the performance in competition to draw lessons for improving performance and this is true of both notational and biomechanical analysis. Both are fundamentally concerned with the analysis and improvement of performance.

Both are rooted in the analysis of human movement. Both make extensive use of video analysis and video -based technology. Although both evolved from manual systems, they now rely heavily on computerised analysis systems. Both have a strong focus on data collection and processing. Produce vast amounts of information this is sometimes claimed to be a strength of both

sports bio mechanics and notational analysis; however, it often requires careful attention in providing feedback to athletes and coaches.

In addition, bio mechanists and notational analysts both emphasise the development of systematic techniques of observation. This is more obvious in notational analysis and, perhaps, in the somewhat neglected 'qualitative' analysis approach of biomechanics than in fully quantitative 'computerised biomechanical analysis', which seems somewhat out of fashion with coaches at present. Both have a strong focus on the provision of feedback to the coach and performer to improve performance and each group is now learning and adopting best practice from the other. 4Technical evaluation To define quantitatively where technique fails or excels has very practical uses for coaches, in particular,

### **EDUCATIONAL APPLICATIONS**

It is accepted that feedback, if presented at the correct time and in the correct quantity, plays a great part in the learning of new skills and the enhancement of performance. Recent research , however, has shown that the more objective or quantitative the feedback, the greater effect it has on performance. However, in order to gauge the exact effect of feedback alone, complete control conditions would be needed in order to minimise the effect of other external variables, which is by definition impossible in real competitive environments. This experimental design is also

made more difficult because working with elite athletes precludes large numbers of subjects. Were using notation systems as an adjunct to a spectrum of tactical models that they created for squash. The hand notation systems are used by the Welsh national youth squads, the actual notation being completed by the players, for the players. It is believed that in this way the tactical awareness of the players, doing the notation, are heightened by their administration of these systems.

### **CONCLUSIONS**

The use of systematic observation instruments provides researchers with a method of collecting behavioural data on both the coach and the athlete. These data can be analysed and processed in a variety of ways to provide a descriptive profile that can be used for giving both the athlete and the coach feedback about their actions. Advances in both computer and video technology can make this observation process more efficient and also provide the coach with audio - visual feedback about their interactions with athletes. The next phase of solving these problems in their entirety is translating the use of these objective observation systems into practice. The presentation here attempts to exemplify some of the better practical uses of analysis by elite coaches and athletes. The next step is to be able to describe in generic terms the whole process, of performance analyses and their applications to the coaching process, so that it can be applied to any type of sport

### **REFERENCE**

1. [https://bib.irb.hr/datoteka/591816.Performance\\_Analysis\\_in\\_Sport\\_-\\_Finalno.pdf](https://bib.irb.hr/datoteka/591816.Performance_Analysis_in_Sport_-_Finalno.pdf)
2. [blog.isportsanalysis.com/video-analysis-sport/](http://blog.isportsanalysis.com/video-analysis-sport/)
3. [altorendimiento.com/performance-analysis-to-improve-sport-performance/](http://altorendimiento.com/performance-analysis-to-improve-sport-performance/)
4. <https://www.brianmac.co.uk/moveanal.htm>



## YOGA EXERCISE IN HEALTH AND SPORT

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### ABSTRACT

*Uninostril breathing facilitates the performance on spatial and verbal cognitive tasks, said to be right and left brain functions, respectively. Since hemispheric memory functions are also known to be lateralized, the present study assessed the effects of uninostril breathing on the performance in verbal and spatial memory tests. School children (N = 108 whose ages ranged from 10 to 17 years) were randomly assigned to four groups. Each group practiced a specific yoga breathing technique: (i) right nostril breathing, (ii) left nostril breathing, (iii) alternate nostril breathing, or (iv) breath awareness without manipulation of nostrils. These techniques were practiced for 10 days. Verbal and spatial memory was assessed initially and after 10 days. An age-matched control group of 27 were similarly assessed. All 4 trained groups showed a significant increase in spatial test scores at retest, but the control group showed no change. Average increase in spatial memory scores for the trained groups was 84%. It appears yoga breathing increases spatial rather than verbal scores, without a lateralized effect.*

### INTRODUCTION

Yoga as we identify it today is the product of a complex spiritual evolution that has taken place over centuries, the exact history of Yoga is uncertain. The earliest signs of Yoga can be traced to Stone Age Shamanism, both Shamanism and Yoga has cultural similarities. The shamanistic civilization revered the sacred art of discern the cosmic order through inner vision; they used rituals to create shifts in their perceptual field to communicate with the spirit world. Shamans were the precursors of the Yogis. The development of yoga can be traced to over 5,000 years ago, evidence of yoga postures were found on stone drawings dating from these times. Yoga's long rich history can be divided into five main periods: Vedic Yoga, Pre-Classical Yoga, Classical Yoga, Post-Classical Yoga and Modern Yoga.

Yoga is a form of exercise that originated in ancient India and is practiced widely across the world today. Yoga not only enhances your physical strength but also contributes largely towards your mental health and spiritual growth. Looking at the popularity of yoga, Hon'ble Prime Minister Narendra Modi suggested at the UN Assembly that yoga be given a special day as it is beneficial for everyone and making it a world event would help in spreading awareness about its benefits. So, on 21st June 2015, World Yoga Day was observed for the first time across the world and has since been celebrated annually. Yoga not only keeps you fit but also has a lot of long-term benefits when you make it an integral part of your lifestyle.

### DEFINITIONS

1. According to Patanjali, "it is affected by preventing the modification of Citta or the thinking principle by keeping in mind in its unmodified state –a state as clear as crystal when uncoloured by contact with other substances."
2. According to Oxford Dictionary, "as a Hindu system of philosophical meditation and asceticism, yoga was designed to affect the union of the devoted soul with the universal soul."

### YOGA ASANAS AND THEIR BENEFITS

Yoga asanas are the simplest and the easiest way to reduce our excess weight and meditating our body and mind. The ancient practice types of yoga asanas provides a wide range of mind and body benefits, including other benefits like giving strength and flexibility, stress relief and even cures many diseases. Yoga is all about stretching our body in different forms and meditation. Yoga poses like Surya namaskara (Sun Salutation), Dhanurasana (Bow pose), Bhujangasana (Cobra pose), Kapalabhati pranayama and so many other effective yoga poses, helps in reducing our weight as well as our belly fat.

## **FITNESS AND YOGA IN SPORTS**

### **INCREASING BALANCE AND CORE STRENGTH**

In order to preserve the balance in your body, you must strengthen the core, which is the center of your body. The human body is divided into two major muscles groups, the upper body muscles and lower body muscles. The core is the one that has the duty to balance these so they can work synergistically therefore, it has to be strengthened. Perhaps there is no better way of understanding and achieving this other than practicing yoga.

### **INCREASING FLEXIBILITY**

No doubt that yoga is the best way to increase flexibility. Flexibility is very much needed for an athlete to be able to jump higher, hit harder, reach further or run faster. Sometimes in order to achieve the desired results an athlete would force their bodies to an extreme training which can cause the muscles to become too tight. Yoga can help to loosen these muscles and make them flexible again.

### **HELP CONNECTING THE MIND AND BODY**

Perhaps a better way to describe this is you have to be able to communicate better with your body in order to bring out its best potentials. As your self awareness grows, your body will be stronger. An athlete should also be able to listen to their body by paying attention to the signals given by it and respond to it properly, and yoga is the best way to help you doing this.

### **DECREASE THE RISK OF INJURY**

Injury is the worst enemy for an athlete. It could make an athlete miss an important match or competition, or even worse it could end a great career. By practicing yoga, the increased flexibility can help to decrease muscle strains, which can reduce the risk of an injury, therefore athletes can play more safely in whatever sports they are participating.

### **OBJECTIVES**

1. To evaluate the effect of integral yoga on human potential by assessing sustained attention, emotional intelligence, general health, triguna personality inventory and to evaluate the correlations of each variable with other variables.

2. To study the immediate effect of Kapālabhāti and Breath awareness on human potential assessed by state anxiety, sustained attention and verbal and spatial memory.
3. To study the immediate effect of Deep Relaxation Technique vs Supine rest on human potential assessed by state anxiety and sustained attention.

## **HEALTH AND YOGA IN EXERCISE AND SPORT**

### **BUILDS MUSCLE STRENGTH**

Strong muscles do more than look good. They also protect us from conditions like arthritis and back pain, and help prevent falls in elderly people. And when you build strength through yoga, you balance it with flexibility. If you just went to the gym and lifted weights, you might build strength at the expense of flexibility.

### **PERFECTS YOUR POSTURE**

Your head is like a bowling ball—big, round, and heavy. When it's balanced directly over an erect spine, it takes much less work for your neck and back muscles to support it. Move it several inches forward, however, and you start to strain those muscles. Hold up that forward-leaning bowling ball for eight or 12 hours a day and it's no wonder you're tired. And fatigue might not be your only problem. Poor posture can cause back, neck, and other muscle and joint problems. As you slump, your body may compensate by flattening the normal inward curves in your neck and lower back. This can cause pain and degenerative arthritis of the spine.

### **INCREASES YOUR BLOOD FLOW**

Yoga gets your blood flowing. More specifically, the relaxation exercises you learn in yoga can help your circulation, especially in your hands and feet. Yoga also gets more oxygen to your cells, which function better as a result. Twisting poses are thought to wring out venous blood from internal organs and allow oxygenated blood to flow in once the twist is released. Inverted poses, such as Headstand, Handstand, and Shoulderstand, encourage venous blood from the legs and pelvis to flow back to the heart, where it can be pumped to the lungs to be freshly oxygenated. This can help if you have swelling in your legs from heart or kidney problems. Yoga also boosts levels of hemoglobin and red blood cells, which carry oxygen to the tissues. And it thins the blood by

making platelets less sticky and by cutting the level of clot-promoting proteins in the blood. This can lead to a decrease in heart attacks and strokes since blood clots are often

### **MAINTAINS YOUR NERVOUS SYSTEM**

Some advanced yogis can control their bodies in extraordinary ways, many of which are mediated by the nervous system. Scientists have monitored yogis who could induce unusual heart rhythms, generate specific brain-wave patterns, and, using a meditation technique, raise the temperature of their hands by 15 degrees Fahrenheit. If they can use yoga to do that, perhaps you could learn to improve blood flow to your pelvis if you're trying to get pregnant or induce relaxation when you're having trouble falling asleep.

Health benefits of yoga exercise

### **BENEFITS**

The practice of sun salutation which is comprised of a series of postures helps in maintaining good health and vigor. It invigorates the body and the mind. It helps to reduce abdominal fat and increases the flexibility of the spine and limbs. Since the various steps of sun-salutation require coordination with breathing, it strengthens the breathing capacity. The reduction of fat will help to reduce the effects of hypertension, diabetes etc. It has the potential to penetrate and rejuvenate most of the vital organs of the human system, while keeping the mind calm and focused.

### **HEALTH BENEFIT OF YOGA**

Here's a list of some of the most beneficial aspects of power yoga:

- It increases endurance, strength, and flexibility.
- Mental endurance and physical stamina are tested through holding postures for extended breaths.

### **REFERENCES**

1. Chen KM Silver et al., Yoga Exercises Improved Physical Fitness of Transitional Frail Elders, 2010.
2. Chen TL et al., The effect of yoga exercise intervention on health related physical fitness in school-age asthmatic children, 2009.
3. Clair W. Farnham, 'An introduction of tests of Agility', Completed research in health, Physical education and recreation, 1966.
4. Clay CC et al., The Metabolic Cost of Hatha Yoga, San Marcos, USA, 2005.
5. Dune D., The Manual of yoga, London: W. Fauloshan and co. Ltd., 1956.
6. <http://apnitricity.com/articles/top-10-different-types-yoga-asanas-benefits/>, Date: 25-11-2017, Time 03:25pm

- Arm and shoulder strength is increased as you use your own body weight for resistance.
- Lats, traps, and other back muscles begin to support the spine better than before.
- Abdominals and obliques are refined and toned through building core muscles.
- Posture begins to correct itself over time.
- Hip flexors are stretched and strengthened.
- Glutes, quads, hamstrings, and calves are strengthened.
- increase your flexibility
- increase muscle tone and strength
- improve your circulatory and cardio health
- helps you sleep better
- increase your energy levels
- improve athletic performance
- reduce injuries
- detoxify your organs
- improve your posture
- improves anxiety and depression
- helps with chronic pain
- release endorphins that improve your mood

### **CONCLUSION**

As highlighted above, researcher find out that yoga in sports as important as other think it helps us in different ways and different levels in a sports men life. We have improved our performance by daily yoga practicing in order to perform a sporting action efficiently and effectively, a person needs to have a high degree of concentration and focus with a mind that is calm and controlled, Yoga can help a sportsperson to have evenness of mind and control of their thoughts even during stress and/or adversity. Yoga can play a key role in cultivating mind control and concentration which helps a sportsperson to perform at their peak levels and yoga helps us a lot.

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**ANALYTICAL STUDY OF SELECTED PHYSICAL FITNESS VARIABLES  
AMONG THE STUDENT OF G. S. GAWANDE JR. COLLEGE AND ITI,  
COLLEGE OF UMARKHED TALUKA OF YAVATMAL DISTRICT,  
MAHARASHTRA**

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**ABSTRACT**

*The purpose of the study was in relation to the body mass index and selected physical fitness variables were analysed. A total of 150 students which were selected from the G. S. Gawande Jr. College and ITI, College, Umarched (India). They were not given any physical training before taking body mass index and physical fitness variables test. After the selection of 150 students who had their age ranging from 17- 21 years studying in different classes, they were administered test on selected criterion variables. The body mass index and selected Physical Fitness variables were speed, agility, strength (right and left hand grip, leg strength).*

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**Keywords:** Fitness, Body Index, ITI

**INTRODUCTION**

The obvious need to have communities, schools; states and the nation endorse the importance of regular physical activity for the nation's health by working with fitness professionals and allocating resources. The human body is the only machine that breaks down when not used. And it is the only mechanism that functions better and healthier the more it is put to use. Human body is created to function well it is in active condition. Physical fitness avoids an individual from being infected or suffers from illness; stay healthy both mentally and physically throughout their lives. In short term, they are able to perform daily chores easily and able to prevent chronic diseases such as heart attack, high blood pressure, cancer, diabetes, and osteoporosis (Omar-Fauzee *et al.*, 2010). Physical fitness is a crucial pillar contributing a lot for the health of an individual so that it affects our ability to function and be physically active and, at poor levels, is associated with such health outcomes as diabetes and cardiovascular diseases (Institute of Medicine, 2012). Physical fitness according to the President's Council on Fitness is a broad quality involving medical and dental supervision and care immunization and other protection against diseases, proper nutrition, adequate rest, relaxation, good health practices, sanitation and other aspects of healthful living. It further states that exercise is an essential element to achieving

and maintaining physical fitness (Jourkest *et al.*, 2011).

The benefits of a physical fitness program include improved capability to perform specific physical tasks, improved ability to mobilize the body efficiently, improved tolerance to fatigue, reduced risk during physical attacks, better psychological preparation, and reduced stress and associated health risks (Cooper Institute as cited in Sonia, 2010). In this sense, data on physical fitness status of students in GSG, Jr. College and ITI, College seem to be scarce. Therefore, the aim of this study physical fitness level of students so that the results obtained can be very helpful to promote good health in the early stages.

**MATERIALS AND METHODS**

**Selection of subjects**

In this study, random sampling technique was used to draw samples of first year male students studying in different colleges in Mekelle University, from two colleges and one institute. The size of samples was determined by using a Simplified Formula for Proportions (Yemane, 1967 as cited in Israel, 1992) which provides a simplified formula to calculate the sample size. From a total of 156 populations, 150 samples were drawn. These samples were distributed for colleges and departments using statistical formula, Proportionate for Sample Size Determination. They were aged 19 to 22 years old with mean  $\pm$ SD

of age: 18.16±1.09, weight: 55.08±2.3, & height: 1.6887±0.05 respectively. All of the samples were participated willingly and voluntarily in this study.

**Selection of variables and tests:**

There are three different programs that provide excellent examples of effective tools for measurement within physical education. It tests all students regardless of age, gender, or ability. Students are encouraged to be self-aware of health-related fitness and take responsibility by setting personal fitness goals. It provides a number of options for each performance tasks so all students who have the maximum opportunity to complete the tests. In this present study, the variables were selected based on the review of related literature, experts, feasibility of the criteria, availability of tools, and the relevance of the variables to the present study. The Physical Fitness Test (PFT) measures four aspects so that the investigator selected cardiovascular fitness, muscle strength, muscular endurance, and flexibility as criterion variables. Appropriate tests were used cardiovascular fitness – one mile run test, muscle strength – trunk lift, muscular endurance - Curl up and flexibility – Back - Saver Sit and Reach test.

Age	34 9	19	22	19.9 2	.909
Weight	34 9	46	68	57.0 8	4.233
Height	34 9	1.55	1.89	1.68 87	.05739

N= number of participants

The results concerning the significant difference between means on the selected HRPF variables among different college students were analyzed. Bases on the findings obtained from this study, the following conclusions were drawn. As findings revealed, at 5% level of significance, there is enough evidence to support the claim that there were differences in physical fitness level among students of different Colleges. Statistically significant means differences were showed in Cardiovascular Fitness, Abdominal muscle Strength and Endurance, and Extensor Muscle Strength and Flexibility. Students did not demonstrate reasonable difference in the level of physical fitness-Lower Back and Hamstring Muscles Flexibility so statistically no significant difference was observed. In overall physical fitness variables students from the GSG, Jr. College and ITI, College of Umarkhed taluka demonstrated superior performance. The probable reason for this better performance could be, unfortunately students from the CDANR have an exposure for the practice of physical activities since they have been taking physical education course

**RESULTS AND DISCUSSION**

**Table 1: Physical Characteristics of the Students-Descriptive Statistics**

Parameters	N	Minimum	Maximum	Mean	Std. Deviation
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**REFERENCES**

1. Institute of Medicine of National Academy of Sciences. (2012). Fitness Measures and Health Outcomes in Youth: Report Brief, Washington,DC. www.iom.edu/fitnessmeasures
2. Israel, G.D. (1992). Sampling the Evidence of Extension Program Impact, PEOD-5, Department of Agricultural Education and Communication, and extension specialist, Program Evaluation and Organizational Development, Institute of Food and Agricultural Sciences (IFAS), University of Florida
3. Morrow, J.R. e al. (2013). Meeting Physical Activity Guidelines and Health-Related Fitness in Youth. Am J Prev Med, 44:439-44.
4. Omar-Fauzee, M. S. et al. (2010). Sport Science Students’ Fitness level at University Malaysia Sabah. European Journal o Social Sciences, 12:538-544.
5. Sonia, Q. (2009). Physical Fitness and Wellness at the Hallandale Beach Police Department, SLP Research Papers, Florida department of law enforcement, Florida Texas School Health Advisory Committee. 2008. Fitness gram Guide for Parents and Guardians, Texas, USA

## SCIENTIFIC WAYS TO PREVENT INJURIES

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### WHY DO ATHLETES GET INJURED

- Overtraining
- Not allowing for proper recovery
- Not listening to their body
- Strength and flexibility imbalance
- Weakness
- Inflexibility
- Improper footwear
- Improper surface

### HOW DO YOU PREVENT INJURIES

- Follow a sensible training program which incorporates appropriate rest.
- Listen to your body
- Proper warm up should be done
- Strengthen muscles specific to game
- Stretch thoroughly after completion of game
- Apply Cryotherapy
- Massage (self massage & professional massage)

### PROPER RECOVERY

If a sensible training program is followed it will automatically prevent injuries. There is always an error in case of recovery in any training programme. We should observe mood changes, increased basal heart rate, increased restlessness and disturbed sleep. We should reduce volume or intensity or both, whenever we notice these symptoms occurring.

### SIGNIFICANCE OF STRENGTHENING & STRETCHING

Strengthening and stretching helps to correct imbalance which can develop among different muscle groups. If these are ignored it can convert into stress on particular area of body which may ultimately result in an injury. Many injuries are due to the weakness on one side of joint. If a weak muscle is opposing tight muscle, fatigue takes place more quickly. This leads to poor biomechanics and that results in an injury.

### APPROPRIATE STRENGTHENING EXERCISES AND SUITABLE TIME

Exercise to strengthen major muscles are good way to reduce the muscular imbalance. Strengthening exercise are Bicycle, Prone Core Stabilisation, Single-leg Balance Drill, Lunges, Heel walking, Toe walking, Toe Grasping and Pool running etc. It should be performed 2-3 times a week, with 2-3 sets of 15 to 20 repetition per exercise. Strengthening is reserved for healthy muscle. We should include rest and/or treatment of injured tissue followed by movement and stretching before the strengthening exercises start.

### APPROPRIATE STRETCHING AT APPROPRIATE TIME

Slow static stretch should be incorporated in warm up. Deeper stretches should be done after exercise when the muscle are warm and more flexible. Stretching may be uncomfortable, but it should never be painful. Do not force the stretch wait for the tissue to relax. It takes 15 – 60 seconds for effective stretch. Stretch deeper muscle and with more intensity after exercise while you are still warm.

### IMPORTANCE OF FOAM ROLLER

The roller should be used before stretching a muscle. It is very effective method of applying self massage. You should roll at tight place on muscle and wait until you feel softening. Never hold on to one spot more than a minute. This will improve flexibility of muscle.

### SIGNIFICANT OF CRYOTHERAPY

Cryotherapy is cheapest therapy and more effective. A 10-15 minutes soak in cold water between 55-60° helps to prevent post exercise muscle soreness and inflammation. It can be used on any acute injury. Application of ice is most effective in first 24 to 48 hours after injury. Icing can reduce severity of an injury it is also valuable for treating chronic inflammation. Treatment should last from 10 – 20 minutes depending on size of area. Put a thick cloth between your skin and ice pack during application.

### **USE OF APPROPRIATE FOOTWARE AND ITS LIFE**

The best ways to select appropriate footwear is to visit store and try on may different models of footwear. In general, a motion control shoe is best

for over pronators with flat, floppy feet, and a shoe with extra cushioning is best for those with a rigid, high arched foot. Many injuries are due to improper footwear. One should not use a particular pair of footwear for very longer duration

### **REFERENCES**

1. Seto CK. Clin Sports Med. 2003; 22:23-35
2. Maron BJ. The young competitive athlete with Cardiovascular abnormalities :
3. Causes of sudden death, detection by preparticipation screening, and standards for disqualification. Card Electrophysiol Rev. 2002; 6:100-103.
4. Maron BJ, Thompson PD, Puffer JC, et.al. Cardiovascular preparticipation screening of competitive adults. Circulation.1996; 94:850-856.
5. Corrigan B, Kazlauskas R. Medication use in athletes selected for doping control at the Sydney Olympics (2000). Clin J Sport Med. 2003; 13:33-40



## **A NORMATIVE STUDY ON BODY MASS INDEX OF 13,14 AND 15 YEARS OLD GIRLS OF DELHI SCHOOLS**

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### **ABSTRACT**

*The purpose of the Study was development of Norms for Body Mass Index of school going girls of the age group 13,14 and 15 years. For the purpose of the study, the subjects were selected from different schools of all 29 zones of Delhi under the structure of Directorate of Education, Government of National capital Territory of Delhi using purposive sampling. The Sample size was 2100 subjects The variable for the study was Body Mass Index which was measured through Height and Weight. Body Composition was measured by measuring Body Mass Index (BMI) with height in meters and weight in kg. The Descriptive Statistical techniques used for the analysis of data was Mean, Standard Deviation, Minimum scores, Maximum Scores and Range. For the development of Norms, Percentile and Six Sigma Scale were used.*

**Key Words:** Norms, Body Mass Index.

### **INTRODUCTION**

A fit and healthy person will certainly live longer life and may become more productive at work place to enhance nation's growth and development. With an increasing prevalence of heart and other cardiovascular diseases as well as a wide range of health concerns, the importance of leading healthy lives that include a well-balanced diet and an adequate fitness regime that embodies healthy lifestyle habits is imperative.

Health has a direct impact on all activities, economic or otherwise. With massive efforts being made to effectively implement the provisions of the Right to Education Act (RTE), 2010, enroll every child below 14 years in school, it would be best if the health and fitness related schemes are implemented through the organized school system.

As per The World Health Statistics-2012 report released by WHO, one in three adults worldwide, has raised blood pressure and one in 10 adults has diabetes. Also 12% of the total population are obese. A startling observation of WHO vulnerable to these deadly diseases. In the same Report, WHO also makes a prediction that one out of every three Indians will either be a coronary patient or a diabetic by 2030. This projected population at risk about two decades from now will necessarily be the presently school going children. Given the fact that, majority of our population are in the youth

category below the age of 35 years, WHO's prediction for 2030 has to be addressed at the national level urgently. Maintaining a healthy body weight is very important to all aspects of well being. It can help in avoiding serious health problems such as heart disease and type 2 diabetes.

One way of checking of healthy weight is to know your Body Mass Index (BMI). Your body mass index is calculated by dividing your weight in kilograms by your height squared in metres. In physical fitness, body composition is used to describe the percentages of fat, bone, water and muscle in human bodies. Because muscular tissue takes up less space in our body than fat tissue, our body composition, as well as weight, determines leanness.

### **MATERIALS AND METHODS:**

This Chapter contains an elaborate description about the sources of the subjects, selection of the subjects, selection of the variables, criterion measures, administration of the test items, collection of data, procedure for establishing norms and statistical techniques etc. The detailed descriptions of the content are as follows:

### **SOURCES OF THE SUBJECTS**

For the proposed study, 2100 female subjects in the age category of 13 to 15 years i.e. 700 subjects each age category were randomly selected from various schools of Delhi.



### CRITERION MEASURES

Body composition (percentage of body fat).  
 The following testing items will be used for the collection of the data:

S. N.	Variable	Test Item	Unit of Measurement
1.	Body composition (percentage of body fat)	Height and Weight	meter/kilogram

**(a) Height:** Subject stands erect bare-footed with heels and back of the head touching the stands or wall. The device of measurement stand or a flat card-board was put up on the top of the head to take the height of an individual.

Scoring: The measurement is taken to the nearest centimeter.

**(b) Weight:** The subject stood on the platform of the weigh-in Machine bare-footed with foot parallel and weight equally distributed on both feet. Minimum cloth shirts/t-shirt and shorts/skirt in case of girls.

Scoring: The weight is recorded from the indicator dial of the machine in kgs.

### COLLECTION OF THE DATA

The research scholar visited various schools of Delhi to collect the data by administering the fitness tests as mentioned in the administration of the test items for the selected girls age ranging 13-15 years.

### PROCEDURE FOR ESTABLISHING NORMS:

The Normative scores were developed by testing selected 750 girls' subjects of Delhi schools on each test item considered for proposed study separately. A common method of organizing normative data is through the use of percentile tables. Percentile tables for each

**TABLE 1.01**  
**Descriptive Statistics of Body Mass Index (kg/m<sup>2</sup>) of girls aged 13, 14 and 15 years studying in Delhi schools**

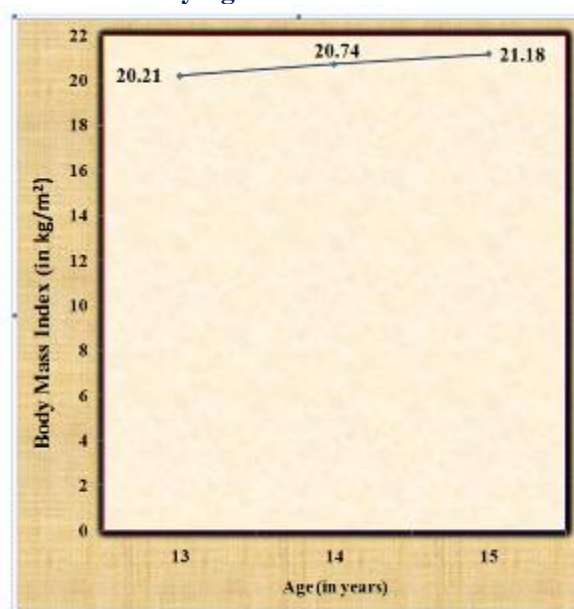
Age	N	Mean	Std. Deviation	Minimum	Maximum	Range
13 Year s	7 0 0	20. 21	4.46	10.14	38.19	28. 05
14	7	20.	4.39	9.96	37.31	27.

test items separately will indicate the percentile equivalent (rank) associated with any given raw scores.

### RESULTS AND DISCUSSIONS

The findings of the Research Study were accomplished by employing various statistical techniques. The statistics used for deriving results were mean, standard deviation, minimum & maximum values on body composition of girls from 13 to 15 years studying in Delhi schools has been calculated. These findings have been presented in the following tables:

**Fig. 1.01: Mean Values of the Body Mass Index of girls aged 13, 14 and 15 years studying in Delhi schools.**



It is highlighted from the figure 4.1 that the body mass index was found highest among the 15 year old girls followed by the 14 year and least among the 13 year old girls studying in Delhi Schools.

Year s	0 0	74				35
15 Year s	7 0 0	21. 18	4.43	12.16	41.46	29. 30

Note: n= number of subjects selected  
 Table 1.01 highlights the descriptive analysis of the body mass index of the 13, 14 and 15 years old girls studying in Delhi schools. The mean and standard deviation of the body mass index of the 13, 14 and 15 years old girls studying in Delhi schools were found as  $20.21 \pm 4.46 \text{ kg/m}^2$ ,

20.74± 4.39 kg/m<sup>2</sup> and 21.18± 4.43 kg/m<sup>2</sup> respectively. Further, the table highlights that the minimum value, maximum value and the range of values of the body mass index of the 13 year old girls studying in Delhi schools were 10.14, 38.19 and 28.05 kg/m<sup>2</sup> respectively; of the 14 year old girls studying in Delhi schools

were 9.96, 37.31 and 27.35 kg/m<sup>2</sup> respectively; and of the 15 year old girls studying in Delhi schools were 12.16, 41.46 and 29.30 kg/m<sup>2</sup> respectively. The graphical representation of the mean scores of the body mass index of the 13, 14 and 15 years old girls studying in Delhi schools is presented in the figure 1.01.

**TABLE 1.02**  
**Percentile Values of Body Mass Index (kg/m<sup>2</sup>) of 13 year old girls studying in Delhi Schools**

Percentile	Body Mass Index	Percentile	Body Mass Index
100	38.19	75	22.76
99	33.50	74	22.59
98	31.76	73	22.40
97	30.93	72	22.29
96	30.02	71	22.22
95	29.27	70	22.02
94	28.16	69	21.87
93	27.21	68	21.69
92	26.71	67	21.56
91	26.13	66	21.42
90	25.78	65	21.22
89	25.57	64	21.08
88	25.36	63	20.96
87	25.07	62	20.83
86	24.89	61	20.78
85	24.70	60	20.69
84	24.52	59	20.64
83	24.08	58	20.54
82	23.92	57	20.42
81	23.76	56	20.31
80	23.62	55	20.23
79	23.47	54	20.06
78	23.31	53	19.93
77	23.07	52	19.78
76	22.95	51	19.64

Percentile	Body Mass Index	Percentile	Body Mass Index
50	19.49	25	16.95
49	19.41	24	16.79
48	19.26	23	16.65
47	19.19	22	16.55
46	19.11	21	16.45
45	19.02	20	16.38
44	18.95	19	16.25
43	18.89	18	16.18
42	18.79	17	16.07
41	18.69	16	15.95
40	18.49	15	15.82
39	18.41	14	15.78
38	18.24	13	15.65

37	18.14	12	15.54
36	18.06	11	15.41
35	18.01	10	15.24
34	17.92	9	15.15
33	17.85	8	14.95
32	17.65	7	14.76
31	17.53	6	14.59
30	17.44	5	14.32
29	17.30	4	14.13
28	17.21	3	13.87
27	17.12	2	12.81
26	17.08	1	12.42
-	-	0	10.14

Table. 1.02 shows the 100<sup>th</sup> to 0<sup>th</sup> Percentile Values of Body Mass Index (kg/m<sup>2</sup>) of 13 year old girls studying in Delhi Schools.

**TABLE 1.03**  
**Percentile Values of Body Mass Index (kg/m<sup>2</sup>) of 14 year old girls studying in Delhi Schools**

Percentile	Body Mass Index	Percentile	Body Mass Index
100	37.31	75	23.37
99	33.30	74	23.16
98	31.33	73	23.05
97	30.17	72	22.93
96	29.28	71	22.75
95	28.71	70	22.67
94	28.37	69	22.58
93	27.88	68	22.39
92	27.56	67	22.33
91	27.21	66	22.12
90	27.02	65	22.03
89	26.50	64	21.89
88	26.24	63	21.71
87	25.89	62	21.59
86	25.72	61	21.49
85	25.54	60	21.33
84	25.29	59	21.13
83	25.01	58	21.03
82	24.82	57	20.89
81	24.62	56	20.76
80	24.44	55	20.65
79	24.21	54	20.57
78	24.05	53	20.45
77	23.85	52	20.30
76	23.69	51	20.20

Percentile	Body Mass Index	Percentile	Body Mass Index
50	20.17	25	17.50
49	20.08	24	17.37
48	19.87	23	17.26

47	19.77	22	17.09
46	19.59	21	17.02
45	19.48	20	16.92
44	19.39	19	16.75
43	19.28	18	16.68
42	19.22	17	16.61
41	19.13	16	16.47
40	18.86	15	16.34
39	18.74	14	16.23
38	18.66	13	16.13
37	18.53	12	16.06
36	18.49	11	15.88
35	18.44	10	15.79
34	18.35	9	15.60
33	18.28	8	15.47
32	18.13	7	15.33
31	18.05	6	15.25
30	17.90	5	14.97
29	17.84	4	14.70
28	17.73	3	14.27
27	17.64	2	13.60
26	17.57	1	12.39
-	-	0	9.96

Table 1.03 shows the 100<sup>th</sup> to 0<sup>th</sup> Percentile Values of Body Mass Index (kg/m<sup>2</sup>) of 14 year old girls studying in Delhi Schools.

**TABLE 1.04**  
**Percentile Values of Body Mass Index (kg/m<sup>2</sup>) of 15 year old girls studying in Delhi Schools**

Percentile	Body Mass Index	Percentile	Body Mass Index
100	41.46	75	23.76
99	33.24	74	23.59
98	32.09	73	23.44
97	30.90	72	23.32
96	29.94	71	23.18
95	29.52	70	23.04
94	29.14	69	22.88
93	28.56	68	22.75
92	28.13	67	22.61
91	27.70	66	22.50
90	27.30	65	22.39
89	27.01	64	22.23
88	26.67	63	22.02
87	26.50	62	21.88
86	26.28	61	21.71
85	25.94	60	21.53
84	25.58	59	21.41
83	25.46	58	21.31
82	25.24	57	21.12
81	25.01	56	21.07
80	24.87	55	20.96

79	24.62	54	20.88
78	24.39	53	20.72
77	24.08	52	20.55
76	23.90	51	20.38

Percentile	Body Mass Index	Percentile	Body Mass Index
50	20.32	25	18.05
49	20.23	24	17.96
48	20.16	23	17.88
47	20.02	22	17.77
46	19.92	21	17.65
45	19.82	20	17.57
44	19.75	19	17.43
43	19.60	18	17.31
42	19.52	17	17.12
41	19.42	16	17.01
40	19.33	15	16.92
39	19.24	14	16.77
38	19.15	13	16.69
37	19.13	12	16.52
36	19.08	11	16.33
35	18.95	10	16.01
34	18.88	9	15.82
33	18.77	8	15.72
32	18.69	7	15.48
31	18.61	6	15.32
30	18.50	5	15.15
29	18.37	4	14.96
28	18.29	3	14.78
27	18.21	2	14.08
26	18.10	1	13.46
-	-	0	12.16

Table 1.04 shows the 100<sup>th</sup> to 0<sup>th</sup> Percentile Values of Body Mass Index (kg/m<sup>2</sup>) of 15 year old girls studying in Delhi Schools.

**TABLE 1.05**  
**6 Sigma Scale Values of Body Mass Index (kg/m<sup>2</sup>) of 13 year old girls studying in Delhi Schools**

6 Sigma Score	Body Mass Index
100	33.59
90	30.91
80	28.24
70	25.56
60	22.89
50	20.21
40	17.53
30	14.86
20	12.18
10	9.51
0	6.83

Mean- 20.21, Standard Deviation: 4.46

Table. 1.05 shows the 100<sup>th</sup> to 0<sup>th</sup> 6 Sigma Scale Values of Body Mass Index (kg/m<sup>2</sup>) of 13 year old girls studying in Delhi Schools.

**TABLE 1.06**  
**6 Sigma Scale Values of Body Mass Index (kg/m<sup>2</sup>) of 14 year old girls studying in Delhi Schools**

6 Sigma Score	Body Mass Index
100	33.91
90	31.28
80	28.64
70	26.01
60	23.37
50	20.74
40	18.11
30	15.47
20	12.84
10	10.20
0	7.57

Mean- 20.74, Standard Deviation: 4.39

Table. 1.06 shows the 100<sup>th</sup> to 0<sup>th</sup> 6 Sigma Scale Values of Body Mass Index (kg/m<sup>2</sup>) of 14 year old girls studying in Delhi Schools.

**TABLE 1.07**  
**6 Sigma Scale Values of Body Mass Index (kg/m<sup>2</sup>) of 15 year old girls studying in Delhi Schools**

6 Sigma Score	Body Mass Index
100	34.47
90	31.81
80	29.15
70	26.50
60	23.84
50	21.18
40	18.52
30	15.86
20	13.21
10	10.55
0	7.89

Mean- 21.18, Standard Deviation: 4.43

Table. 1.07 shows the 100<sup>th</sup> to 0<sup>th</sup> 6 Sigma Scale Values of Body Mass Index (kg/m<sup>2</sup>) of 15 year old girls studying in Delhi Schools.

**TABLE 1.08**  
**Norms under Percentile Scale of Body Mass Index (kg/m<sup>2</sup>) of girls aged 13, 14 and 15 years studying in Delhi schools**

Age	Obese	Over Weight	Normal Weight	Under Weight
13 Years	>24	23-24	16-22	□ 16
14 Years	>25	24-25	17-23	□ 17
15 Years	>25	24-25	18-23	□ 18

Table 1.08 shows that the norms based on the percentile scale, body mass index of girls aged 13, 14 and 15 years studying in Delhi schools has been

divided into four categories namely obese, overweight, normal weight and underweight. Below 16, 16-22, 23-24 and above 24 body mass

index are considered as obese, overweight, normal weight and underweight respectively for girls aged 13 years studying in Delhi schools. Similarly, below 17, 17-23, 24-25 and above 25 body mass index are considered as obese, overweight, normal weight and underweight respectively for girls aged 14 years studying in Delhi schools. While, below 18, 18-23, 24-25 and above 25 body mass index are considered as obese, overweight, normal weight and underweight respectively for girls aged 15 years studying in Delhi schools.

### **CONCLUSIONS**

Based on the findings and within the limitations of this study, the following conclusions were drawn:

1. The normative scales namely the Percentile Scales and 6 Sigma Scales were prepared for girls aged 13, 14 and 15 years studying in Delhi Schools.

2. The norms based on the percentile scale for body mass index of girls aged 13, 14 and 15 years studying in Delhi schools has been divided into four categories namely obese, overweight, normal weight and underweight. Below 16, 16-22, 23-24 and above 24 body mass index are considered as obese, overweight, normal weight and underweight respectively for girls aged 13 years studying in Delhi schools. Similarly, below 17, 17-23, 24-25 and above 25 body mass index are considered as obese, overweight, normal weight and underweight respectively for girls aged 14 years studying in Delhi schools. While, below 18, 18-23, 24-25 and above 25 body mass index are considered as obese, overweight, normal weight and underweight respectively for girls aged 15 years studying in Delhi schools.

### **BIBLIOGRAPHY**

1. Bouchard, C., & et. al. (1994), Physical Activity, Fitness, and Health: International Proceedings and Consensus Statement, Champaign, IL, Human Kinetics Publishers,.
2. Dencker, M., Thorsson, and et al (2006). Daily Physical Activity and its Relation to Aerobic Fitness in Children Aged 8-11 years. Scand. J. Med. Sci. Sports., 96: 587-592
3. Donetallo, Rebeka J., (2005). Health, The Basics. San Francisco; Pearson education; Inc .
4. Elizabeth, Quinn, (2012) About.com Guide.
5. Golding, L.A., and et.al., (1989) The Y's Way to Physical Fitness (3<sup>rd</sup> Edition)", Champaign, IL: Human Kinetics Publishers,.
6. Grund, and et. al., (2001). Is TV viewing an intake of physical activity and fitness in overweight and normal weight children? Public Health Nutrition., 4: 1245-1251.
7. Gupta, Rakesh and Bedi, M.M.S, (2003) Research Process and Studies in Physical Education & Sports Sciences, Friends Publications (India), New Delhi. (2003)
8. Gupta, Rakesh. Curricullum Design (Friends Textbook Series EC 302), Friends Publications. (India) New Delhi, 2018
9. Gupta, Rakesh. Education Technology in Physical Education and Sports (Friends Textbook Series MPEC 402), Friends Publications (India) New Delhi, 2018.
10. Howley, E., and Franks, B. (2003). Health Fitness Instructor's Handbook (4th Edition) Champaign, IL: Human Kinetics
11. Jennifer, R. Scott, (2008) Former About.Com.
12. Kansal, Devinder K., (2012) A PRACTICAL APPROACH TO TEST, MEASUREMENT AND EVALUATION, SSS publications (New Delhi)
13. Ortega, F.B., and et. al., (2008). Physical Fitness in Childhood and Adolescence: a powerful marker of health. Int. J. Obes, 32: 1-11.
14. Powell K.E. and et al., (1988). Physical Activity and Chronic Disease. Am. J. Clin., Nutr. 49: 999-1006

## EFFECT OF BRISK WALKING AND TREADMILL WALKING ON SELECTED PHYSIOLOGICAL VARIABLES OF MIDDLE AGED MEN

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### ABSTRACT

The study was conducted the effect of brisk walking treadmill walking on selected physiological variables of middle aged men. The participant group consists of 45 middle aged men (age 35 to 45 years) were selected from Master Senior citizen Yavatmal (M.S.) Prior to the administration of test the investigator held six sessions meeting with the subjects. Before the commencement of the training programme the investigator explained to the subjects the purpose of the study and their role in the investigation. A period of two weeks was utilized to select and teach method of walking and style for group 'A' brisk walks and for group 'B' treadmill walking. Control group was not exposed to any of the orientation regarding training. Group A, B & C subjects were motivated to perform well and the recording of measurements were made known to the subjects with a view to familiarizing them about their performance. Conclusions are drawn based on the purpose of the study. Brisk walking and treadmill walking groups were found to be significant than control group on physiological variables namely BMI, pulse rate, systolic blood pressure, diastolic blood pressure at 0.05 level of confidence Brisk walking and control groups were not found significant while treadmill walking and control groups were found significant on haemoglobin. Hence treadmill walking group have the better significant on haemoglobin in. Brisk walking and treadmill walking groups were found to be significant.

**Keywords:** BMI (Body Mass Index). Pulse rate. Systolic blood pressure Diastolic blood pressure. Haemoglobin. Brisk walking. Treadmill walking

### INTRODUCTION

Physical exercises are to be performed in many forms like running, dancing, playing games, weight training, recreational games, yoga asanas and walking. The kind and type of exercises alone do not influence the kind of biological adaptations in the human body. The load dynamics like density and intensity of exercises may target for different kind of biological adaptations in the human body. To our knowledge no perceptive study has been reported to treat metabolic related problems. In the current study the scholar examined the metabolic benefits through the different types of walking on middle aged men. The exercise program should be in proper intensity, density and alignment of body according to the individual need and health benefits. Walking is the mostly used simple activity to any people. It requires no special skills or facilities without major risk of injury. The favourable effects of walking on both physiological and psychological wellbeing are firmly established. There commended quantity and quality of walking exercises can be developing and maintaining cardio respiratory and muscular fitness and flexibility in health adults. recent day, busy individual attracted with offering benefits with minimum investment of time. Walking can be

considered the preferred exercise for primary education because it provides both endurance and balance. It is the primary performance on which many activities of daily living depend upon walking has been shown to have significant benefits and minimal associated risks. As long as there are no contra indications, the benefits of walking almost certainly out weight the risk in the majority of people with diabetes.

### METHODOLOGY

#### SELECTION OF SUBJECTS

In the present study forty five middle aged men were selected from Master citizen group Yavatmal (M.S.) Their age ranged from 35 to 45 years. The subjects were divided into three groups of fifteen subjects each at purposively Group A and Group B considered as experimental groups and Group C considered as control group. Both experimental Group A and B underwent brisk walking and treadmill walking for twelve weeks training program. Group C acted as Control group and they did not undergo any training programme. All the subjects were directed to seek their willingness to act as subjects. The investigator explained to them the purpose, nature and importance of the training programme and the testing procedure in detail. The



physical conditions of the subjects were assessed by a qualified medical practitioner and all the subjects were healthy and normal. They were requested to co-operate and participate actively for the same.

### SELECTION OF VARIABLES

In the present study the investigator referred different relevant literature and consulted with experts in physiology and to identify most suitable variables. The variables selected are furnished below. BMI (Body Mass Index), Pulse rate, Systolic blood pressure, Diastolic blood pressure, Haemoglobin

### EXPERIMENTAL DESIGN

The forty five subjects were selected for the present study by using purposive sampling technique and they were divided into three equal group two experimental groups and control group. Twelve weeks of brisk walking and treadmill walking training were given to the experimental groups. The control group was not allowed to participate in any of the training programmes except their routine work. Measurements for the variables were taken at the beginning (pre - test) and at the end of the experimental period after twelve weeks (post - test). The data were collected of all the variables for both control and experimental groups.

### TRAINING PROGRAM

Based on the pilot study the training schedule for experimental group 'A' 'B' was programmed for twelve weeks. During the training programme the experimental groups underwent their respective training programme for six days per week for 12 weeks. Group 'A' underwent brisk walking, Group 'B' underwent treadmill walking. The intensity of experimental groups was fixed 50-70% function of heart rate. The study consists of a pre test and post test. The post test was conducted after a period of twelve weeks of exercises programme. The training was given from 6 to 7.30 AM on six days. The programme included warm up and warm down. The intensity of the programme was increased by every month. All participants were advised to eat a healthy diet and not to restrict their calories.

### ANALYSIS OF DATA

The differences were found to be significant by the analysis of covariance it was concluded with the Scheffe's post hoc test on selected variables. The

data were obtained from the subjects were analyzed statistically by the application of analysis of covariance (ANCOVA) at 0.05 level of significance.

**Table** -I

#### ANALYSIS OF COVARIANCE FOR BODY MASS INDEX ON BRISK WALKING, TREADMILL WALKING AND CONTROL GROUPS OF MIDDLE AGED MEN

	Control Group	Brisk Walking Group	Treadmill Walking Group	SOV	SS	df	M.Sq.	'F'Ratio	Sig
Pre Test Mean	26.46	26.58	26.59	BW	0.16 165. 35	0 2 4 2	0.08 3.94	0.02	0.9 80
S.D.	1.89	1.86	2.18						
Post Test Mean	26.42	25.38	25.14	BW	13.8 6 91.5 6	0 2 4 2	6.93 2.18	3.28*	0.0 48
S.D.	1.89	1.31	1.12						
Adjusted Post Test Mean	26.47	25.36	25.11	BW	15.6 5 31.3 5	0 2 4 1	7.83 0.76	10.24*	0.0 00

\*Significant at 0.05 level

The value for df 2, 42 at 0.05 level =3.21, The value for df 2, 41 at 0.05 level =3.21

#### Table - I SCHEFFE'S POST-HOC TEST FOR PAIRED MEAN DIFFERENCE AMONG THE GROUPS FOR BODY MASS INDEX

Control Group	Brisk Waling Group	Walking Group	Difference	CI
26.47	25.36.		1.11*	0.80
26.47		25.11	1.36*	
	25.36	25.11	0.25	

\*Significant at 0.05 level, Scheffe's CI value 0.05 Level=0.80

Scheffe's Post hoc test showed that there is significant difference between brisk walking and treadmill walking with mean difference of 1.1 and 1.36 respectively when compared with control group. There is no significant difference between brisk walking and treadmill walking groups with mean difference 0.25 as the value is lesser than the CI value 0.80.

**Table – II**  
**ANALYSIS OF COVARIANCE FOR PULSE RATE ON BRISK WALKING, TREADMILL WALKING AND CONTROL GROUPS OF MIDDLE AGED MEN**

	Control Group	Brisk Walking Group	Trade mill Walking Group	SO V	SS	df	M.S q.	'F'Ratio	Sig
Pre Test Mean	79.09	78.93	78.00	B W	10.13 1981. 187	0 2 4 2	5.07 47.1	0.10	0.898
S.D.	7.13	7.27	6.15						
Post Test Mean	78.73	73.40	73.67	B W	270.9 3 1721. 87	0 2 4 2	135. 47 40.9 8	3.30*	0.46
S.D.	7.20	6.07	5.85						
Adjusted Post Test Mean	78.39	73.13	74.23	B W	228.2 1 293.2 3	0 2 4 1	114. 10 7.15	57.95*	0.000

\*Significant at 0.05 level  
 The value for df 2, 42 at 0.05 level =3.21, The value for df 2, 41 at 0.05 level=3.21

**Table - II**  
**SCHEFFES POST-HOC TEST FOR PAIRED MEAN DIFFERENCE AMONG THE GROUPS FOR PULSE RATE**

Control Group	Brisk Waling Group	Walking Group	Difference	CI
78.39	73.17		5.22*	2.46
78.39		74.23	4.16*	
	73.17	74.23	1.06*	

\*Significant at 0.05 level, Scheffe's CI value, 0.05 Level=2.46

Scheffe's Post hoc test showed that there is significant difference between brisk walking and treadmill walking with mean difference of 5.22 and 4.16 respectively when compared with control group. There is no significant difference between brisk walking and treadmill walking groups with mean difference 0.25 as the value is lesser than the CI value 2.46.

**Table – III**  
**ANALYSIS OF COVARIANCE FOR SYSTOLIC BLOOD PRESSURE ON BRISK WALKING, TREADMILL WALKING AND CONTROL GROUPS OF MIDDLE AGED MEN**

	Control Group	Brisk Walking Group	Trade mill Walking Group	SO V	SS	df	M.S q.	'F'Ratio	Sig
Pre Test Mean	129.87	129.53	128.00	B W	29.73 3 4429. 47	0 2 4 2	14.8 7 105. 63	0.14	0.869
S.D.	9.66	8.10	12.54						

Post Test Mean	127.00	121.33	122.67	B W	263.3 3 1356. 67	0 2 4 2	131. 68 32.3 0	4.07*	0.24
S.D.	7.97	2.29	5.30						
Adjusted Post Test Mean	127.00	121.33	122.67	B W	235.7 3 618.4 1	0 2 4 1	117. 87 15.0 8	7.81*	0.001

\*Significant at 0.05 level  
 The value for df 2, 42 at 0.05 level =3.21, The value for df 2, 41 at 0.05 level =3.21

**Table – III**  
**SCHEFFE'S POST HOC TEST FOR PAIRED MEAN DIFFERENCE AMONG THE GROUPS FOR SYSTOLIC BLOOD PRESSURE**

Control Group	Brisk Waling Group	Walking Group	Difference	CI
127.00	121.33		5.67*	3.57
127.00		122.67	4.33*	
	121.33	122.67	1.34	

\*Significant at 0.05 level, Scheffe's CI value, 0.05 Level=3.57

Scheffe's Post hoc test showed that there is significant difference between brisk walking and treadmill walking with mean difference of 5.67 and 4.33 respectively when compared with control group. There is no significant difference between brisk walking and treadmill walking groups with mean difference 1.34 as the value is lesser than the CI value 3.57.

**Table –IV**  
**ANALYSIS OF COVARIANCE FOR DIASTOLIC BLOOD PRESSURE ON BRISK WALKING, TREADMILL WALKING AND CONTROL GROUPS OF MIDDLE AGED MEN**

	Control Group	Brisk Walking Group	Trade mill Walking Group	SO V	SS	df	M.S q.	'F'Ratio	Sig
Pre Test Mean	85.67	85.60	84.53	B W	12.1 3 972. 67	0 2 4 2	6.06 23.1 6	0.26	0.771
S.D.	4.25	5.09	5.04						
Post Test Mean	84.00	80.33	79.00	B W	201. 11 535. 33	0 2 4 2	100. 56 12.7 4	7.89*	0.001
S.D.	3.29	2.97	4.30						
Adjusted Post Test Mean	83.84	80.20	79.30	B W	172. 18 373. 29	0 2 4 1	86.0 9 9.10	9.45*	0.000

\*Significant at 0.05 level  
 The value for df 2, 42 at 0.05 level =3.21, The value for df 2, 41 at 0.05 level =3.21

**Table – IV**

**SCHEFFE'S POST-HOC TEST FOR PAIRED MEAN DIFFERENCE AMONG THE GROUPS DIASTOLIC BLOOD PRESSURE**

Control Group	Brisk Waling Group	Walking Group	Difference	CI
83.84	80.20		3.64*	2.77
83.84		79.30	4.54*	
	80.20	79.30	0.9	

\*Significant at 0.05 level, Scheffe's CI value, 0.05 Level=2.77

Scheffe's Post hoc test showed that there is significant difference between brisk walking and treadmill walking with mean difference of 3.64 and 4.54 respectively when compared with control group. There is no significant difference between brisk walking and treadmill walking groups with mean difference 0.9 as the value is lesser than the table value 2.77.

**Table – V  
 ANALYSIS OF COVARIANCE FOR HEMOGLOBIN CONTENT ON BRISK WALKING, TREADMILL WALKING AND CONTROL GROUPS OF MIDDLE AGED MEN**

	Cont rol Grou p	Brisc k Walki ng Grou p	Trade mill Walkin g Group	SO V	SS	d f	M.S q.	*F'Ra tio	Sig
Pre Test Mean	14.59	14.70	14.74	B W	0.189.67	0242	0.090.23	0.40	0.67
S.D.	0.62	0.24	0.50						
Post Test Mean	14.75	15.11	15.39	B W	3.0812.47	0242	1.540.30	5.19*	0.010
S.D.	0.790	0.33	0.39						
Adjus ted Post Test Mean	14.78	15.10	15.36	B W	2.5011.07	0241	1.250.27	4.64*	0.15

**Table – V  
 SCHEFFE'S POST-HOC TEST FOR PAIRED MEAN DIFFERENCE AMONG THE GROUPS FOR HEMOGLOBIN**

Control Group	Brisk Waling Group	Walking Group	Difference	CI
14.78	15.10		0.32	0.44
14.78		15.36	0.58*	
	15.10	15.36	0.26	

\*Significant at 0.05 level, Scheffe's CI value, 0.05 Level=0.44

Scheffe's Post hoc test showed that there is no significant difference between control group and brisk walking with mean difference 0.32. While there is significant difference between control group and treadmill walking with mean difference 0.58. Also there is no significant difference between treadmill walking groups and brisk walking group with mean difference 0.25 as the value is lesser than the CI value 0.44.

**DISCUSSION ON FINDINGS**

Aerobic exercise is an activity that can do in prolonged period to increase energy in the body. In the other word,. Physical activity is a great way to burn off stream and help to decrease the cholesterol level in the blood. As walking is a 'lifestyle' activity it may more easily circumvent frequently cited barriers to exercise, (Zunft HF, 1999), than other forms of exercise. It is equally clear that low-intensity activity is sufficient to reduce the risk of coronary artery disease (Krishna Murali M., 2011).

The result revealed that both experimental groups were significantly improved when compared to control group. Some previous studies have shown that systolic and diastolic blood pressure decreased after aerobic exercise. (Wheaton, 2002; Sohn, 2007; Gordon, 1997; Ghai, 2007). Systolic blood pressure falls due to decreased sympathetic discharge after walking programe and decrease in diastolic blood pressure after exercise. It might be caused to decrease in peripheral resistance by producing vaso-dilatation through accumulation of metabolites like carbon dioxide and hydrogen ion. (Tiwari Sushma, 2011). Murphy, et al., (2007), Murtagh et al., (2010), Bravata (2007) and Kaukab Azeem, (2011), found that regular walking about 30 minutes can decrease body weight, BMI, body fat percentage and resting systolic and diastolic blood pressure for sedentary adults. **Pulse rate** vary from person to person. Pulse is lower when individuals are at rest and increase when exercise (because more oxygen-rich blood is needed by the body when an individual exercise). As activity level decreases, vasopressin agents that increase heart rate are decreased in a reverse feedback loop of blood pressure homeostasis. Also the heart rate partly depends on starling's law, which indicates that the more volume of blood enters the heart, the more will be pumped out. With a lower blood return after exercise, the heart responds by beating both slowly and also with less force per beat. Other study had shown the decrease sympathetic stress after exercise intervention causes decrease in pulse rate.

The following studies were supported the findings of the current study.

### **DISCUSSION ON HYPOTHESES**

The first hypothesis states that there would not be a significant difference among brisk walking, treadmill walking and control group of middle aged men on selected physiological variables. The results reveals that the selected variables body mass index, pulse rate, systolic blood pressure, and diastolic blood pressure, were significantly improved positively due to the 12 weeks of walking training at 0.05 level of confidence. Hence hypothesis was rejected and null hypothesis was accepted at 0.05 level of confidence.

### **CONCLUSIONS**

The following conclusions are drawn based on the purpose of the study. Brisk walking and treadmill walking groups were found to be significant than control group on physiological variables namely BMI, pulse rate, systolic blood pressure, diastolic blood pressure at 0.05 level of confidence. Brisk walking and control groups were not found significant while treadmill walking and control groups were found significant on haemoglobin. Hence treadmill walking group have the better significant on haemoglobin

### **REFERENCES**

1. Atul Gupta (2010). *Health and Physical Education*. Text book for class XII. P.11
2. Ghai C.L. (2007) *A textbook of practical physiology*, 17th Edition. Jaypee Brothers medical publishers (p) LTD, New Delhi, 152-153
3. Mahaboojan, A. (2010). *Body Dynamic*. Friends of Publications .India: Publisher of
4. Books on Physical Education and Sports Sciences. ISBN- 978-81-7216-326-6
5. Borg, P. Kukkonen Harjula, K. Fogelholm, M. Pasanen , M. (2002). Effects of walking or resistance training on weight loss maintenance in obese, middle aged men: a randomized trial. *International journal of obesity & Related metabolic Disorders*. 26, (5) 678 p8.
6. Kaukab Azeem (2011). Effect of twelve weeks brisk walking on blood pressure, body mass index, and anthropometric circumference of obese males. *International Science Index*, Vol:5, no:11-27
7. Sushma, Tiwani, Gehlot Sangeeta, Tiwari, S. K. Singh Grish. (2011). Effect of isotonic exercise walking on various physiological parameters in hypertension. *Journal of stress Physiology & Biochemistry*, 7, (3). 123 -131.
8. Capodagil palolo, Desouza Shriley, Parisio Cinzia, Viamara Luca, Cimolin Veronica, Brunani Amelia, (2013). Reference values for the 6-Min Walking Test in obese subjects.
9. Cottin Francois., Slawinski Jean., Lopes Philippe., Vandelouw Andry., Billat Veronique. (2007). Effect of a 24-H Continuous Walking Race on Cardiac Autonomic Control. *European Journal Of Applied Physiolog.* 99, (3). 245; 250.
10. Delestrat, A., Mathew,D., Cohen, D. D., Brisswalter. J. (2011). Effect of stride frequency on the energy cost of walking in obese teenagers. *Human movement Science*, 30, (1). 115-124.
11. *Disability & Rehabilitation* 35, (14). 1199-1203 P5.

## **TECHNOLOGY IN SPORT: BENEFITS OF ADVANCED SPORTING TECHNOLOGIES**

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### **ABSTRACT**

*Sporting technologies are man-made means (methods), developed to reach human interests or goals in or relating to a particular sport. Technology in sports is a technical means by which athletes attempt to improve their training and competitive surroundings in order to enhance their overall athletic performance.' In other words technology is used by performers, coaches and officials to try to improve performance; it is used to enhance the experience of spectators; it can be used to improve a sport.*

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**Keywords:** Technology, Sports

### **INTRODUCTION**

Technology plays an important part in modern sports. With it being a necessary part of some sports (such as motorsport), it is used in others to improve performance. Some sports also use it to allow off-field decision making. Sports science is a widespread academic discipline, and can be applied to areas including athlete performance, such as the use of video analysis to fine-tune technique, or to equipment, such as improved running shoes or competitive swim wear. Sports engineering emerged as a discipline in 1998 with an increasing focus not just on materials design but also the use of technology in sport, from analytics and big data to wearable technology. In order to control the impact of technology on fair play, governing bodies frequently have specific rules that are set to control the impact of technical advantage between participants. For example, in 2010, full-body, non-textile swimsuits were banned by FINA, as they were enhancing swimmers' performances.

The increase in technology has also allowed many decisions in sports matches to be taken, or reviewed, off-field, with another official using instant replays to make decisions. In some sports, players can now challenge decisions made by officials. In football, Goal-line technology makes decisions on whether a ball has crossed the goal line or not. The technology is not compulsory, but was used in the 2014 FIFA World Cup in Brazil, and the 2015 FIFA Women's World Cup in Canada, as well as in the Premier League from 2013–14, and the Bundesliga from 2015–16. In the NFL, a referee can ask for a review from the replay booth,

or a head coach can issue a challenge to review the play using replays. The final decision rests with the referee. A video referee (commonly known as a Television Match Official or TMO) can also use replays to help decision-making in rugby (both league and union). In international cricket, an umpire can ask the Third umpire for a decision, and the third umpire makes the final decision. Since 2008, a decision review system for players to review decisions has been introduced and used in ICC-run tournaments, and optionally in other matches. Depending on the host broadcaster, a number of different technologies are used during an umpire or player review, including instant replays, Hawk-Eye, Hot Spot and Real Time Snickometer. Hawk-Eye is also used in tennis to challenge umpiring decisions.

Technology in Sport:

Advances in technology have had a profound impact on sport including:

- Analysis of sport performance and enabling coaches to greatly improve the quality of feedback to players/athletes
- Increase accuracy in time measurements of sport performance
- Enabling referees, umpires and sport officials to make better decisions on rule infringements
- Improvements in the design of sport equipment and apparel
- Providing spectators with better viewing of sport performance

The video camera became commonplace in the 1980's and provided sports coaches with a way to capture and analyze sport performance like never before. The video camera is perhaps the single

most important development in coaching in the modern era of sport.

Electronic timing controlled by computers is employed to measure performance times of athletes in a great many sports including Athletics, Cycling, Skiing, Bobsled, Triathlon and many more. In the case of Athletics, the electronic timing also measures the athlete's reaction time to the start gun in case the athlete moves too early in the blocks.

The Force Platform is an apparatus placed under the feet of the athlete and measures their 'ground reaction force'. This is useful in sports such as Weightlifting and enables measurement of force and acceleration throughout the athlete's performance of a lift. Curiously, the measurement of force is due to the miniscule change in properties of crystals upon which the platform rests.

Hawkeye, a computer system first used in 2001 for showing the trajectory of a cricket ball has made an immeasurable difference to the sport of Cricket. Hawkeye produces all manner of statistical analysis such as ball speed, ball pitch on the wicket and trajectory of the ball after bounce. Hawkeye is now used in Tennis to assist in determining whether a shot is "in" or "out". The analysis of sport performance provided by Hawkeye has greatly enhanced the spectator's knowledge and involvement.

As a result of miniaturized video cameras, spectators are also now able to witness sport performance in ways that previously was not possible. Video cameras can be placed in places such as racing cars, cricket stumps, goal posts, and even on the athlete themselves.

Sporting equipment continually undergoing research and development to improve sporting performance. Some of the best examples include:

- Fully body swim wear, made of polyurethane and made a huge impact in the 2008 Olympics only to be banned a year later because it was too obviously making a difference to sporting performance.
- Kevlar fiber (5 times stronger than steel yet lighter, used in the manufacture of sails, bicycle tires, football boots, tennis rackets, helmets, body armor and more.
- Raving cycles and rowing shells made of lightweight but strong materials, and minimize drag through the air or water.

Some people decry the use of technology to improve sports performance but in reality it is inevitable. The research and development of sport apparatus and apparel is an industry in itself which creates opportunity for investment and employment.

### **What are the benefits of advanced sporting technologies?**

Recent developments in sporting technologies have created a variety of products aimed at improving and increasing athletic performance. The health and well-being of performers can be maintained and observed, and injuries treated, through the production of technologies such as heart rate monitors, pedometers and body-fat monitors. The use of these has given individuals greater knowledge of the body and its ability to absorb exercise, which in turn has allowed athletes to train and compete in sports to a much older age. The safety of those involved has also be helped through the development of certain sporting equipment, such as helmets and body protection which are used for example in cricket and hockey to help prevent injuries. Modern sporting technologies have also made officiating easier and more accurate, and spectator interest and excitement is enhanced by broadcasting and in-stadium displays or scoreboards.

How can technology be used to enhance athletic performance?

Sports equipment such as clothing and footwear needs to be user-friendly and include valuable properties such as strength, flexibility, toughness, resistance to moisture and more importantly cost. Footwear is generally chosen more for comfort (fashion?) and injury avoidance rather than performance enhancement, whereas clothing such as the full body suits used in cycling may be justified in activities where winning or losing is measured in hundredths of a second. Sporting equipment such as the composite tennis racket has been created in order to provide increased ball speed, and reduce the potential for injuries at the elbow joint. In golf, the overall mass of the club has decreased which is believed to result in a greater achievable distance and possibly a more accurate shot.

Prosthetics have also been made for those athletes with a specific disability. Examples include the prosthetics worn by those athletes without a lower limb, which acts with a 'springboard' effect where with each step the device returns energy and

permits running gait. The reduced mass of the device makes it firm yet supple for sprinters, and provides some shock absorbing properties for marathon runners. Wheelchair devices used in sporting activities have also become more sophisticated, for example, with sharply slanted back wheels in tennis to allow the player to move swiftly across the court from side to side.

Nutrition and Fitness are probably the most important features which can affect an athlete's performance in sport. Technology such as software programs are being used to monitor and analyze an athlete's nutrition and fitness levels in much more accurate ways than previously.

How can technology be used to analyze athletic performance?

Technologies such as 'smart' equipment can be used to measure performance. These include devices used for exercise stress testing and cardiovascular assessment, human reaction time and frequency of movement meters, and devices such as force platforms that measure the characteristics of jumping and running. More modern technologies such as motion capture analysis are also used to analyze performance. This involves digitally recording on cameras, the movements of athletes during sporting activities which can then be used for evaluation by the performer and/or their coach, or for enhanced spectator entertainment.

What are the ethical considerations surrounding the use of technology in sports?

The use of modern technologies in sport may mean that competition at the highest level is only available to those athletes/countries who can afford/supply it. In those sports involving individuals with a particular disability, there are different ways in which assistance can be given. For example, modifications to buildings can be made to make them wheelchair accessible, specialized equipment can also be produced and training given to provide specific assistance to those with a disability. Technology can also be detrimental with such things as the development of ergogenic aids, especially where cost is an important factor. This could mean that only the wealthier performers/countries have access to the highest quality equipment.

### **CONCLUSION**

Technology in its many forms is shaping the way we all engage, consume and participate in sport. The use of technology in sport is extensive today. Some thematic applications include coaching and competition analysis, clothing and wearable's, science and human performance, media broadcasting and communications, entertainment, e-sports, business and digital transformation, and sporting facility planning and use.

### **REFERENCES**

1. Council of Europe. "The European sport charter". Retrieved 5 March 2012.
2. List of Summer and Winter Olympic Sports and Events". The Olympic Movement. "World Mind Games". SportAccord. Archived from the original on 8 May 2012.
3. Women in sport: Game, sex and match". The Economist. 7 September 2013.
4. Finn, Adharanand (2012). Running with the Kenyans. p. chapter 2.
5. Mangan, J A (2014). Sport in Latin American Society: Past and Present. p. 93.
6. Harper, Douglas. "sport (n.)". Online Etymological Dictionary. Retrieved 20 April 2008.
7. Webster's Third New International Dictionary of the English Language, Unabridged. Springfield, MA: G&C Merriam Company. 1967. p. 2206.
8. Grasso, John (2013). Historical Dictionary of Boxing. Retrieved 13 June 2015.
9. Fulton, Gareth; Bairner, Alan (2007). "Sport, Space and National Identity in Ireland: The GAA, Croke Park and Rule 42". Space & policy. 11 (1): 55–74.
10. Tyler Cowen; Kevin Grier (24 October 2012). "Will Ohio State's Football Team Decide Who Wins the White House?". Slate. Retrieved 29 December 2013.
11. Mike Jones (3 November 2012). "Will Redskins Rule again determine outcome of presidential election?". The Washington Post.
12. Council of Europe, Revised European Sports Charter (2001).
13. Front, Rebecca (17 July 2011). "A little competition". The Guardian.
14. Ahmed D. Touny (EGY), IOC Member". Archived from the original on 29 October 2006.

## **USES OF COMPUTERS IN SPORTS ERA**

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### **ABSTRACT**

*Today, very few jobs do not use a computer in some form or fashion. While sports are mainly a physically demanding profession, they too use computers each and every day. The devices are used in a variety of ways to help push sporting organizations towards their goal of success.*

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**Keywords:** *Comuter, sports, vidios.*

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### **INTRODUCTION**

A computer is a device that can be instructed to carry out arbitrary sequences of arithmetic or logical operations automatically. The ability of computers to follow generalized sets of operations, called programs, enables them to perform an extremely wide range of tasks. Such computers are used as control systems for a very wide variety of industrial and consumer devices. This includes simple special purpose devices like microwave ovens and remote controls, factory devices such as industrial robots and computer assisted design, but also in general purpose devices like personal computers and mobile devices such as smart phones. The Internet is run on computers and it connects millions of other computers. Since ancient times, simple manual devices like the abacus aided people in doing calculations. Early in the Industrial Revolution, some mechanical devices were built to automate long tedious tasks, such as guiding patterns for looms. More sophisticated electrical machines did specialized analog calculations in the early 20th century. The first digital electronic calculating machines were developed during World War II. The speed, power, and versatility of computers have increased continuously and dramatically since then.

### **Uses of Computers in Sports Era:**

#### **Storing and Watching Video:**

Video preparation is a major component of professional sports. Many athletes review game tape to study someone's performance at critical parts of a competition. A boxer can review his next opponent's fights to learn weaknesses to exploit, or a football coach can review game tape to see how to improve his offense's passing attack. Computers also allow sports professionals to store a large amount of video footage in one place. Rather than having multiple discs or cassettes of film, the same information can be stored on a single jump drive or laptop. Easier access to these videos is another benefit of using computers in sports.

#### **Statistical Data Storage:**

Statistics are an important part of sports. Fans, sports agents, coaches, and players all want to know exactly how well they performed at any given moment. Keeping track of that data is another way that computers can be used in sports. For example, a team manager can create a spreadsheet database that holds all the current stats for his team throughout the season. At the end of the year that information can be used to decide which players the team will keep during contract negotiations and who has become expendable. Sports media outlets can also use computer applications in the same manner when developing in-depth stories about the performance of specific players and teams.

#### **Equipment Development:**



Safety is an important aspect in professional sports today. News stories are often released about the study of concussions on football and hockey athletes. To help minimize those injuries equipment developers have used computers to develop safer equipment. For example, helmet company Riddell designed a new football helmet for the National Football League during the 2010 season after a number of players were injured by concussions. They used a variety of technological programs to design a helmet that would be able to absorb the constant impact and limit damage to the head and neck area. The same type of research is being done for such

sports as hockey and auto racing to better improve the safety of the athletes.

#### **Sports Media:**

Sports media outlets use computers everyday in their jobs. Writers use computers to complete research on their stories, while video editors use various applications to create vignettes and film pieces about their subjects. Larger sports media outlets such as ESPN have used computer technology to create applications such as their "ESPN Axis" field view. This program rotates the field of view at any moment to give a different visual perception of the action at the time. Computers play a major part in how well media outlets cover their respective sports.

### **REFERENCES**

1. Fuegi, J.; Francis, J. (2003). "Lovelace & Babbage and the creation of the 1843 'notes'". IEEE Annals of the History of Computing. 25 (4). doi:10.1109/MAHC.2003.1253887.
2. Kempf, Karl (1961). "Historical Monograph: Electronic Computers within the Ordnance Corps". Aberdeen Proving Ground (United States Army).
3. Shannon, Claude Elwood (1940). "A symbolic analysis of relay and switching circuits". Massachusetts Institute of Technology. hdl:1721.1/11173.
4. Verma, G.; Mielke, N. (1988). "Reliability performance of ETOX based flash memories". IEEE International Reliability Physics Symposium.
5. Swade, Doron D. (February 1993). "Redeeming Charles Babbage's Mechanical Computer". Scientific American. 268 (2): 89. JSTOR 24941379.
6. Meuer, Hans; Strohmaier, Erich; Simon, Horst; Dongarra, Jack (13 November 2006). "Architectures Share over Time". TOP500. Archived from the original on 20 February 2007. Retrieved 27 November 2006.
7. Lavington, Simon (1998). A History of Manchester Computers (2 Ed.). Swindon: The British Computer Society. ISBN 978-0-902505-01-8.

## **USE OF COMPUTER-BASED TECHNOLOGY IN HEALTH, PHYSICAL EDUCATION, RECREATION AND DANCE**

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### **ABSTRACT**

*Technology impacts health, physical education, recreation, and dance educators in the areas of research, classroom teaching, and distance education. While the overall effect is not yet fully assessable, the presence of technology in so many different aspects of the profession makes it important to more clearly recognize and appreciate its current and potential role. This Digest focuses on computer-based technology as it relates to HPERD in the areas of teaching and distance education.*

**Keywords:** Computer, CD-Rom, WWW

### **INTRODUCTION**

#### **Classroom Utilization of Technology Specialized Software:**

The greatest value of computers may reside in the ability to provide improved support to classroom instruction, and the variety of software programs for such use continues to grow. Commercial and shareware programs are available to track grading, student athletic performance, and fitness; conduct health assessments; provide simulations of disease; and monitor research projects, among other functions. The development of individualized software is becoming more common. The availability of hypertext, where selected words in the text of a document can be used as links to other points in a document, has made such software development much easier.

A good example is the shareware package titled HPERD Intern (McLean & Hill, 1993), which was created to guide college students through the process of internship development and placement. Using HyperCard, commercially available application software based on a Hyper Text language, HPERD Intern integrated a number of components from traditional classroom instruction and individual counseling. HPERD Intern is a menu-based application that allows students to enter the information stream at a variety of points, rather than be forced to follow a predetermined path. This approach allows students to determine what they think is important rather than what the instructor has deemed important, reinforcing students' ability to control the learning process. The result: a reduction in the amount of classroom time and

individual counseling needed for internship preparation.

#### **Multimedia and CD-ROM:**

Computers have integrated learning with multimedia presentations. Traditional encyclopedias and reference books have been replaced by compact discs with read-only memory (CD-ROM or CD) that contain pictures, sound, and video, as well as the standard text. In the kinesiology classroom students can observe and listen to the mechanics of movement in slow motion and play over those parts they do not understand. In health education classrooms the growth of an embryo can be depicted to birth. Instructional topics remain traditional, but the delivery is nontraditional and allows the student to move at her/his own pace (Gold, 1991).

#### **Computer-Assisted Instruction:**

Computer-assisted instruction (CAI) provides students with an alternative to classroom settings and frees the instructor from rote processes that are better handled by the computer. Mohnsen (1995) identified a number of reasons for using CAI in physical education. Among them were suggestions that CAI provides students with the "why" behind health-related fitness; it provides unlimited practice, review, and remediation; students stay actively involved; and it meets a variety of student needs. CAI, if individually developed, requires considerable time on the part of the instructor, but this is compensated for by increased learning time available in the classroom. Using CAI an instructor can develop or acquire a series of supportive and reinforcing software. For example, students in a nutrition

class might participate in a CAI-based eating habits survey that provides students with information about their nutritional habits, collates data for the entire class, and provides the teacher with a report to use as a teaching tool.

### **Internet/World Wide Web:**

The expansion of the Internet (a government-sponsored electronic network) to nondefense-related uses has caused an explosion of communications. The World Wide Web (WWW) is that part of the Internet supporting graphics, audio, video, and hypertext links (the ability to connect from one computer site to another), as well as standard text. Access to the Internet, combined with the development of commercial network providers (e.g., America Online, Prodigy) has allowed individuals, schools, and organizations to communicate with each other and to share information through mechanisms such as e-mail, telnet, ftp (file transfer protocol), gopher, and WWW.

More recently, user-friendly navigator application software has become available for the WWW. Software such as NetWare, Netscape, and Mosaic have opened the Internet to a new and diverse market place. From the convenience of the classroom a student or teacher can, using a computer and a modem, log into a variety of sites throughout the world.

For example, several dozen medical schools, such as the University of Iowa and Johns Hopkins University, are now on the WWW and provide excellent information as well as videos of various human systems in operation. Students can be exposed to a video of a working heart and even create specific heart problems. Students may see a working heart with a dynamic chart that illustrates heart efficiency (amount of blood pumped per minute). By clicking on a fat-blocked heart, students watch heart efficiency drop dramatically. The students, engaged in the process now, click on the aorta to see an enlarged view a healthy and a fat-clogged aorta. Next the student clicks on the clogged aorta and receives a written or verbal description of how the heart got this way and its potential impact on the owner. Students can take notes and copy the pictures to a notebook that is built into the program and, when done, can download and print the notes.

A number of WWW sites relate to sports, fitness, health, and recreation. A home page is a starting point for exploration into a given host site's resources and connections to other sites. ERIC

maintains the Ask ERIC Virtual Library home page, which provides a gateway to ERIC information, including lesson plans and "info guides" on relevant topics. Health and recreation pages are very common. The Whole Internet Catalog offers a section on health and includes such topics as substance abuse, safer sex, mental health, and nutrition. Yahoo, organized similarly to the Whole Internet Catalog, is the source for numerous different starting points for investigation into health and recreation. The International Food Information Council Foundation is an excellent source for nutrition-related topics.

### **Local area Networks:**

The development of local area networks (LANs) allows computer users to communicate with each other without leaving their location or without the need of a telephone conversation. A LAN provides a physical link between several personal computers and a mainframe or minicomputer (White, 1993). In some instances paperless classrooms have been developed using the LAN as a communications base.

### **Computers and Satellites:**

Classrooms around the world can now be connected using technologies that include computers, interactive television, satellites, and the Internet. The linking of computer technology through the use of the Internet or CD-ROM with television transmission provides a new dimension to distance education. This technique has been used to link university professors to high school teachers, physical disabled students, and other students who are all physically distant from each other.

### **Next Steps for Incorporating Technology in Instruction:**

First, HPERD professionals need to perform an inventory of training, hardware, and software available within their own organizations. There may be many existing resources of which professionals are simply unaware. In addition, it may help to find a "techno-buddy" within the organization whom the HPERD professional can ask for help and share information about successful technology undertakings. And, finally, with the upsurge in technological competence seen in young people, professionals should welcome students' willingness to demonstrate what they know and can do with technology.

This may be an excellent opportunity for the teacher to learn from the student.

### REFERENCES

1. References identified with an EJ number have been abstracted and are in the ERIC database. Journal articles (EJ) should be available at most research libraries.
2. Gold, R. S. (1991). Microcomputer applications in health education. Dubuque, IA: William C. Brown Publishers.
3. McLean, D. D., & Hill, J. M. (1993). Supporting internship preparation: A case study in computer-based support. *Schole: A Journal of Leisure Studies and Recreation Education*, 8, 37-49. EJ 487 287
4. Mohnsen, B. S. (1995). Using technology in physical education. Champaign, IL: Human Kinetics.
5. White, R. (1993). How computers work. Emeryville, CA: Ziff-Davis Press.



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## **TECHNOLOGICAL ADVANCEMENTS THAT HAVE CHANGED SPORTS**

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### **ABSTRACT**

*Can you imagine your life without science? Unless you are OK with the idea of living without medicine and transportation– the answer is a resounding no. Now think about sports. You may not see the obvious link between sports and science, but it is all around the industry. The TV you watch in your bedroom, the protective gear used when you play, the heart monitors, analytics, fantasy sports apps – it's all forms of science, and it is all around us. Technology has changed sports. There was a time when your brain was only protected by a thin layer of leather, but now we live in a world with injection molded polycarbonate shells able to defray an impact similar to smashing your head into a wall at 20 mph*

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**Keywords:** Hawk-Eye, HANS Device, wearable Computers, pills.

### **INTRODUCTION**

#### **Hawk-Eye Technology:**

Just as it sounds, this technology uses 6-7 high-end cameras situated above the field of play (e.g. a birds-eye view) to analyze the flight and trajectory of an object being used in sports competition. Most commonly used in tennis, cricket, rugby and volleyball, Hawk-Eye Technology has been in use since 2006 in tennis and is more accurate than a judges eye.

#### **Benefits of this technology:**

- Hawk-Eye technology helps to take an error-free decision in cricket, lawn tennis, rugby league, football, and baseball.
- This technology has reduced the criticism of the players and spectators about the decision of the match referee.
- By analyzing the movement of the balls through this technology, the umpire can take an error-free decision quickly when the game is going on.
- The only downside of Hawk-Eye technology is that we haven't been introduced to the next John McEnroe. Without terrible calls by chair umpires, there are no more wildly entertaining tantrums and racket throwing.

#### **HANS Device:**

A vast majority of technological advancements in sports revolve around safety, and the HANS

(Head and Neck Support) device used in motorsports is one of the most famous.

At the time of Dale Earnhardt's death on the track at the Daytona 500 due to head and neck trauma, Thomas Gideon, senior director of Safety, Research & Development of NASCAR, claims that only about six drivers were wearing a HANS device. That moment changed the sports as more drivers adopted this technology geared towards saving their lives in the event of a tragic crash.

#### **Details of a HANS Device:**

- U-shaped device which is placed behind the neck and its two arms are placed over the pectoral muscles of the chest
- It is only connected to the helmet by two anchors on each side and supported by the shoulders
- A HANS device keeps the head from whipping forwards and backward in a crash, while also preventing excessive twisting movements

#### **Video Technology:**

To remind you just how long ago 1980 was – The 'Miracle on Ice' was not broadcast live. The epic Olympic hockey battle between USA and USSR, won in epic fashion by the US, was on tape delay, ending over an hour before the TV broadcast started.

There is no way that would happen in today's sports era.

Everything is live, and not just on your home TV, but on your Smartphone, tablet, and the

overhead screen in your local church. In today's sports world you are never far from live access.

### **Wearable Computers:**

Advancement in the world of safety and monitoring, wearable computers allow for real-time tracking of an athlete's health. Since their creation, the incidents of dehydration, heart attacks and worse, have dramatically decreased.

When Minnesota Vikings offensive lineman Korey Stringer died of heat stroke during training camp in 2001, companies began to investigate ways to monitor health in real-time and stave off tragedies like this. Wearable tech has made a difference in the lives of many athletes, by supervising pulse rate, hydration, and temperature through its wireless and microscopic health monitoring system.

### **Prosthetic Devices for Disabled Athletes:**

What used to be the end of the story is now just a beginning of a new one. People with disabilities, or lost limbs, never had a chance to compete, but with the advancement of prosthetic technology

more and more physically disabled are competing like before.

### **Ingestible Thermometer Pills:**

If you are an athlete, it is important to supervise visceral organs, temperature and heart rate. But it is not always possible to check it manually. To observe the body temperature accurately, some trainers are using indigestible pills.

When you swallow a pill, it moves around the gastrointestinal tract and transmits vital information of the body to medical personnel. So if there is any problem in your body, it can be solved before any accident. It will help to minimize death from heat exhaustion which is the second most common reason for athlete fatalities.

### **CONCLUSION**

There are far more than six technologies that have changed the sports world including GPS golf balls, carbon fiber skis and snowboards, computer software for fitness monitoring etc.

### **REFERENCES**

1. Blamires, Cyprian (2006). World Fascism: A Historical Encyclopedia, Volume 1. pp. 630–632. Retrieved 8 June 2015.
2. Saxena, Anurag (2001). "The Sociology of Sport and Physical Education". Retrieved 8 June 2015.
3. ulttuurivihkot 1 2009 Berliinin olympialaiset 1936 Poliittisen viattomuuden menetys Jouko Jokisalo 28-29(in Finnish)"Sport and apartheid.
4. Fulton, Gareth; Bairner, Alan (2007). "Sport, Space and National Identity in Ireland: The GAA, Croke Park and Rule 42". *Space & policy*. 11 (1): 55–74.
5. Tyler Cowen; Kevin Grier (24 October 2012). "Will Ohio State's Football Team Decide Who Wins the White House?". *Slate*. Retrieved 29 December 2013.
6. Mike Jones (3 November 2012). "Will Redskins Rule again determine outcome of presidential election?". "'Redskins Rule': MNF's Hirdt on intersection of football & politics". *ESPN Front Row*.
7. Etienne de La Boetie, *Discourse on Voluntary Servitude* (1549), Part 2 Sports and Christianity: Historical and Contemporary Perspectives, Nick J. Watson, ed. (Routledge: 2013), p. 178.

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## **HOW DOES SPORT PSYCHOLOGY ACTUALLY IMPROVE ATHLETIC PERFORMANCE?**

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### **ABSTRACT**

*The popularity of sport psychology, both as an academic discipline and an applied practice, has grown substantially over the past two decades. Few within the realm of competitive athletics would argue with the importance of being mentally prepared prior to an athletic competition as well as the need to maintain that particular mindset during a competitive contest. Nevertheless, recent research has shown that many athletes, coaches, and sporting administrators are still quite reluctant to seek out the services of a qualified sport psychologist, even if they believe it could help. One of the primary reasons for this hesitation appears to be a lack of understanding about the process and the mechanisms by which these mental skills affect performance. Unlike the “harder sciences” of sport physiology and biochemistry where athletes can see the tangible results in themselves or other athletes (e.g., he or she lifted weights, developed larger muscles, and is now stronger/faster as a result), the unfamiliar and often esoteric nature of sport psychology appears to be impeding a large number of athletes from soliciting these important services. As such, the purpose of this article is to provide the reader with a simple framework depicting how mental skills training translate into improved within-competition performance. This framework is intended to help bridge the general “understanding gap” that is currently being reported by a large number of athletes and coaches, while also helping sport psychology practitioners sell their valuable services to individual athletes and teams.*

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**Keywords:** sport psychology, framework, athletic performance & explanation understanding

### **INTRODUCTION**

#### **Sports Psychology & Performance Enhancement:**

The areas sports psychologists teach vary from one person to another depending on their experience and qualifications. Below are the top roles of an applied sports psychologist, a mental game coaching who helps athletes improve performance via mental training.

#### **(1) Help Athletes Cope with Performance Fears:**

Sports psychologist can help athletes overcome fears, such as fear of failure, fear of embarrassment, and general performance anxiety. This is common among athletes who are perfectionists or highly dedicated athletes that worry too much about what other people think about their performance.

#### **(2) Help Athletes Improve Mental Skills for Performance:**

The most common role for a sports psychologist is to teach mental skills for enhanced performance. A mental game expert can help you improve confidence, focus, composure, intensity, and trust in athletic performance. These mental skills help athletes improve performance and can help in other areas of an athlete's life.

#### **(3) Help Athlete Mentally Prepare for Competition:**

Another common role of a sports psychologist is to help athletes mentally prepare for competition and practice. This includes many of the mental skills mentioned above, but applied to specific situations on the athletic field.

#### **(4) Help Athletes Return after Injury:**

Returning to play after an injury can sometimes be difficult for many athletes depending on the nature

of the injury. Athletes are often left with “mental scars” long after an injury is physically healed. A sports psychologist can help injured athletes cope better with the pressures associated with returning to a prior level of performance—pre-injury.

**(5) Help Athlete Develop Pregame Routine:**

As part of mental preparation, the role of a sports psychologist includes helping athletes develop mental skills used during pregame or prerace routines. Athletes learn how to focus on the process instead of results and be more proactive with their confidence prior to competition.

**(6) Help Athletes Develop Preshot Routines:**

Preshot routines are another common role of a sports psychologist. Here, athletes learn how to use mental skills to prepare for a specific motor skill, such as a golf shot, free throw, or field goal kick.

**(7) Help Athletes Improve Practice Efficiency:**

Another common role of a sports psychologist is to help athletes improve the quality or efficiency

of their practice. Many athletes, such as collegiate athletes, have limited practice time. Coaches want to help these athletes get the most out of their practice time by understanding principles of motor learning and performance.

Mental Game Coaching is the segment of sports psychology that concentrates specifically on helping athletes break through the mental barriers that are keeping them from performing up to their peak potential. By focusing on the mental skills needed to be successful in any sporting competition, mental game coaching seeks to achieve the overall goal of performance improvement.

**CONCLUSION**

Today, sports psychologists can do several things to help athletes with sports and performance. A sports psychologist role is more accepted today as a part of the regular coaching staff for teams and for individual athletes—than 10 years ago. A sports psychologist can do are numerous, but they primarily teach athletes mental game skills to improve their performance and learning.

**REFERENCES**

1. Anderson, M.B. (2005). Doing sport psychology. Champaign, IL: Human Kinetics.
2. Bradley, M.M., & Lang, P.J. (2000). Measuring emotion: Behavior, feeling and physiology. In R. D. Lane & L. Nadell (Eds.), Neuroscience of emotions (pp. 242-276). New York, NY: Oxford Press..
3. Brooks, J.E., & Bull, S.J. (1999). Perceptions of the sport psychologist by female university athletes. *Journal of Sport Sciences*, 17, 205-212.
4. Burton, D. (1990). Multimodel stress management in sport. Current status and future directions. In J. G. Jones & L. Hardy (Eds.), *Stress and performance in sport*, UK: Wiley.
5. Corrigan, P. (2004). How stigma interferes with mental health care. *American Psychologist*, 59, 614-625.
6. Crocker, R.E., Kowalski, K.C., & Graham, T.R. (2002). Emotional control and intervention. In J. M. Silva & D. E. Stevens (Eds.), *Psychological foundations of sport* (pp.155-176). Toronto, Canada: Allyn & Bacon.
7. Dosil, J. (2005). *The sport psychologist's handbook: A guide for sport-specific performance enhancement*. West Sussex, UK: John Wiley.
8. Easterbrook, J.A. (1959). The effect of emotion on cue utilization and the organization of behavior. *Psychological Review*, 66, 183-201



## AN ERP LIFE CYCLE AND ITS COMPETITIVE ADVANTAGES IN SMES

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### ABSTRACT

*An ERP is an integrated information system that enables full and efficient utilization of resources for its information needs. The rising demand of information system, the integration of ERP components, brings the perspective of profitability growth and cuts down running costs for SMEs. Objective of this paper is to analyze the life cycle of ERP system. Since the study of ERP systems is a new area, there is very little theoretical or empirical research on the topic. Limited studies have been conducted in the past, but now, due to the magnitude of the ERP phenomenon, the need for such studies has become very important. ERP aims at integrating data, introducing cheap operation, easy monitoring processes from all areas of SMEs and unification for easy access and work flow which leads ERP to conquer the basic problems of SME by giving competitive advantages in the global world.*

**Keywords:** SME (Small and medium Enterprise) ERP (Enterprises Resource Planning), life cycle.

### INTRODUCTION

According to a recent study by International Data Corporation the enterprise resource planning services and training market is expected to grow at a rate equal to or greater than the software industry to which it caters [Weston, 1998]. AMR research Inc., the leading industry and market analysis organization specializing in enterprise enabling technologies, predicts that the enterprise resource planning (ERP) software market will grow at a compound annual growth rate of 37 % over the next five years [Caruso 1998]. This market will continue to be one of the largest, fastest growing, and most influential in the applications industry, and is poised for steady growth into the new millennium, says AMR. Nowadays, the ERP industry is one of the most promising ones, which contrasts with the obvious lack of related academics research.

The research framework is structured in dimensions and phases, generic enough to permit the classification of research issues and comprehensive enough to give a general vision of the whole ERP life-cycle. While the current topics of interests are mainly centered on ERP acquisition and implementation, our framework also covers post-implementation phase's current reached by a limited number of organizations. Within each phase, each issue may be defined and analyzed according to the dimensions that make up the orthogonal part of our framework. However, the information contained in this paper is intended

only to provide a general summary. It does not purport to be a complete description of the research issues. The research framework issues raised in this paper are intended for researchers and practioners who are interested in looking at the impact of the ERP systems in organizations.

The rest of this paper is organized as follows. We present an overview of ERP issues in the next section. In section 3 we present our research framework. Based on the phases and dimensions of the framework, section 4 discusses the research issues arisen. Some conclusions and ideas about further work are included in section 5.

### ERP OVERVIEW

Typically, Enterprise Resource Planning (ERP) are software packages composed of several modules, such as human resources, sales, finance and production, providing cross-organization integration of data through imbedded business processes. These software packages can be customized to answer the specific needs of each organization.

Regarding the significant impact of ERP systems on industry, [Davenport 1998b] refers that "the business worlds embrace of enterprise systems may in fact be the most important development in the corporate use of information technology in the 1990s". The market for people who can work with these systems, implement these systems, and understand how these systems transform organizations is very big, and growing [Watson & Schneider 1999].

ERP implementations usually involve broad organizational transformation processes, with significant implications on the organization's management model, structure, management style and culture, and particularly, on people [Caldas & Wood, 1999]. As [Davenport 1998a] mentions, ERP systems are not projects that someday will end, but rather, they are a way of life. They require a high degree of alignment between business strategies, information technology strategies and organizational processes [Gibson et al., 1999], in the same line [Henderson & Venkatraman, 1991] mentions for more general enterprise information systems. Change seems to be the main phenomenon associated with an ERP system. According to [Jarke & Pohl 1993], in order to deal with change effectively, one has to establish the change vision in the given technical, social, and organizational context.

The interest of the scientific community in the ERP field is evident according to the new panels and tracks that some scientific events dedicate to the subject, such as Hawaii International Conference on Systems Science (HICSS), Association for Information Systems (AIS), International Information Management Association (IIMA), and Workshop on Information Technologies and Systems (WITS), as well as the birth of the EMPRS'99 itself. The main vendors also promote professional and commercial conferences like ERPWORLD or SAPPHERE. The amount and quality of academic literature available in this field is just beginning to develop. We believe that organizations and vendors should play an important role in researching on ERPs, because this kind of research is amenable to be field-based rather than laboratory-based. Consultants also play an important role in the research of some issues; over the years, they have accumulated probably the richest ERP experiences through thousands of ERP installations worldwide. We believe that organizations and vendors should play an important role in researching on ERPs, because this kind of research is amenable to be field-based rather than laboratory-based. Consultants also play an important role in the research of some issues; over the years, they have accumulated probably the richest ERP experiences through thousands of ERP installations worldwide.

### **COMPETITIVE ADVANTAGES IN SMES.**

#### **3.1 Analysis of data:**

After implementation of ERP in small scale industry the following analysis shows benefits of ERP system. In the analysis employer and

employees vote was taken on the silent benefits of ERP software. All the employees took part in the analysis and given there valuable vote.

For this analysis employees has been divided into 3 levels based on their role in industry. Levels of the employees are as follows

Level I: Managerial department.

Level II: Administrative department.

Level III: Manufacturing department.

All the levels of employee had given feedback on the analysis of implementation i.e. the improvements in the firm before implementation of ERP and after implementation of ERP on the scale of five where 1 is very poor and 5 is great.

Table 3.1: Before implementation of ERP

Factors	Level I	Level II	Level III	Average
Operating cost	3.4	3.3	3.9	3.5
Inventory	2.8	3	2.9	2.9
On time delivery	3.6	3.1	3.4	3.3
Supply chain	2.5	2.3	2.7	2.5
Cycle time	3.3	3.1	3.5	3.3
Lead time	3.7	3.1	3.5	3.4
Man power	4.1	4	3.9	4

Table 3.2: After implementation of ERP

Factors	Level I	Level II	Level III	Average
Operating cost	4	4.1	3.9	4
Administrative cost	4.1	4.2	4.1	4.1
Inventory	3.9	4.2	4.1	4
On time delivery	4.5	4.4	4.5	4.5
Supply chain	4.1	4.2	4.4	4.3

Cycle time	4.5	4.6	4.7	4.6
Lead time	4.5	4.5	4.5	4.5
Man power	4.6	4.6	4.6	4.6

Above comparison of tables shows that there is an improvement in all the business activities after implementation of ERP in Small scale industry. Before implementing ERP the average of all the factors is 3.3 and after implementation the value rises by 1 and the average become 4.3 which shows the drastic change in business activities. Impact of implementation of ERP is shown more on reducing cycle time, Lead time and power where as other factors like inventory, on time delivery, operating cost also improved.

25% improvement has been observed in small scale industry after implementation of ERP software.

## ADVANTAGES OF ERP

### i. Reduced Operation Cost:

One of the most immediate benefits from implementing an ERP in SMEs is reduced operating costs such as lower inventory control costs, lower production costs and lower marketing costs. By avoiding duplication of information but not reinventing the wheel for common business processes, an ERP provides opportunities for cost reduction and value-added tasks, leading to increased margins.

### ii. Reduced inventory overheads:

Due to the centralized nature of ERP systems, SMEs can track inventory levels on a daily basis, including inventory in transit and future consignments to be received. This visibility can enable company to control their working capital requirements to a great degree. This visibility in inventory management also enables company to run their enterprise in accordance with their strategy, while empowering them to make quick decisions to pursue opportunities.

### iii. Reduced requirement of manpower:

HR department of SMEs observed that after implementation of ERP, manpower required of certain task has reduced. for example if in the administrative department 3 to 4 employees managing company's all data, spreadsheets, excel sheet etc. now all data is handled by one employee after successful implementation and rest employees where given another

### iv. Increased transparency in procurements:

All the procurement activities of the company increased with good transparency. Procurement activities like purchase planning, value analysis, financing, price negotiation, making and purchase where handled easily.

### v. Reduced delay in supply chain:

Proper purchase order, purchase receipt, sales order has reduced delay in supply chain. before implementing ERP it takes 2 to 3 days to generate purchase order for any product, after implementation it is a job of few minutes to create any purchase order as all the data is available in the system already. So supply chain time is reduced.

### vi. Reduced manufacturing cycle time:

The amount of time required to convert raw material into finished product is known as

manufacturing cycle time. Manufacturing cycle time is an important measure of internal business process performance it includes wait time, inspection time, process time, move time, queue time. After implementation manufacturing cycle time in SMEs reduced by 24%.

### vii. Reduced Lead time:

Lead time is the time elapsed between when a process starts and when it is completed. In SMEs reduction in lead time has seen after implementation, it approximately 26%.

Table 3.3: Improvement after Implementation of ERP

Business Activities	Actual improvement after implementation ERP
Operating cost	22% reduction in operating costs
Administrative cost	20% reduction in administrative costs
Inventory	17% inventory reductions
On time delivery	19% improvements in complete and on-time delivery
Supply chain	17% improvements in schedule compliance
Cycle time	18% reduction in cycle time
Lead time	24% reduction in lead time

## CONCLUSIONS

A well-designed and properly integrated ERP system allows the most updated information to be shared among various business functions, thereby resulting in tremendous cost savings and increased efficiency and provide Competitive advantages. Proper study of life cycle of ERP can give us a better understating of the ERP. All the parameters included in the study of ERP life cycle like man, machine, material plays important role in optimizing and automating any small scale industry. Application of ERP system in Indian Small Scale industries is still in nascent stage and during research review; it was observed that the awareness level on the latest information tools like ERP is limited among managements of some large industries only.

## REFERENCES

1. Jose M. Esteves, “An ERP Life-cycle-based Research Agenda” International workshop in Enterprise Management and Resource Planning: Methods, Tools and Architectures, Venice, Italy 1999, pp 45-55.
2. Alah awari, “Explaining ERP failures in developing countries” International journal of emerging trends and technology in computer science, vol. 1 issue 2, , 2010, pp. 107-117.
3. Parijat Upadhyay<sup>1</sup> and Rana Basu<sup>2</sup>, “A Comparative Study of Issues Affecting ERP Implementation in Large Scale and Small Medium Scale Enterprises in India”, International Journal of Computer Applications Vol 8, 2010, pp 23-27.
4. Hala M. Al-Shamlan et al , “The Chang Management Strategies and Processes for Successful ERP Implementation: A Case Study of MADAR” IJCSI International Journal of Computer Science Issues, Vol. 8, Issue 2, March 2011, pp 373-390.
5. Kamal Khanna et al, “Choosing an Appropriate ERP Implementation Strategy”, IOSR
6. Journal of Engineering Mar. 2012, Vol. 2(3),pp: 478-483



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## USE OF SCIENCE AND TECHNOLOGY IN ENGLISH TEACHING & LEARNING

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### ABSTRACT

*Computer based effective teaching offers powerful, interesting and new way of providing knowledge to students. In language teaching and learning, we have a lot to choose from tech. Science and Technology : Radio, TV, CD player, computers, the Internet, Electronic, Dictionary, Audio Cassettes, Power points videos, Mobile devices, Skype and DVDs. Internet and software have heralded a new era in many aspects of our lives to which education is no exception. As a result of the application of Science and Technologies, both teaching and learning are facilitated. Students learn faster and easier than before because of the use of science and technology. This paper aims to explore the effectiveness of science and technology in English language teaching and learning and also brings out problem faced by using these science and technologies.*

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**Keywords** :English language teaching and learning, Technology, Computer assisted teaching and learning.

### INTRODUCTION

Since the dawn of human civilization, the word is changing with breath taking speed. Life is not static, change is the law of nature and every educational organization has keep place with changing environment, which is beyond human control. Science and Technology has played a vital role in revolutionizing our world in many aspect. The use of science and technology in various fields has been so successful and beneficial for effective teaching and learning for students and teachers to reach some particular goals.

With the spread and development of English around the world, English is used as a second language in a country like India. It enjoys a high prestige in the country the new era assigns new challenges and duties on the modern teacher. The tradition of English teaching and learning has been drastically changed with the remarkable entry of Technology. Science and technology provides so many options as making teaching interesting and also learning. Technology is one of the most significant drivers of both social and linguistic change. At present the role and status of English is that it is the language of social context, political, sociocultural, business, education, industries, media, library, communication across borders, and key subject in curriculum and language of imparting education Science and Technology help students to get involved and learn according to their interest. It has been tested effectively and is widely accepted for teaching English in modern world. Teachers are creative intelligent people and

once they learn to use technology in their professional lives for keeping records, for creating documents and for enhancing their own learning. They will soon discover the many ways in which technology can enhance what they are doing with their students.

### USE OF TECHNOLOGY TO IMPROVE ENGLISH

It's no secret that technology has become more central in our everyday lives than ever before. It helps us in every of our lives, from health and fitness to creativity and social communication. But how can students benefit from today's technological advancements in the four skill areas to make their learning as well rounded as possible? With the advent of technological development, modern teaching aids have been introduced in the classrooms Interactive-Based Learning (IBL) and computer/ project based learning have gained importance in the recent times and brought modern teaching like overhead projectors, audio-visual aids like computer/ laptop, CDs power point presentations and other modern aids like e-books, e-readers etc, into the classroom. Internet has brought a tremendous change in providing various on-line teaching aids to improve English language.

#### 2.1 Listening :

They began as simple audio on a cassette tape and today's audio books have taken over the literary world. Speaking was the most difficult aspect of learning English. When it comes to improving both comprehension and speaking skills, extensive

listening is highly recommended, listening too and reading text at the same time is a great way to start and Kindle's Whispersync for voice technology is designed for just this purpose. It includes audio with selected books, so you can listen and follow the text as you read. Podcasts are also becoming more popular with English learners, with the ability to listen anytime, anywhere and English language podcasts are a great way to improve your listening skills. Here are some popular podcasts to try : Listen to English by Peter Carter, Elementary Podcasts by the British Council and Luke's English Podcast.

iPods are one of the mobile media devices which enable users to produce, organize, deliver, and use media also users can share text, images, audio or video with their peers and teachers. The technology and pedagogy of using podcasting and iPod could be in improving listening skills in case of language teaching.

## 2.2 Speaking:

Giving learners the advantage of communicating in real time conversations with English speakers probably the most exciting technological advancement has come in the form of Skype and FaceTime. Tools such as video-conferencing also offer two teachers the opportunity to link to other classes around the world also gaining support from other teachers and students.

There are many new apps on the market for speaking with other learners, such as Coffee Strap and Hello Talk- meaning you can converse with native speakers right from your phone. No webcam required anymore! Nowadays almost all messenger services have audio functions and technological equipment such as laptop computer, also have cameras on them. So students can talk with their instructors and peers far away. "Skype is a relatively newly emerging technology and the potential application of it to language and literature learning and teaching needs to be further explored" And students can speak with native speakers of language and compare their pronunciation. In addition to improve their literary knowledge by discussing intended literary works with native or native like speakers of English especially university professors, students can improve their speaking too. Speaking skills can be developed by using this application.

## 2.3 Reading:

With the rise of iPads, tablets and e-readers like the Kindle, we've come accustomed to a more

interactive reading experience, which is a wonderful feature for English learners. Functions like click to define, vocabulary builders, and downloading whole texts at the touch of a button are all beneficial to a learner looking for a fun and effective way to improve their reading and writing in particular. It can help to expand your vocabulary and expose you to different sentence structures. Start by reading our pick of nine great novels to improve your English.

## 2.4 Writing :

One of the most well-known technological advancements for writing is the unassuming word processor. Simple tools such as a dictionary and a thesaurus help writers expand their vocabulary, while spelling and grammar checkers are helpful to find correct errors. Moving forward to the internet age and online forums are a widely used channel for learners to communicate and learn from one another using the written word. This is also a great alternative for those who don't have the opportunity to converse with a native speaker face to face.

These technological advancements can help you advance in your English learning you just need to take advantage of them and they are right at your fingertips.

## **THE GROWTH OF ELT THROUGH TECHNOLOGY**

21<sup>st</sup> century is the age of globalization and is important to grasp on various foreign languages and English language come first. English Language Teaching has been with us for many years and its significance continues to grow, fuelled, partially by the Internet. With the rapid development of Science and Technology, the emerging and developing of multimedia technology and its application to teaching, featuring audio, visual, animation effects comes into full play in English class teaching and sets a favorable platform for reform and exploration on English teaching model in the new era. It's proved that multimedia in English class. Technological innovation have gone hand in hand with the growth of English and are changing the way in which we communicate.

## **WAYS LEARNERS CAN IMPROVE THEIR ENGLISH WITH TECHNOLOGY**

"Language is not a genetic gift, it is a social gift. Learning a new language is becoming a member

of the club -the community of speakers of that language.” – Frank Smith

Learning a language takes practice, practice, practice! Our students become more fluent the more they speak, listen, read and write in English outside our classes. Below is an infographic and list of web tools and apps for your students to improve their English. Feel free to share these resources with your learners so they are encouraged to practice English continuously throughout the day.



**4.1 Games** – Learners can play various games to improve their English. Kindersite is full of games for learning English. One of favorite apps and sites with language games is Tiny Tap. Adults can learn vocabulary with the popular vocabulary apps Words With Friends, Words on Tour, Word Streak With Friends and What’s the Phrase?

**4.2 Podcasts** – Students can listen to ESL Library’s English podcasts and learn grammar and vocabulary about various topics. Learn how to use these podcasts to inspire a dictogloss activity. Students might also enjoy these podcasts Absolutely Intercultural, ELLO, and Poetry 4 Kids.

**4.3 Videos** – Students can learn English by watching videos. English Central has various videos to help students practice their pronunciation. BlubbrTV and ESL Video are full of quizzes. Steve Ford, of Peppy English, has various videos teaching idioms, phrases, and more. He will even answer questions from the audience in upcoming videos.

**4.4 Apps** – Encourage students to learn language with their mobile devices! Quizlet is an app with

vocabulary flashcards and games. HelloTalk allows you to chat with other language learners. The Dictionary app works offline to help you define and pronounce thousands of words. Duolingo and Busuu have vocabulary quizzes and learning games for language learners.

**4.5 Music** – Lyrics Training is a site for learning English through song lyrics. Fluency MC has created many rap songs to help you learn grammar and more! ESL Hip Hop has videos, grammar exercises and more featuring famous musicians. Check out these posts with more ideas- Learn English Through Song Lyrics and Choosing Music Videos for the English Classroom.

**4.6 Social networks** – Students can join sites like My English Club and Voxopop to learn English with language learners around the world.

**4.7 Comics** – Students can have fun learning English with these free comic sites- Grammar Man, Comics English, Play Comic, Zen Pencils, Learn English with Comic Strips, and Teach English with Comics.

### **MOBILE LEARNING: IMPROVE STUDENTS’ AND TEACHERS’ ENGLISH ANYTIME, ANYWHERE**

As the use of mobile technology is increasing, why not offer students the possibility to study anytime, anyplace and at their own convenience through their mobile devices? Our world today is obsessed with doing everything quickly, learning included. Self-study is obviously important in language learning, some of the amazing apps available and encourage them to learn in a mobile way. And it works.

### **FIVE FREE APPS FOR LEARNING ENGLISH ON THE GO**

There are hundreds of mobile phone apps available and it's possible to find free options suited to students on a budget. Here are my top five free apps that students can use for extra practice:

**6.1 British Council:-** apps offer a huge choice for smart phones. You can look at the options on their webpage and download the apps on Google Play, Apple's App Store or using a QR code. I particularly like 'Johnny Grammar's Word Challenge' - it's a fun way to improve grammar.

**6.2 Duolingo:-** is a wonderful app that has just won the 'Best education start-up award'. It's designed like a game and is pretty addictive. It's free, contains no adverts and is very effective.

**6.3 Two min English:-** is free, has no adverts and contains more than two hundred two-minute video

lessons on a variety of topics e.g., social English, business English, travel English, common mistakes in English, idioms and phrases.

**6.4 Game to learn English powowbox:-** is a multi-level game. Once downloaded, it appears as English tracker. The first three levels are free. You have to spot the mistake - if you get it wrong, you receive a clear explanation. It's fun and easy to play.

**6.5 Real English:-** offers a variety of apps at different levels – business and conversation apps at beginner, intermediate, and advanced levels. The apps are free, but they contain adverts. Each app contains 20 lessons that focus on specific grammar/vocabulary areas. Each lesson is made up of five parts.

### **ADVANTAGES OF TECHNOLOGY IN TEACHING AND LEARNING ENGLISH LANGUAGE**

#### **7.1 To Improve Teaching Effectiveness:-**

To large classes it is difficult for the students to have speaking communication. The utilization of multimedia sound lab materializes the individualized and co-operative teaching multimedia technology goes beyond time and space, creates more vivid, visual, authentic environment for English learning, stimulates students initiatives and economizes class time meanwhile increases class information.

#### **7.2 To Improve Interaction between Teacher and Student :**

Using multimedia in context creating creates a good platform for the exchange between teachers and students, while at the same time providing a language environment that improves on the traditional classroom teaching model. In this way, teachers in the classroom no longer blindly input information and force students to receive it in a passive way.

#### **7.3 To Cultivate Students' Interest in Study :**

Nowadays, the multimedia technology featuring audio, visual animation effects naturally and humanely makes us more access to information besides, with such characteristic as abundant information and crossing time and space multimedia technology offers a sense of reality and functions very well, which greatly cultivates students interest and motivation in study and their involvement in class activities.

#### **7.4 To Promote Students Communication Capacity :**

The multimedia technology seeks integration of teaching and learning and provides the students

greater incentives. The PPT courseware activate students thinking, the visual and vivid courseware and help them to transforms English learning into capacity cultivation. And such in-class activities as group discussion subject discussion and debates can also after more opportunities for communication among students and between teachers and students.

### **PROBLEMS ARISING FROM APPLICATION FOR MULTIMEDIA TECHNOLOGY TO ENGLISH TEACHING**

In spite of advantages of application of multimedia technology to English class teaching has to improve teaching effect and university students overall capacities, there are many problem existing in practical teaching.

#### **8.1 Loss of speaking communication :**

The introduction of multimedia technology featuring audio, visual, textual effect fully meets audio and visual requirements of the students and enhance their interest but it also results in lack of communication between teachers and students, replacement of teachers' voice by computer sound and teachers analysis by visual image and students have few chances for speaking communication.

#### **8.2 The Restriction of Students Thinking Potential :**

It ignores emphasis and importance in teaching, it also neglects instruction in students thinking inspiring their path of thinking strength thinking their capacity contemplating and solving problems. In this way it should be noted that cultivation of students thinking capacity should be the major objective in teaching and using of multimedia technology and it should not take up the students time for thinking analyzing and exploring questions.

### **SUGGESTIONS AND STRATEGIES TO THE EXISTING PROBLEMS**

In practical teaching. It is improper to duplicate the textual material simply to the screen so that the teachers position is ignored in order to ensure the function of multimedia in teaching.

#### **9.1 The computer screen can't substitute the blackboard :**

Some teachers take the computer screen as the blackboard. They have input exercises, question, answers and teaching plans into the computer and display them piece by piece without taking down anything on the blackboard of even the title of lesson. It is known that teachers are supposed to simulate situations based on teaching and guide



the students to communicate in English. Beside traditional writing on blackboard is concise and teachers can make adjustment and amendment to it if necessary. Furthermore experienced teachers know well that a perfect courseware is an ideal project in mind, and that in practice, they need to enrich the content on the blackboard with emerging of new question raised by the students.

### **9.2 Power point cannot take the place of students thinking and practices:**

At present, most multimedia courseware mainly features on image and animation of teaching materials in order to cause audio and visual effect, which lively displays the content of textual materials and help the student deeply understand the text. A problem remains that displaying of the content of texts in the PPT courseware cannot take the place of

## **CONCLUSION**

So, technological devices should be always used by students and teachers. In order to provide an interaction between language learners and teachers or peer to peer. Internet connection and mobile devices are of the most popular and useful ways in language learning.

Concerning the development of technology, we believe that in future the use of multimedia English teaching will be further develop. The process of English learning will be more student centered but less time- consuming. Therefore, it promises that the teaching quality will be improved and students applied English skills can be effectively cultivated, meaning that students communicative competence will be further developed

## **REFERENCES**

1. Ehrmann S. C., Asking the right question : What does research tell us about technology and higher learning? Change Magazine, 1995; 27: 20-27.
2. LeLoup J.W. A Communication Technology Module for the Foreign Language Methods Course, SUNY Cortland. 2000; 05 (01) : 05-07.
3. Bialo E. R. & Sivin-Kachala J. The effectiveness of technology in schools : A summery of recent research, 1996; 2 (04): 14-15.
4. Madhareviah G. et al, IJSRR, 2 (3), 146-154.
5. Zhanghongling (The development tendency of the modern foreign language teaching and the computer assisted instruction. Computer-Assisted Foreign Language Education 3. [blog.eslibrary.com](http://blog.eslibrary.com)
6. [www.britishcouncil.org/voices-magazine/mobile-learning-improve-english-anytime-anywhere](http://www.britishcouncil.org/voices-magazine/mobile-learning-improve-english-anytime-anywhere)
7. [www.indiastudychannel.com/resources/146667-Use-of-modern-teachings-aids-in-classrooms-in-India.aspx](http://www.indiastudychannel.com/resources/146667-Use-of-modern-teachings-aids-in-classrooms-in-India.aspx)
8. Solanki D. Shymlee – Use of Technology in English Language.
- 9.

## USES OF SCIENCE AND TECHNOLOGY IN RECENT POLITICS

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### ABSTRACT

*The current era is known as the era of science and technology. Each and every field is occupied by science and technology. Politics is also an exception, politicians and political parties appear to use it in large numbers. The role of science and technology in modern media is crucial in the election. Technology has enabled candidates reaching the actual voters. Face book, Whatsapp, You Tube, hangouts, Twitter, SMS, MMS, and through such social media they reach each and every household. Thus they are avoiding wastage of time and money. Apart from this, the publicity by television and radio is also used in large numbers. As soon as the Election Commission is monitors the campaigning system. The election machinery is also trained by the ITC. They use of EVM for actual voting. Comes from the selection, politicians use science and technology to control the administration. From this, in recent politics, whether it is Indian or any other prominent country, it will have to do so without taking the basis of science and technology.*

**Keywords:** Science, Technology, Politics

### INTRODUCTION

Politics is an arts and it has been stand on three basic. Science of administration, influencing administrative policies by science and administration control by science. In the olden times, politics was bounded to muscles and money powers. But now it has not remained. Science and technology has affected your life so much, that no work is done in the old way. The former joint family has now been replaced by a smart phone. Previous politics was based on the incidents. Today the topic of the incident is taken up by the subject of the use of science and technology be a subject of study.

Take an example of election propaganda. In what context must be pre-decided and the final objective is to make an election, after that political advisor choose and then how to use technology. If 200 years ago a politician came in todays era, they would still see that social unrest is important. Everyone wants to come in power and somebody is upset about the total situation. Politicians try to regain power by using a private and governmental media and gain the power.

### OBJECTIVES

1. To study the use of science and technology in recent politics.

2. To study the influence of science and technology on recent politics.

### HYPOTHESIS

1. Science and technology are increasingly used in recent politics.
2. The influence of science and technology is found in modern politics.

### RESEARCH METHODOLOGY

Uses of science and technology in recent politics, for this present research observation method and descriptive method have been adopted. Now these days we are observing that, in politics, how politicians are using the science and technology to improve their status.

### SCIENCE AND TECHNOLOGICAL INFLUENCE ON POLITICS

Science and technological influence on politics it often seems that people interested in science and technology and people interested in politics don't get along too well. The scientist behind the technologies struggle with the rules of the political gain while politicians rather rely no rhetoric than science to appeal to their voters. When politics and technology do came together the discussion often center on one of to do extremes: either politics demand that certain technology be promoted on matter the consequence in the long run of politics deals with a very specific and urgent

problem. For example; when a new technology has led to a socially unacceptable catastrophe in term leading to political pressure these are extremes because they lack one important thing: a reflected holistic debate. Very seldom do we see politicians or voters for that matter – engage in the more general, holistic kind of discussion of the relationship between technologies and politics and the political consequence of a given technology.

There is no denying that the technology shape our everyday lives. Given the importance of technologies one has to wonder. Why general discussion on the influence of the technologies are not taking place more often in everyday politics. Do politicians and voters not care? Don't they have the time? Do they think it would not pay off? Do discuss something abstract.

### **TECHNOLOGY IS POWER**

We have started that technologies widen the options for humans and allow them to either do thing they were already doing in a better way or even allow them to do things. They have not done before the power vestal in technology can be used for the good of the society.

### **TECHNOLOGIES INFLUENCE POLITICS AND VICE--VERSA**

Though politics, society or politicians can set out to identify particular problem or define a certain objectives the require respective technology. Politics can fence stand at the beginning of technologies can progress by creating the demand for technologies. A prime example would be military technologies where politics set out to create more and more sophisticated technologies with the aim of increasing their powers.

- i. All there areas of the technology definition are political.
- ii. Technologies influence all there aspects of politics.

Technological progress is only controllable to same degree. The continued growth of technology has had a significant impact on the political rating that candidates achieve.

Political candidates use technology in many ways. Different communication channels provided by the internet have the power to influence the growth of different individuals in their respective spheres. The likes of twitter, face book and you tube are powerful communication media platforms that can easily raise the ratings of political candidates.

Housley, claims that whether we acknowledge it or not technology is deciding factor in most political races. Through technology, politicians are able to access funds, gain political pundits and spend less on campaigning and pushing their candidacy.

One of the ways in which technology influences politics is the financial side. Raising funds to use for campaign is an important factor for political candidates. It comes with the need to create a vertical response to the whole country or target region.

### **CONCLUSION**

The researcher has concluded the following conclusion:

1. Science and technology has filled the current world. There is no such area, it can run without science and technology.
2. The influence of science and technology on recent politics is tremendous.
3. Political parties and candidates make huge use of it during the election periods.
4. In addition to their own propaganda, they use science and technology to minimize the influence of the oppositions.
5. In the absence of politician and political party it is also found in the misuse of science and technology.
6. During the election it is possible for a public meeting to be addressed through video conferencing
7. With the help of science and technology, it is easily possible for the Election Commission to control the elections.
8. Illegal voting is not conducted due to an electronics voting machine being voted through the problem of process of booth capturing is also over.
9. Overall science and technology are found in the use and misuse of politics.

### **SUGGESTIONS AND MEASURES**

If the use of science and technology is appropriate, it is boon and if it is misused, it can be curse. By using good by avoiding misuse of science and technology in politics, politics can be more straightforward and clear. Only using the sting operations, fake clips, it

should be used to solve the problems of different areas of the country. Politicians and politics can be boon for the country, if it is used by science and technology to break public burning questions and to control administration and governance.

### **REFERENCES**

1. Research Methodology, Dr. V. L. Jarare, Atharv Publishers, Akola, 2005
2. Managing With Power, Jeferey Pfeffer, Harvard Business School, Press Boston, 1992
3. Affective Public, Zizi Papacharissi, Oxford, 2015
4. Technological Influences on Politics, Nikolas Zahn, Publicspheresalons.com
5. The Impact of Technology on Politics, Housley, Sharon, Feed For All, 2012
6. Daily Lokmat News Paper, Nagpur 08.02.18.



## SITUATION AND PROBLEMS OF FARMERS IN MAHARASHTRA

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### ABSTRACT

Farmers are the backbone of India. Around 65% Indian economy is depending on agriculture sector. Therefore it is a need of time to be concentrate on farmer's problem. This research mainly will be focused on various problems of farmers in Maharashtra. To do the deep study of various problems of farmers and provide suggestions from all the levels to eradicate those problems. This research will be useful to enhance the status of farmers.

On farmers problem, vast and detail literature is available. Theoretically and practically the farmer's issues are the serious in current scenario. The social thinkers, literature, government policies, news papers data mainly will be the part of literature for preparing for this paper.

**Keywords:** Government, suicide, efforts, strategy, status, role etc)

### INTRODUCTION

Maharashtra is a home for cotton farmers and most of them are struggling with the massive debt. Most of the villages in Maharashtra are badly in need of basic social infrastructure like all-weather roads, drinking water, regular electricity, primary health care, and basic education. Majority of suicide cases are from cotton growing areas. The cotton farmers in India paying more prices for inputs like seeds, pesticides, fertilizers, electricity, water, and labour whereas the price of cotton has gone down along with decreased productivity. The main cash crops of the region are cotton, oranges and soya beans. Amravati is the largest Orange growing district. Traditional crops are sorghum (jowar), pearl millet (bajra) and rice. Yavatmal is the largest cotton growing district. Gondia is the largest rice growing district. Gondia is a Rice city. Recently Vidarbha region has become infamous for a large number of farmer suicides occurring.

There are large large numbers of farmers who have committed suicide in Maharashtra in the last decade, out of which more than 70% farmers belong to the 11 districts of Vidarbha region. This is mainly because of the infertility of the land, lack of ample amount of water resources, lack of new technologies and due to the negligence of the state government towards the farmers' needs. The main crop in Vidarbha is cotton, but the farmers growing it do not get their share from the government, which leads to the high distress among them, leading to the massive suicides. Due to the absence of any responsible counseling either from the government or society there were many farmers who did not know how to survive in the

changing economy. Such stresses pushed many into a corner where suicide became an option for them.

### PROBLEMS OF FARMERS

- Absence of adequate social support infrastructure at the level of the village and district.
- Uncertainty of agricultural enterprise in the region.
- Indebtedness of farmers.
- Rising costs of cultivation.
- Plummeting prices of farm commodities.
- Lack of credit availability for small farmers.
- Relative absence of irrigation facilities.
- Repeated crop failures.
- Dependence on rainfall for farming.
- Rural living.
- Lack of political will and insight in the region.

### AGRARIAN CRISIS IN MAHARASHTRA

It has too many facets: National agricultural policies, Minimum Support Prices debacles, weak political leadership, lack of rational water policy, absence of irrigation, huge irrigation backlog, thirsty and expensive GM cotton, ever increasing cost of inputs like seeds, fertilizers and pesticides, diversion of irrigation water from farms to power plants & industries, bad crop insurance policies, hopeless revenue tools of arriving at farm losses, arm twisting by middlemen and the debacle of bazar samitis, issues with household economic management by farmers, opportunistic lenders and opportunistic leaders... and an indifferent society as a whole.

### **FACTS ABOUT FARMERS**

1. Among the marginal farmers, place to more social problems and decline the quality life of framers.
2. Illiteracy and traditionalist mentality are the hurdles in the process of development of framers in research area.
3. Political and administrative awareness help to utilization of government fund and various schemes.

### **FOLLOWING PARAMETERS ARE REQUIRED FOR HOLISTIC STUDY OF FARMERS**

1. To study the position of farmers in social hierarchy.
2. To study the community support or lack of it.
3. To study the economic inclusion of farming community.
4. To study the productive and unproductive transaction of farmers.
5. To study the political organization of farming.

### **REFERENCES**

1. Acoff Robert: Design of social Research, Tata Mc-graw Hill, New Delhi, 1978.
2. Ahuja Ram : Rural Problems In India'Rawat Publication Jaipur 1992
3. Agrawal G. K. : Sociology,Sahitya Bhavan Delhi 1992
4. Allport G. W.: Methodology & Techiques in Social Research,
5. Ahmad Ashhad : Child Labour in India' Kalpar publications, Delhi, 2013.
6. Bottomer T.B.: Sociology A Guide To Problems of
7. Literature' Unwin unizen Books London – 1962
8. Burgess, Ernest W. : Research Methods in Sociology', New York
9. Philosophical Library, 1949.
10. Chapalgaokar : Society and culture' Swarajya Prakashan ,Pune.
11. Cooley Charles H. : Human Nature and the social order',
12. New York : Scribnes, 1902.
13. Dahrendorf, Rult : Class and class conflict in Industrial Society,
14. Stand ford, Standford undersity press, 1959.
15. Dwivedi R.S: Research Methods in behaviour sciences,
16. Sanket Publication Delhi 2006
17. E.Chandran : Social and Economics Problem of India,
18. Cosmos Book L.T.D. New Delhi – 1997
19. Ghosh B. N.: Scientific Methods and Social Research,
20. Sterling publsihers Pvt. Ltd. New Delhi, 1982.
21. Herskovit M. J.: 'Sociology-A guide of problems and Literature '
22. S. Chand Publication New Delhi 2008
23. Harlombas V. M : 'Sociology themes and perspectives'

### **CONCLUSION**

The issue of farmers' suicide has so far been dealt with in a piece-meal approach, wherein a specific area or problem has been targeted. The long term solution lies in addressing it with a multi-pronged approach, focusing on empowerment of the farmers. The fundamental step must be to instill them and the society at large with a sense of pride and purpose in the productive and creative field of agriculture

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## PROBLEMS AND CHALLENGES IN FRONT OF INDIAN SOCIETY IN CURRENT SCENARIO

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### ABSTRACT

*India is a second largest country about population after China. The social structure and construction of India is different than other countries. Indian society is full of social problems. Every day social life is becoming complex and crucial. Like other countries, India also accepted the policy of globalization. New global challenges are in front of Indian society. Basically Indian values and ethics are well-known in the world. That's why even in the diversity of India trying to enhance the social and economical status. There are five thousand languages, six main religions, various cultural trends and heterogeneous streams of civilization.*

*India is a developmental country moving towards development and progress.*

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**Keywords:** Science and technology, political, issues, problems, process etc

### INTRODUCTION

While studying the evolution, the knowledge of basic, primitive and naturally habitat get to the man. Naturally earlier man was in the situation of roaming. Later on as per the time span, he has started to move towards development. But he has ignored some points and affect on sustainable development. Along with development man has detained, destroy and disturb the eco system. Environmental degradation resulted and created many social problems in front of human beings in current scenario.

Science and technological invention directly implemented and involve in social life of today's man. Therefore today man is totally dependent on machines. In the age of globalization man avoiding nature and natural phenomenon.

There are many hurdles and challenges in front of Indian society. Social, cultural, economical, religious and political conflict sometimes disturbs the social system which cause to hurt of national integration.

India is well-known about culture in the world. Values, ethics, morality etc are the part of Indian society. Indian society based on the culture, social and religions patterns and this variable indulged directly in Indian social life.

When we peruse the study of knowledge and education system of India, we notice the

wonderful features and characteristics of Bhartiya (Indian) knowledge system. Earlier in Indian society, was place to Gurukul pattern. Students used to live with Guru. In that way there was close bonding and control of Guru. But as per the time span, there are many lacunas, challenges and less response to education and knowledge system in current scenario.

The main aim of this paper is to promote the ancient Indian value system and try to put frame old knowledge pattern in today's education system. Identification, study and eradication of drawbacks in Indian knowledge system and move towards the positive futuristic approach.

There should be the place in each and every stream of education to human ethics and professional values.

Today is a global world. Indian is also accepted and implemented the globalization process. Today science and technology is utilizing for nation development. Effective, advance and expected circulation, implementation of science and technology play an important role in nation development. Today there is a directly involvement of technical things in social life.

Also there are positive and negative side effects on Indian society. Excessive fashion, fad and zigzag western life style can pull

down towards wrong ways. So there is a need to take cognizance and identify the side effects of science and technology on today's social life. Identification, control plan and effective strategy for maintaining development track in right way is necessary and need of the time.

The use of science and technology always expectable for relevant social changes in society.

### **PROBLEMS OF INDIAN SOCIETY IN CURRENT SCENARIO**

India has accepted the globalization policy in current scenario. There are many global challenges in front of Indian society. Many of the world's greatest health, environmental, and security threats are beyond the ability of any one nation to confront by itself. Energy and environment recognizing both the increasing global demand for energy and the importance creating in front of India.

Health hazards with origination of new diseases is also a global issue. Shortage of medical aid and lack of doctors is the current new born problem. Water scarcity, food shortage, hunger, poverty, malnutrition and many more problems destroy the construction and social structure of society.

1. Problem of global ethics
2. Sustainable development and climate change issues
3. Role and involvement of science and technology
4. Energy shortage
5. Clean water shortage and dispute
6. Statuses of women and exploits related matter
7. Mental peace and conflict
8. Education, teaching and learning process
9. Health issues and hurdles
10. Over population, high density of population and exhortation of human resources
11. Democratization

12. Class system and global foresight decision making

### **SUGGESTIONS AND RECOMMENDATIONS**

1. Effective and expected role of science and technology-Identify technology domains that have the potential to increase or change the nature of these threats. Exploration policies and approaches concerning the access to information about potentially for nation and society development.

2. Technological capacity and development in nation-Science and technology can play an important role for society development.

3) International economic policy and international trade-UNO and international organization have to focus on for cumulative eradication of global challenges in India.

4) Agriculture and food security-Prosperous and sufficient agriculture production is helpful to sort out the problem of hunger.

5) Life support and sustainable development-Development with sustainability is key to healthy society. There should be the balance combination for cope up the global challenges in India.

6) Population control, effective mechanism of education and role of human welfare-

This triangle will be useful to maintain dignity, harmony and national integration.

7) Peace, governance and culture-Every country has to develop and promote peace and cultural trends with effective of government and administration.

### **CONCLUSION**

Today there is the most need to mentally peace and comfortable life style to human being. In the age of globalization, life is going to become complicated and full of stress. Therefore there is need of time to catch up hand and cumulative efforts for adjustment and comfortable life style.



## REFERENCES

1. Albrecht, Gary L., Advances in Medical Sociology, Mumbai, Jai Press.
2. Coe. Rodney M, 1970, Sociology of Medicine, New York, McGraw Hill.
3. Cockerham, William C., 1997, Medical Sociology, New Jersey, Prentice Hall.
4. Cockerham, William C., 1997, Readings in Medical Sociology, New Jersey, Prentice Hall.
5. Conrad, Peter et al, 2000, Handbook of Medical Sociology, New Jersey, Prentice Hall.
6. Dasgupta, R., Nutritional Planning in India, Hyderabad, NIN, 1993.
7. Fox, Renee C., 1988, Essays in Medical Sociology, Journeys into the field, New York, Transac Publishers.
8. Nayar, K.R., 1998, Ecology and Health: A System Approach, New Delhi, APH Publishing Corporation.
9. Bergel, E.E., 1955, Urban Sociology, McGraw Hil Book Company, New York. 2. Quinn J.A., 1955, Urban Sociology, S. Chand & Co, New Delhi



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## CREATING INDIGENOUS LEARNING RESOURCES THROUGH ENVIRONMENTAL PROJECTS USING INEXPENSIVE MATERIAL IN COLLABORATION WITH STUDENTS OF SARASWATI JUNIOR COLLEGE, PARAS.

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### ABSTRACT

*The present research paper is about classroom efforts resulted in developing perennial learning resources and promoted interdisciplinary approach. It also highlights the use of hobbies in daily teaching. Participation of students, constructivist approach, use of inexpensive and easily available material are some of the salient features. Joy of learning is perhaps the best outcome which cannot be measured with any designed scientific tool.*

*The researcher used match box pictures, coins, currency notes, postage & philately stamps, feathers and self taken photographs India and abroad to activate the students. Minor efforts at local level crossed regional boundaries and touched global level. Educational institutes inviting for programs confirmed the validity and novelty of the work. The projects highlight hidden potential around us. Also it marks that each challenge has a silver lining. Focusing on available material is what one has to consider. Environment projects are actually unique opportunities to understand nature in its minutest parts. Simplicity, collaboration and cooperation are the under laying currents of the paper.*

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**Keywords:** indigenous, learning resources, inexpensive material, junior college.

### INTRODUCTION

Environment Science, popularly known as EVS is a compulsory subject for higher secondary classes and project work is the backbone. Students have to work and submit project work. Usually they rely on readymade material to complete the formalities. Saraswati Junior College is a rural educational institute situated in Akola district. There are fourteen adjoining villages from where students come to learn. Most of them belong to poor socio-economic families. We have four sections, two each from Arts and Science. The average population of junior college is 250. Groups of five to six work on a project.

In project work rural students enjoy certain advantages compared to the urban and metropolitan students. Due to poverty majority of them have to work on field. Some work regularly while others wait for Sundays and holidays. During the sowing and harvest season one can witness a low turnout in the college. These guys have a sound knowledge of farming and related things. Since the inception of the subject our students are carrying out the environment projects with zeal and enthusiasm. After every passing year they are adding to the resources which now we use

as a perennial source for other subjects and in many classes.

Poor economical status of the students seldom allow them to purchase costly material from the market. As a teacher, I was well aware of the fact and sorted out some other ways. I preferred to use discarded and inexpensive material like match box miniature pictures, used postage stamps, coins, currency notes, feathers and self taken photographs. Also used my personal collections of the said things. Subsequent batches added and enriched the collections resulting in numerous learning resources.

### METHODS/ACTIVITIES

#### *Activity One*

#### **PHILLUMENY SHEETS: A WORLD OF MINIATURE PICTURES.**

The chief aim was to do some actual work. Seldom our students copied themes or readymade material. My childhood hobby of collecting match box pictures (Phillumeny) proved handy. Often these miniature pictures of flora and fauna were carried in the classes. Students collected similar pictures and used it for their projects. Now the collection has crossed fifteen thousand (15000) mark.

The match box pictures carry beautiful images of almost everything. Animals, birds, insects, means of transportation, tools, numerical, deities, religious symbols, mythological figures, historical heroes, cricketers, even extinct species like dinosaurs and dodo. The real challenge was sorting and arranging the pictures in organized form according to themes. Five pictures of the same bird, animal or object were pasted on a 19 x 14 centimeter century paper sheet. That was the beginning of making phillumeny sheets. An album was compiled containing hundred sheets. Students cut them, sorted out matches and pasted in the albums. Even kids of Std. IV participated in the events. Now there are twenty such albums. Here are some of the interesting titles; Wild Cats, Ranch, Bird Sanctuary, Transport Company, Garden, Tool Kit, Ad World, etc.

### Activity Two

#### **NUMISMATIC COLLECTION: METAL EVIDENCE**

Money is the phenomena with everybody is familiar. Besides universal acceptance one of the most important aspect of currency is its educational value. Dates, pictures and inscriptions are authentic and are stamped with accuracy.

These metal pieces carry the message quickly to the masses. Since ages all over the globe rulers used this aspect to reach to their subjects.

While dealing with history, I found coins very useful in the classes and could be utilized for projects. My collection carry 2000 Indian and equal number of foreign coins. The oldest Indian 'Punchmark' coins date back to 6th century B.C. the first one introduced in India. They carry pictures of the sun, the moon, trees, flowers, animals, vines etc. The ancient Satvahana dynasty coins carry images of elephant while the Sikh dynasty coins are recognized by flower symbol. All these coins speak volumes about the importance of environment in ancient and medieval India.

Modern India minted 29 coins having pictures and themes related with nature. The very first series coin set issued in 1950 confirms our faith in nature. The One, Half and Quarter rupee nickel coins has the picture of corn sheaf while the Two, One and Half Anna copper nickel coins depict picture of a standing bull. The solitary bronze coin of One pice has the image of a galloping horse. The following chart offers details of coins having symbols from nature.

S.No.	Coin	Symbol	Weight	Metal	Year
1	20 Paise	Lotus blooming	4.50 grams	Nickel-Brass	1968
2	20 Paise	Lotus and shining sun	4.50 grams	Aluminum-Bronze	1970
3	20 Paise	World Food Day	2.20 grams	Aluminum	1982
4	20 Paise	Fisheries	2.20 grams	Aluminum	1983
5	10 Paise	Planned Families Food for All	2.30 grams	Aluminum	1974
6	10 Paise	Equality Development Peace	2.30 grams	Aluminum	1975
7	10 Paise	Food and Work for all	2.30 grams	Aluminum	1976
8	10 Paise	Food and Shelter for all	2.30 grams	Aluminum	1978
9	10 Paise	World Food Day	2.30 grams	Aluminum	1981
10	10 Paise	World Food Day	1.75 grams	Aluminum	1981
11	5 Paise	Food and Work for all	1.50 grams	Aluminum	1976
12	5 Paise	Food and Shelter for all	1.50 grams	Aluminum	1978
13	25 Paise	World Food Day	2.50 grams	Copper-Nickel	1981
14	25 Paise	Forestry for Development	2.50 grams	Copper-Nickel	1985
15	25 Paise	Rhino	2.85grams	Ferratic Stainless Steel	1988
16	50 Paise	Grow More Food	5 grams	Copper-Nickel	1973
17	50 Paise	Fisheries	5 grams	Copper-Nickel	1986
18	1 Rupee	International Youth year	6 grams	Copper-Nickel	1985
19	1 Rupee	Small Farmers	6 grams	Copper-Nickel	1987
20	1 Rupee	Rainfed Farming	6 grams	Copper-Nickel	1988
21	1 Rupee	Food and Environment	6 grams	Copper-Nickel	1989
22	1 Rupee	Food for the Future	6 grams	Copper-Nickel	1990
23	1 Rupee	Tourism Year	6 grams	Copper-Nickel	1991
24	1 Rupee	Food and Nutrition	6 grams	Copper-Nickel	1992
25	2 Rupees	Bio-diversityWorld Food Day	8 grams	Copper-Nickel	1993
26	2 Rupees	Water for life World Food Day	8 grams	Copper-Nickel	1994
27	2 Rupees	Globalizing Indian Agriculture	8 grams	Copper-Nickel	1995
28	5 Rupees	Food & Agriculture Organization	9 grams	Copper-Nickel	1995
29	10 Rupees	Food for All	15 grams	Silver	1970

### **Activity Three**

#### **PHILATELY: A WINDOW TO THE OUTER WORLD.**

Postage stamps has been attracting people from its invention. It's one of the widely popular hobby over the globe. For a teacher, it serves as a learning resource. The two thousand Indian and ten thousand foreign postage stamps proved a valuable source. Each nation issued innumerable stamps on nature. They carry clear, authentic pictures and correct information about natural phenomena. Used Indian stamps were collected through community support. In my case friends helped a lot both from India and abroad.

These stamps are pasted on black, yellow, green, pink and purple sheets with a theme. For example there is a sheet carrying stamps on technological innovations of US Another sheet carries five beautiful stamps of polish cats. With the help of students 110 such philately sheets has been prepared focusing flora and fauna of the world. Classroom exhibitions before starting the actual project work helps students to decide topics of their interest. Students having similar likings form groups and work on projects as a team. They add to my collection through exchange.

### **Activity Four**

#### **FEATHERS: THE COLOURFUL IDENTITY OF BIRDS.**

Majority of my students belong to rural area and some actually work in fields. In 2013, a group had chosen 'Bird Feathers' as the topic and the whole class participated. Students searched for quills in fields, the winding paths of forests, on the banks of river. While travelling for school, their eyes searched for the colourful tokens of birds. As a result more than five hundred quills of various size, colour and patterns were collected. The project was talk of the school. It proved helpful while teaching English lessons related with environmental topics.

Another project of the 2013-14 batch was about weed. During rainy season in the month of August, we worked on collecting weed. One sunny morning students brought bundles of 24 types of weed and grass in the classroom. It was all green and some plants were producing pleasant fragrance. They classified the weed in edible and non edible. Also they informed which one is the favourite of goats and other animals. Further they pointed out which one the farmers use to tie grass

bundles. The most interesting thing was the local names. A similar project was carried out about small seasonal flowers and the class was transformed into a garden of wild flowers.

### **RESULTS**

#### **A) Phillumeny**

Preparing phillumeny sheets every year resulted in a sound permanent learning resource. Now, we have twenty albums ready containing 2000 pages with five match box pictures on each sheet. It means 10000 matches has been pasted on sheets.

These sheets are arranged according to topics. For example in 'Transportation Company' there are five hundred pictures of different vehicles. This album has been sub divided into two parts; ancient and modern means of transportation. Again each part carried sections based on medium and wheels. Roadways section contain pictures of two, three, four and multi wheeler vehicles. The marine has pictures of different boats, passenger ships, cargo ships and oil tankers etc. The airways section carried the pictures of aircrafts, choppers and spacecrafts.

#### **B) Philately.**

Total 2000 plus Indian and 10000 plus foreign stamps are in the collection. Most of them are used ones. There are stamps from 185 nations of the world. Hundred sheets has been prepared so far representing equal number of countries. The number of stamps pasted on each sheet range from five to twenty.

There are thirty special sheets prepared on the theme of 'Bio-diversity'. It showcase some of the special stamps issued on nature by different nations. For example the marine life of Malta, the huge birds of Haiti and butterflies of Switzerland. Just one fourth of the total stamps are on sheets.

#### **C) Numismatics**

The numismatic collection includes 2000 plus Indian coins ranging from the first to the present one. They are divided into following heads; Ancient India, Sultanate, Moghul dynasty, British India, Princely States and coins of Free India. They are sub divided according to metal like silver, billion, copper, brass, bronze, nickel, cupronickel, aluminum and Ferratic Stainless Steel.

A special set of 250 coins has been prepared. These coins are fixed in three transparent acrylic sheets. The coins are visible from both sides.

There are total fifteen sheets prepared according to metal, era and denomination.

A special sheet has been prepared it exhibits the changing technology. It carries punchmark (hand struck) coins followed by casted coins of Moghuls and the machine made coins of British.

**D) Feathers**

Inspired by the work of students, a project to provide little relief to birds during hot summer of Vidarbha, was carried out two consecutive years, May 2014 and 2015. It was named as 'Home Summer Sanctuary'. In the backyard garden, earthen pots filled with water and bird feeder were kept throughout the summer to attract birdies. It was a great success when 30 species of birds

turned out in hundreds regularly. Innumerable pictures were clicked along with some interesting video clips. The quill collection received a boost during the project. Observations were noted down. Later a 12 x 18 inch size poster of each bird was developed using self taken photographs. Another poster also carried a photograph and observations related with the bird. Fifteen such twin posters of local birds were developed. It received coverage in the media. Later on this project was published in an international quarterly magazine 'Nature Watch' from Singapore (Oct.-Dec. 2017 Issue). The following table carries details of the 20 feathered visitors

S. No.	Indian Common Name	Scientific Name
1	Indian House Sparrow	<i>Passer domesticus indicus</i>
2	Indian White-eyed Sparrow (Oriental White-eye)	<i>Zosterops palpebrosus</i>
3	Indian Myna (CommonMyna)	<i>Acridotheres tristis</i>
4	Brahminy Myna (Brahminy Starling)	<i>Sturnia pagodarum</i>
5	Yellow-eyed Babbler	<i>Chrysomma sinense sinense</i>
6	Indian Pied Myna (Asian Pied Starling)	<i>Gracupica contra (Sturnus contra sordidus)</i>
7	Jungle Babbler	<i>Turdoides striata</i>
8	Indian Tailorbird	<i>Orthotomus sutorius guzuratus</i>
9	Large Pied Wagtail (White-browed Wagtail)	<i>Motocilla maderaspatensis</i>
10	Small Sunbird (Crimson-backed Sunbird)	<i>Leptocoma minima (Nectarinia minima)</i>
11	Purple Sunbird	<i>Cinnyris asiaticus (Nectarinia asiatica asiatica)</i>
12	Southern Ashy Wren Warbler (Ashy Prinia)	<i>Prinia socialis socialis</i>
13	Indian Small Green Bee Eater (Green Bee Eater)	<i>Merops orientalis orientalis</i>
14	Black Drongo	<i>Dicrurus macrocercus albirictus (Hodson)</i>
15	Large Ceylonese Parakeet (Alexandrine Parakeet)	<i>Psittacula eupatria eupatria</i>
16	Southern Blossom-headed Parakeet (Plum-headed Parakeet)	<i>Psittacula cyanocephala</i>
17	Southern Crow Pheasant (Greater Coucal)	<i>Centropus sinensis parroti</i>
18	Southern Rufous Woodpecker (Rufous Woodpecker)	<i>Micropterus brachyurus jerdonii</i>
19	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>
20	Indian Koel (Asian Koel)	<i>Eudynamus scolopaceus</i>

**DISCUSSION**

The preparing of learning resources along with project work using inexpensive and easily available material offered good returns. We

invested years in collaboration with students. The project work related with environment science became a source of joy instead of mere formality to achieve marks. Some of the experiences and

observations I would like to share through this research paper.

In a rather small school belonging to a rural area, it was always my humble attempt to let my students peep at the outer world through resources. Through coins and currency notes they observed and learned some interesting things about the bio diversity of the globe. The students mentioned some interesting facts in their projects. The Malaysian ringgit carries the picture of biggest flower of the world. Every Mauritian rupee note has 'Dodo' in the transparent part as a water mark. New Sri Lankan paper currency have pictures of different butterflies and birds. Ethiopian birr depicts agrarian life and has the pictures of bulls ploughing in the field. The colourful one thousand francs note of France is a wonderful portrait of landscape with biodiversity highlighted on both sides, and the hundred denomination paper currency of Swaziland carries pictures of African lion, elephant and rhino along with a birdie.

My students after observing pictures and feathers learned to identify the male and female of some of the birds particularly the Indian Koel. They were also able to differentiate in between the black feathers of crow and black drongo. They learned a lot about nesting, sounds and whistles of birds.

I was invited for an international conference on 'Bird Bio diversity and Tourism' to present a paper at Colombo (Sri Lanka) in Nov. 2016. The 'Summer Sanctuary' project was presented and it was appreciated by the audience.

The same one got published in form of an article in 'Nature Watch', a quarterly international magazine from Singapore. (Oct-Dec 2017 issue).

Think locally, act locally and reach globally is something we learned through these experiences.

## ACKNOWLEDGEMENTS

There is a famous dictum in English, 'Give the world the best you have and the best will come back to you'. Through these projects, I received many calls for lectures and exhibitions. Won friends all over the world, who became instrumental in taking the project to a different level. Dr. Narendra Deshmukh, Scientific officer from HBCSE, Mumbai brought coins whenever he went abroad and introduced me to the world of academics. Cindy Woolston from Brunswick, Missouri US brought hundreds of matches from different nations when she visited India as a participant of TGC program in July 2013. And above all the famous American writer Matthew Stevenson offered the philately collection of his father containing ten thousand plus stamps, hundreds of coins and innumerable currency notes just because he thought that I was making the best use of the treasure. He also appealed to his international friends and fetched more stamps. I never ever dreamt such wonderful things.

## CONCLUSION

The childhood hobbies were used initially to create some interest among students instead of using tailor made material. Contributions from students and the whole society and some international friends carried these small and simple but persistent efforts to a different level. We developed learning resources which proved helpful in other subjects also. Nowadays the new textbooks are having a separate unit on environment. Even there are lessons and poems related with natural objects like 'The Kingfisher' poem and the lesson 'Where had all the birds gone'. They prove helpful in inter disciplinary approach. Every school should have such little treasure of resources as it is inexpensive and perennial. With every passing the school can enrich and renew the resources.

## REFERENCES

- a. Common Birds July 1967 Salim Ali & Laique Fatehali National Book Trust (Marathi) New Delhi
2. Dosti Karuya Pakshanshi June 1999 Kiran Purandare Paryavaran Shikshan Kendra, Pune.
- a. Pakshikosh March 2002 Maruti Chittampalli Sahitya Prasar Kendra Nagpur.
- b. Paryavaran Shikshan May 2006 Hemant Lagvankar Abhishek typesetters Priya Lagvankar & Publishers, Pune.
- c. Bhartiya Sikke 2003 Amiteshwar Jha IIRNS Publications Anjneri, Nasik. IIRNS Publications Anjneri, Nasik.
3. Indian Coinage 2011 Sainath Reddappa Viotrix Technologies Pvt.Ltd. Chennai.

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**CONTRIBUTION OF NEWS PAPERS TO PROTECT THE HUMAN RIGHT  
(A CRITICAL STUDY OF HUMAN RIGHTS DURING 1988 TO 2018)**

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**ABSTRACT**

*There is a detraction of Human Rights gradually day by day and the man today becomes restless. Not only this, but he becomes the victim of this corrupt system. We will seek the beautiful world and happiness only when the corruption comes to an end. If the news paper will take an initiative to expose such evil practices of corruption, And people will understand the significance of prevention of corruption act and Right to information Act and use this right for their sake, uncountable such steps will be helpful to restrain the evil practices of system. The news paper should take an optimistic step to expose it and restrain the degradation of Human Rights.*

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**Keywords:** Human Rights, corrupt system

**INTRODUCTION**

United Nations Organization have published manifesto of Human Rights to make the world to know the real Right of Human being . But in the coming future, there will be the rare possibility about the protection of human Rights. The common becomes helpless to use his fundamental rights because of the degradation of his livelihood. There are two revolutionary acts in Indian Constitution i.e. Prevention of corruption Act 1988, and Right to information Act 2005. Every Indian should use these Acts aptly to vindicate the corruption and to maintain the dignity of Human Rights. Apart from this, our Indian Dailies and News paper ought to play the vital role very transparently against corruption and protect the common Indian. The common people have the only Ray of hope i.e. New papers to manifest their problems, issues and challenges.

**MATERIAL & METHOD**

Since last ten years the researcher has collected the news concerning with issues of corruption and Right to information. The critical analysis of these new paper cuttings benefit me to write this research paper. Reading the newspaper and especially the news related with the corruption and RTI, making criticism and interpreting the news and finding the conclusions it is the procedure and method behind writing this research paper. Hence this analysis of the news and the study of prevention of corruption Act and Right to

information Act supports it to reach towards conclusion.

**Result & Discussion -**

Central Government have made the provision of there Acts to punish the corrupt and to restrain the corruption. As per this act twelve type of services and every Government servant becomes the public servant. And there is a commitment to serve for the sake of the state, public and society. It is called the social duty in this Act. If some or the other public servant intentionally deny to pay his duty with sincerity, as per this act, he/she will become an offender under Ignoring the social contribution.

Misuse and misconduct of this Act if published in the news paper, that news will become the sufficient cause to take the necessary action by the police. That's why the news papers ought to support this Act by publishing and giving the exposure to such evil deeds done by the system. If some or the other way, some of the News paper deliberately deny this evil deeds with their evil interest. Such newspapers Authority also become the offender and prosecute judicial action against them. Undoubtedly our newspapers also can play an important role as Public Servant.

RTI has imparted the right to get the information from the vivid department, but as per the altruism and the people's well being, the News paper ought to publish such information and reach with the people. The News paper should take invitation in this regard to publish such RTI information to give the justice to common people. This Right is included in our constitution para 19, section (1)(A)

under freedom of Expression and it is our one of the fundamental Rights. As per my perception, if the News papers are intentionally avoiding to publish the news regarding the prevention of corruption Act 1988, such News papers may supporting to the corrupt people and their evil deeds, they must be punished under this Act.

To carry out one's duty, misuse of Government funds, contradictions as per Resolutions, Quality of the work, Delay in performing duty etc. under this Act we can seek the information. In order to make it publically published, people expect from the News papers to take initiative. As per the state information commission, Pune court circular No Sankirna/2009/chapter 51/09/Esta. Dt/5.8.2009 about the utility of Right to information Tv ansperency in the work of public Authority, Accountability of officers and employees and the alert citizen about information are the cove elements of the RTI and hence, an efficient execution of this Act will be quite beneficial for the public in such case, the News papers play the vital role of mediator between the public and the government for an implements of such useful act. The newspapers ought to play the role to evaporate the corruption.

As per the Indian penal code chapter 9, There is a provision to punish the person who support the public servants and their evil deeds, misuse of their rights. As per this IPC chapter 9, the News papers and its authorities who supports and avoid to publish the facts and deliberately hide the facts of public interest will be published legally for their illegal ignorance, including the editor, reporter, or the other authorities related with it.

As per constitution article 19 (2) Every citizen has Right to express, publish their expressions. As per the protection of Human Rights Act, 1993, The News paper are supportive to protect this Rights. If the people have opportunity to manifest their Rights through the news papers, it will protect the Human Rights and create the rapture, happiness and satisfaction in their lives and parley, also supportive to irradiate the corruption from the system.

It makes very crystal clean now that No any News paper dare to deny the news to publish in their news papers which in eslocually regarding the corruption and Human Rights and RTI as well If Same or the other News papers intentionally deny it, that will be the treasonable Deed and that person may be the traitor . Actually the News paper should take it positively becomes to publish such information will be supportive to the socially

and the nation as well. The news papers should be very transparent, straight forward and clysters clear about the Human Rights and its protection to human being and it will become to society it self. The news papers and its authorities must remember that they have already committed to the government in writing for their social justice, contribution, commitment and accountability. Hence, every news paper must give priority to the news regarding anticorruption, Human rights, RTI etc to protect this secret deeds and support to all this Acts.

News published in the news papers have its own significance which is better considered by the Government. All the Honorable courts, Emetics, Researchers, cops from every regions either the rural or urban, invention Beau rues etc all various systems and departments considers the news as authentic evidence to the possible extents. All the sectors and the renowned persons consider the news papers as prominent platform to protect the Human Rights and restrains the corruptions and having ability to pave the way towards. By considering this Government has circulated the circular No. 2016/192512/office/GAD/Secretive Dt/22 march 2016 In this circular agilest administration Departments it is compulsory for HOD's to show the cause within six hours. Government has generated the post of District information officer in every district to focus on the news against administration and governments, and inform the concerning departments to sort out the problem and take the necessary action to the conserving areas; which is quite supportive to take the necessary action against corrupt employs and officers at earliest.

If it is noticed that some or the other journalist, reporter, editor or any other concerning person tries to hide the names of corrupt persons, or demanding the bribe to do so or any evil deed regarding their intentionally which in called Yellow Journalism; and Yellow journalism is an offence. If some one deliberately hide the name of persons involved in the evil deeds in his news writing, that reporter or journalism may became the object of offence.

The news papers may keep the dignity of the people's fundasmental Rights and sometimes humiliates or dominator their fundamental Rights too. Actually, to preserve the fundamental Rights is an accountalibility or responsibility of judicial system some of the Non Government organization NGO's have also taken imitative to protect and preserve the Right. And fight against corruption



and corrupt people. Such NGO's are the support system to judiciary the Government itself and parallel doing the noble deed concerning The prevention of corruption Act 1988 and Right to information Act 2005 as well. The NGO's which are doing their social work and noble work in this area and if they have pointed out the domination of the peoples fundamental Rights or corruption such NGO's can be demanded to abolish the permission to publish the news papers.

When ever the people or any institution or NGO's submit their complaints, news, articles to publish in the concerning news papers, authorities deny to publish the news regarding corruption, RTI reputed issues by giving unnecessary reasons. And if some of the news are published with deleting certain matter in order to avoid such practices by the news papers and their authorities. Government should issues the resolution or circular to make them aware and conscious about their duties and responsibilities obviously for such government resulting certain judicial power are also required. Definitely with such GR and circular, newspapers will not dare to deny to publish the news concerning with corruption and human rights. It is also supportive to maintain the dignity of Democracy and nationality.

Hence the news paper authorities ought to take the very positive step in this issue which will be quite beneficial to restrain the corruption from and country; and as it is on of the cheapest media to use and publish, people will project or expose the so called corrupt people, administrators and the politicians as well. This Revolutionary step will pave the transparent way towards pious and

healthy democracy through the government Resolution.

After all every citizen of one country must take initiative without hesitation in this regard act and execute as per the constitutional laws, rules and regulation. Undoubtedly, its an order of the day to create the beautiful Democratic scenario to build the Nation.

### **CONCLUSIONS**

- As the corruption is increasing day by day millions of people becomes victims, Hon. President and Hon. Priminister offer focused on this issue and challenge in their speeches.
- Today in india, what so ever the Right are there to human being regarding Human Rights, here is no convenient situation in one country; that's why Human Rights and its implementation have no significance hence, Government system should be very cautions about this issues.
- The prevention of corruption Act 1988, Right to information 2005, if there two Acts will be exerted and implemented by every citizen the corruption will be restrained and convenient situation will be there for Human Right.
- The Newspapers and its authorities should consider and accept the complaints regarding corruption and publish such news in their news papers priority. But unfortunately the News paper are incapable to identify their accountability and responsibility; and that's why it is necessary to establish code of conduct for the News papars

### **REFERENCE**

1. Adv.Abhaya Shelkar -The prevention of corruption Act 1988, Nashik Law House, Aurangabad; Edition 4th, 2016
2. Rajesh Chaudhari [Editor]-Indian constitution, Chavdhari Law Publishers, Jalgaon, Edition 6<sup>th</sup>, 2014
3. Adv.Abhaya Shelkar -The Protection of Human Rights Act, 1993, Nashik Law House, Aurangabad; Edition 6th, 2016
4. Indian Gazzette, there Right to Information 2005 is published.
5. Cutting of various news papers.

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## **ROLE OF VOLLEY BALL IN PHYSICAL FITNESS OF SPORTSMAN**

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### **ABSTRACT**

*Volleyball is the second most popular sport in the world today. It is a fast and dynamic sport that is widely accepted as a highly competitive and recreational game. Today is the game is most popular in Asia and Europe. This game offer greater opportunity for the development of strength, agility, endurance, flexibility and coordinative abilities to the players. volleyball performance does not depend on technical aspects but also depends on so many aspects such as psychological, Physical, Sociological, economical, physical structure, physical fitness etc. which are help to acquire high level performance.*

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**Keywords:** Volleyball, Fitness, injury

### **INTRODUCTION**

Volleyball is a great sport that can be enjoyed by people of all ages and skill levels. It can be played year round as it can be played bath indoors and outdoors Aside from the pure enjoyment of the game.

### **VOLLEYBALL**

“A game for two teams, usually of six players, in which a large ball is hit by hand over a height net, the aim being to score points by making the ball reach the ground on the opponent’s side of the court”.

### **FITNESS BENEFITS OF VOLLEYBALL**

Volleyball is a team sport that requires great and can be very rewarding when played properly

- Burn calories and fat
- Tones and shapes the body
- Increases Metabolic rate
- Improves hand-eye coordination
- Builds agility, coordination, speed and Balance.
- Heart healthy
- Builds muscular strength
- Increases aerobic ability
- Improves Interpersonal skills
- Boosts mood and increases drive to succeed.
- Reflexes and balance
- Teamwork and communication and is a great social activity.

### **FITNESS COMPONENTS FOR VOLLEYBALL**

#### **SPEED**

Volleyball serves and smashes result in very fast ball speed, so players also need to be quick to get

to the right position to return or pass the ball. Speed both in terms of movement and reaction time, can be developed by performing sports specific exercises such as multidirectional sprinting and using a uneven ball called a reaction ball which bounces unpredictably.

#### **AGILITY**

Agility is the ability to move your body quickly and efficiently in to a position of your choosing. In volleyball this means getting in to the right. Place at the right time to play a shot. Players often have to dodge, duck and dive to make successful plays and the better their agility. The better they will be able to do this. Training for agility involves performing activities that mimic the demands of the sport including jumping drills, playing shots from awkward positions and multidirectional running, jumping and sprinting.

#### **POWER**

Power is your ability to generate strength at high speeds and is very important in volleyball. A volleyball net is 10 feet high so players need leg power to be able to jump high enough to block and smash the ball during play hitting the ball with plenty of heat requires upper body power. Power is commonly developed by performing variations of the Olympic lifts, plyometrics or jumping exercises and by training with medicine balls.

#### **FLEXIBILITY**

Squatting or lunging down low to return a volleyball requires limber-Limbs properly called flexibility. Tight muscles do not stretch vasily and if stretched to quickly or too far, may become injured. Flexible muscles are more elastic and capable of greater ranges of movement. Flexibility

is developed by stretches held for 30 seconds or longer. You can also increase your flexibility with proprioceptive neuromuscular facilitation or PNF stretching, which involves contracting a muscle hard before stretching. It to increase flexibility more rapidly.

### **ENDURANCE**

Volleyball matches are usually played to the best of 25 points, and that can take some time if the teams are closely matched. To play continuously for an extended period by of time requires good muscular, aerobic and mental endurance. Endurance is best developed by performing sub-maximal or lower intensity activities for long periods of time. Examples include body weight, squats, pushups, situps, jogging cycling and extended volleyball practice periods.

Volleyball has strong technical skills and confrontational, It is a skill type sports day net class confrontation, although the two small force will occur physical contact and confrontation, but with a strong psychological quality, physical quality and the technical and tactical requirement in sport. Volleyball training course if you do not pay attention to prevention of sports injury most likely caused by sports injury into the training process. Therefore, it is of great significance for the prevention of sports injury and the improvement of the overall level of volleyball training to strengthen the prevention and analysis of sports injury in volleyball training so many coaches pay more attention to the explanation of tactics and basic technology.

### **PREVENTING VOLLEYBALL INJURIES**

- Stretch and warmup before playing
- Eat a balanced diet and drink plenty of water
- Keep up your cardiovascular fitness and core strength.
- Get enough rest you may want to avoid playing for multiple teams to reduce the risk of overuse injuries.
- Practice good technique, consulting a specially coach will help you make the most of the mechanics.

### **COMMON VOLLEYBALL INJURIES**

- Shoulder injuries

- Knee injuries
- Ankle sprains
- Finger injuries
- Lower Back pain

### **CAUSES OF VOLLEYBALL INJURIES**

Most volleyball injuries are a result of overuse and overtraining playing on multiple teams during the year gives the young athlete less time for proper rest between practice and games.

The Volleyball injury refers to all injury in volleyball, occurrence factors of volleyball injury has multiple, related to the technical movement Training arrangement, training level psychological quality and other factors, especially because of volleyball technology often is done in the squat state or jump in to the air. It is very easy to cause injury of the knee, stomp, waist, shoulders and other parts.

The characteristics of volleyball outstanding not only requires more height but also must have the required sensitivity, strength and endurance, which requires high quality cable and psychological quality for the body, Treat injuries as they occur and allow your body to completely recover before heading back out on the court.

### **EAT WELL FOR YOUR VOLLEYBALL SUCCESS**

The key to great volleyball performance is optimal nutrition every day, not just competition day. For quick burst of energy like jumping, anaerobic metabolism kicks in and is fueled by stored carbohydrates also known as muscle glycogen.

Endurance requires optional blood sugar and a combination of circulating fats and amino acids from protein. Proper hydration is also essential Don't expect that your performance will improve by miracle or luck you need to fuel your body well and fit.

### **CONCLUSION**

Volleyball is a great game that has sustained its reputation for fantastic fun and competitive play for over a century. It you are looking for a high-energy game that supports teamwork and athleticism then this may be the perfect sport for you

### **REFERENCES**

1. [www.upmc.com>services>for-athletes](http://www.upmc.com/services/for-athletes)
2. [https://books.google.co.in>books](https://books.google.co.in/books)
3. [https://books.google.co.in>books](https://books.google.co.in/books)
4. [https://injepijournal.springeropen.com>](https://injepijournal.springeropen.com)

## LIBRARIES GOING GREEN: SUSTAINABLE DEVELOPMENT IN THE EVERYDAY LIFE OF THE LIBRARY

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### ABSTRACT

*Green image is a good image for the libraries and should use their way of going green to promote a powerful green image towards library users. A Green Library also known as a sustainable library, is a library built with environmental concerns in mind. Green libraries are a part of the larger green building movement. A study of Green libraries revealed that not only has energy conservation become important, but that spaces designed for users. This paper highlights on sustainable or Green library buildings that are inspiring, functional, and successful and to analyze the importance of green libraries; to identify the standards for green libraries in India, challenges to libraries and library professionals who seek to be positive agents of learning for the communities. It also suggests possible issues, trends, challenges to be faced by future library.*

**Keywords:** Green Library, Sustainable Library, Environments, Green Building, LEED.

### INTRODUCTION

Everyone is talking about “Being Green”. It seems the right things to do, especially if we want our great great-children to live well on this planet. After initial research and thinking about the concept of this paper, we realized that there are many resources for designing green buildings and living a green life. But we found no practical how-to guide for both evaluating facilities and operations and providing a range of solutions towards greening a library. The world keeps on changing and switching from one phase to another, traditional to Industrial to electronic. It is unfortunate that green library movement has not reached the critical mass two decades ago. Libraries have not fully technologically been transformed. This might have been a reason for not being interested in green library movement. Indian Libraries should initiate actions to go green library services. Green library management emphasizes a new mindset of taking responsibility for the stability of nature, health of library users and staff and catering for the needs and interest of future generations of users. Libraries as non-commercial and service oriented public buildings are particularly suited to give examples to illustrate the idea of sustainability, to distribute and to disseminate this idea to the people. We need to develop sustainable environment so that coming generation could survive well and green libraries are one of the salutations.

### DEFINITIONS

A Green library, also known as a sustainable library, is a library built with environmental concerns in mind. Green libraries are a part of the larger green building movement. There is no univocal definition of a green library.

The online Dictionary of Library and Information Science defines Green Libraries as: A Library designed to minimize negative impact on the natural environment and maximize indoor environment quality by means of careful site selection, use of natural construction materials and biodegradable products, conservation of resources (water, energy, paper, responsible waste, disposal, Recycling etc). In new constructing and library Renovation, sustainability is increasingly achieved through leadership in energy and environment Design certification a Rating system developed and administered by the U.S. Green building council.

### WHAT IS GREEN BUILDING

LEED uses five different categories to Judge a building sustainability.

- **Site location:**

The library should be located in a densely populated area, near a number of other services related buildings. People should be able to reach the building by public transportation and the parking lots should give

priority parking to those driving energy efficient vehicle.

- **Water conservation:**

Use of roof water harvesting, green toilets, water recycling, etc. can save lot of water for proper landscaping and greenery in and outside the library building.

- **Energy efficiency:**

In the LEED rating system it is the heaviest weighted of all the categories. On site renewable energy systems, including solar, wind, and geothermal, provide an independent supply of energy. Use of wind and sun can manage temperature and light in place of electricity. It saves lot of natural resources like coal and emission of harmful gases like Co<sub>2</sub> which will be helpful in reducing global warming.

- **Building Materials:**

Major responsibility for selecting materials for the library that can be produced without causing too much damage to the natural environment. Less use of wood will save many trees. Use of locally available material will save transport cost and fuel. It also includes use of biodegradable materials, non use of plastics and other such products.

- **Indoor air quality:**

Green buildings need to be designed in a way in which the air gets recycled, and does not stay stagnant. Least use of air conditioners will reduce emission of harmful gases responsible for holes in ozone layer and intern global warming. Indoor plants significantly improve a whole range of aspects of our indoor environment.

### **DESIGNING GREEN LIBRARY BUILDING**

First, a sustainable building makes a statement that the library is investing in the future of the community. The systems that support the physical building and operations as well as the supplies and services offered or used by the library. Indian Green Building Council defines "A green building is one which uses less water, optimizes energy efficiency, conserves natural resources, generates less waste and provides healthier spaces for occupants, as compared to a conventional building." As more people take environmentalism seriously, a green image can improve an institution's image. Brown identified the following green designing elements, which can be incorporated into libraries.

- Community collaborating- makes sure that community assets are efficiently used and helps to maintain public support.
- Daylight- pair daylight with artificial lighting and reduce energy costs.
- Green materials- use renewable materials like wood, bamboo.
- Green roofs
- Raised floor systems
- Energy efficiency
- Natural Ventilation
- Green power and renewable energy
- Indoor environment quality.

### **GREEN LIBRARIES IN INDIA**

Now many countries all over the world have been enjoying the benefits of green libraries but in India a very few attempts have been made to develop sustainable library buildings. A survey made of four university libraries (Calcutta University Library, Mumbai University Library, Madras University Library, Delhi University Library) by Chakraborty (2013) reveals that although measures were taken care off a long time ago at their establishment time but some suggestions also need to be adopted to solve the problems in current Environment.

India has taken initiative in green movement in the world to save the earth. Before the UN Framework Convention on climate change (UNFCCC) to be held in Paris in Dec.2015. India intend to submit Intended Nationally Determined Contributions (INDC) which will have, apart from technology and capacity building, adoption and mitigation, US, China, European Union and other 50 countries have already submitted INDC (15). Let us hope a green future in the world in India.

### **STANDARDS FOR GREEN LIBRARIES**

- **Indian Green building Council (IGBC):**  
Create the possibility for Green Library Building construction which otherwise would have been a utopian fantasy. Indian Green Buildings Council (IGBC) established in the year 2001 to promote and rate Green buildings in India. There are about 2190 registered buildings, 398 rated buildings and also 1082 IGBC aggregated professionals.
- **Leadership in Energy and Environmental Design (LEED-India):**

Leadership in Energy and Environmental Design (LEED- India) green building rating system is a nationally and internationally accepted benchmark for the design, construction and operation of high performance green buildings.

### **GREEN LIBRARY CHALLENGES**

- Libraries have specific needs that raise some extra challenges. Challenges are:
- cost of constructing green building has become affordable to other entities, libraries will face issues in meeting green goals as they are subject to stringent budget cuts especially when reengineering, or reconstructing library structures one cannot forget the cost associated with it.
- Possibilities to convince the administration who would otherwise object the idea executing green library practices due to their unawareness.
- It is likely to expect lack of awareness in green technology and among the employees who have been recruited with traditional knowledge and skills.
- To expose the professionals to the latest development which directly or indirectly affect them.
- Attitudinal barriers play significant role in slowing down the sustainable practices in libraries. There is a well laid plan for green library building will remove resistance to change.
- For the preservation, books must be kept away from sunlight as well as moisture and temperature changes.
- A common strategy in green design is to raise the floors to increase circulation, but the weight of the stacks can be an impediment to this strategy.

### **CONCLUSION**

Obviously a common and very prominent feature of the sustainable design and construction of green library buildings is the special emphasis given to the concept of protection. Protection in this sense covers natural resources (earth, air and water).

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Depending on the site chosen it will cover nature and landscape; it will encompass the use of material-related and energy resources and finally, it covers the protection of the climate and thus the health of each individual. Environmental protection has become one of the social and cultural values of citizens when stating the necessity of taking responsible action and finds expression within the design and Library building process. Institutions increasingly choose to implement Environmental Sustainability strategic plans. Libraries are discovering that their green building gives them a great opportunity to educate the citizenry. For the next generation, library professionals should move beyond environmental sustainability symbolized by various practices of “greening libraries” and focus on decisive and clearheaded steps to guarantee future sustainable development of libraries.

### **SUGGESTIONS**

Following suggestions are made for Going Green Libraries:-

- Implanting the convention of eco- friendly libraries among its users by inviting them to participate in “Go Green Drive”.
- “Economy and Ecology” are the notions for making libraries flourishing, prosperous and carbon neutral.
- Successful implementation of green libraries demands correct value positioning of patrons.
- Libraries can arrange strategic thinking and planning sessions to ensure sustainability.
- Advantage of cloud computing services should be perfectly reaped out hence evading the print materials.
- Library buildings should be properly planned using Green Building Standards.
- Roof water harvesting and roof top gardens, etc. should be encouraged, Use of solar energy should be promoted at roof tops;
- Proper reader spaces should be made available with the use of natural resources.
- Libraries should take initiatives to publicize green library impacts to its readers.

### **REFERENCES**

1. Agashe, Prince Ajaykumar T. Green libraries initiatives at international level and prospects in India. e-Library Science Research Journal, 2013.1(7).
2. Blair,C.A.. Creating a Green Library Website and Directory: A Discussion of the Process and Results. A Master’s Project for the M.S. in L.S degree. 2010. 1-15.

3. Brown, B. The new green standard: With the LEED rating system in place it is easier to make sure your new library saves money as it treads lightly on natural resources [Electron Version]. *Library Journal*, 2003. 128(20), 61-4.
4. Chakraborty, S. Going green or not: realities of the Indian metropolis Libraries. *IFLA WLIC*.2013.1-13.
5. Chauvan,K. Green Initiatives for Libraries: An Environment for Next Generation. *National Academy of Agriculture Science*.2015.33(2).1893-1897.
6. Datta,S. Green is the new Black: Bringing the Libraries into the Green. *International Journal of Digital Library Services*.2015:5(3).59-68.
7. Dorothea, S. The Green Library: The challenge of environmental sustainability. *IFLA Association*161.
8. Genovese,P. and Genovese,P. Sustainable libraries, Sustainable Services: A Global view. <http://conference.ifla.org/ifla77.2011.1-22>
9. Jena,S.K. Environmentally sustainable services for academic libraries: An overview.
10. Universe of Emerging Technologies and Science.2015.2 (4)
11. Malode, A.V. Green Library: An overview' Research Journey' *International Multidisciplinary. E- Research Journal*.2014.1 (4).13-17.
12. Shah,L. , Kumar, S. And Shah,M.K. Green Libraries in Academic Institutions: need of the Hour. *International Journals of Research granthalaya.Social Issues and Environmental Problems*, 2015.3 (9)1-5.
13. Suresh Kumar, P.K., & Antoo K.D. Greening the library for sustainable development.
14. Kerala University Library, Thiruvananthapuram, Prajyoti Niketan College Thrissur.
15. Oxford English Dictionary, New York : Oxford University Press, vol. V (1989): 811
16. <http://conference.ifla.org/ifla77.2011>. (Last accessed on 12/10/2015)
17. [http:// wikipedia.org/wiki/Green library](http://wikipedia.org/wiki/Green_library) (Last accessed on 12/10/2015)



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## **USE OF MODERN TECHNOLOGY IN TEACHING ENGLISH LANGUAGE**

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### **ABSTRACT**

*Last few years have witnessed a revolution due to emergence of technology, and have brought tremendous change in the lifestyle of Society. This admirable development of information technology has also, offered a better opportunity to use modern technology in the process of teaching English language. Today, we have a lot of digital equipments, audio-visual and electronics devices from the world of technology, such as, smart phones, TV, CD Rom, Computers, the Internet, Electronic Dictionary, Email, Blogs and Audio Cassettes, Power Point presentations, Videos, DVD's or VCD's. This paper tries to analyze the use of advance technology in teaching of English language and suggests some new ways and techniques for teachers and learners which will be helpful to them to overcome the difficulties they face.*

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**Keywords:** *Modern Technology, Use of ICT, Audio-visual aids, Information technology*

### **INTRODUCTION**

In this beautiful world, everyone has got connected to every area by means of communication. The ability to communicate in English is the most powerful means of interaction at all levels. Realizing the importance of English language even the government has taken the decision to make it mandatory from the very beginning of schooling. Spoken language is Communicative tool which is frequently used in social interaction. Oral conversation and written correspondence, sometimes with the help of new technology, are also the best mediums of effective communication. These all things are seem to be operated through English language more effectively.

English is second and third language subject in schools and colleges. Nowadays the students start to learn English language from first standard. But even after studying this language for twelve to fifteen years the student cannot become able to use this language for communication in need. They cannot speak for few minutes in English. They even cannot write correct sentences when necessary. Their poor performance in English becomes the major obstacle in their progress. The youth coming from rural area always carries inferiority about English language. With the development of society, teaching English language skills to the students of rural educational institutions has become a crucial issue for the teachers in English especially who are serving in rural areas. To change this pathetic situation some

remedies must be find out. Present study intends to use of modern technology in teaching of English language, which provides so many options as making teaching interesting and also making teaching more productive in terms of improvements.

### **HYPOTHESIS**

It is established as a proven fact to say that English is tough to study and to understand despite the fact that it is the easiest language in the whole world to learn.

Teaching is not an easy job. It requires highest kind of discipline and devotion. Language is product made up of binary opposites. A teacher has to have courage to bring to the notice of his students repressed or marginalized voices that so-called key ideas contain.

### **OBJECTIVES OF THE STUDY**

- To discuss the perspective and problems of teaching English at undergraduate level and to suggest the use of modern technology in teaching of English language.
- To rectify the old methods and techniques of teaching English and few innovative methods is to be introduced.
- To improve the academic standard of students and to make them able to face new challenges in future.



## **METHODOLOGY**

### **DESCRIPTIVE OBSERVATIONAL METHOD (LIBRARY OBSERVATION)**

The present paper is based on Primary and Secondary Sources of data. This data has been collected from various books, journals, study materials and websites. Considering the objectives and the nature of collected data, the 'Descriptive Observational Method' is adopted in the present study.

### **ANALYSIS**

It is observed that there are limited numbers of teachers who are eager to use technology in their teaching. But the majority of teaching community still teaches in the traditional manner. These traditional methods are not bad or completely outdated in present era. In fact, till date they are proving to be useful also. However, there are many more opportunities for teachers to use modern technology in their teaching process which can change the scenario tremendously. Technology provides so many options as making teaching interesting and also making teaching more productive in terms of improvements. Technology is utilized for the upliftment of modern styles which satisfies both visual and auditory senses of the students.

Advance digital technologies are highly useful for teachers to teach English language to their students effectively. Even students can learn their subject independently through this technology which makes their language development easily possible. For example, if student wants to develop the basic skill of writing as a starting point, technology in the form of Computer programme 'MS-word' allows him to work at the language. He or she goes through a simple process of composing text until it is fully comprehensible to others and is accurate. They can write a draft, show it to others and, based on feedback, can make changes to improve the written text. The computer programmes can also help them by showing the errors in spellings and grammar. Technology makes this much easier and enabled even common students to edit and to produce the highest-quality write-ups.

The Internet is a valuable tool for English teaching. Teachers and learners can search internet to read, listen or watch the topics about study of English language, and can then write or speak about what they have found, sharing others in the class or in other groups. Many students learn how

to use the Internet as a tool in itself. However, I feel that the Internet can be better mastered as a means through which a content area can be taught. The World Wide Web makes it possible for students to tackle a huge amount of human experience. In such a way, they can learn by doing things themselves. They become the creators not just the receivers of knowledge.

Linking your class to other classes around the world, using tools such as video conferencing, can give a reason for a learner to ask a question and then try to understand the response. It might also provide support for the teacher, too. The technology mediates the process.

Inviting experts to visit classrooms via video can be an interactive experience for students. Specialists often have busy schedules, and video conferencing can reduce the time and expense of travel and simplify a visit from a subject-matter expert by projecting him or her directly into the classroom from anywhere.

Another area in which technology can be used very effectively is project work. Teachers have always tried to encourage students to learn about things through English language. Project work is a great way to improve their skills. The use of technology makes this possible anywhere in the world. There are many benefits for students from project based learning. They are inspired to gain a deeper appreciation for the subject at hand. Studies have suggested that students who learn in this way are better able to retain the information they learned in class, as opposed conventional methods of passive learning and note-taking.

## **CONCLUSION**

It is true that one of the ultimate goals of the use of modern technology in teaching English is to promote learning interest, which can be a practical way to get them involved in the language learning. Nowadays, technology can be very important part of English language learning throughout the world at all levels. Concerning the development of technology, we believe that in future, the use of multimedia English teaching will be further developed. Therefore, it promises that the teaching quality will definitely, be improved. The basic skills of English language can be effectively cultivated. Ultimately, the use of modern technology will be flourishing and facilitates the teachers and students in the study of English language

## REFERENCES

1. Gupta, Deepti. Communicative Language Teaching - Then and now. New Delhi : Books Plus : 1965 Print.
2. Gupta, R.S., English in India, Issues and Problem : Academic Foundation.
3. Sheorey, Ravi, Learning and Teaching in India : Saga Publication, New Delhi.
4. Cunnning worth, A Choosing your course book. Heinemann, 1995.
5. Sanders, Andrew, The Short Oxford Hist. of Eng. Lit., OUP, New Delhi. (2010).
6. Harry , Blamires, A History of Literary Criticism, MacMillan India Ltd. Bombay. (2001)
7. Lodge, Devid with Wood, Nigel, Modern Criticism and Theory (A Reader), II Edn. Pearson Education, Singapore, (2004)
8. Covington, Making the Grade: A Self-Worth Perspective on Motivation and School Reform. Cambridge: Cambridge University Press, M.1992.
9. Ur Penny. Grammar Practice Activities. Cambridge: Cambridge University Press, 1988.
10. Currey,P. Teaching English Grammar, 1960.
11. Deshmukh, Purushottam, Factors Responsible for Poor Performance in English, Research Journal, 2012.
12. Solanki D. Shyamlee1, Use of Technology in English Language Teaching and Learning”: An Analysis., 2012 International Conference on Language, Medias and Culture, IPEDR vol.33 (2012)



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## **MODERN TRENDS AND APPROACHES IN ENGLISH LANGUAGE TEACHING**

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### **ABSTRACT**

*English Language Teaching (ELT) have changed over the last decade Language teaching in the 21<sup>st</sup> Century has undergone changes and innovations. The decline of methods, a growing emphasis on skills, the creation of new knowledge about English teaching of multiple language skills*

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**Keywords:** English Language Teaching (ELT)

### **INTRODUCTION**

Nowadays, English is the common means of communication between the peoples of different nations. It is considered global language and its various areas have been largely investigated, especially that of EFL teaching and learning. It is very clear that the ELT trends that were very popular in the past have vanished today and have been substituted by others. So basically this paper present recent and popular trends and approaches in ELT.

English Language Teaching (ELT) have changed over the last decade Language teaching in the 21<sup>st</sup> Century has undergone changes and innovations. The decline of methods, a growing emphasis on skills, the creation of new knowledge about English teaching of multiple language skills.

#### **1) Teaching with Technology :-**

Language teaching and computers have been worked hand to hand for a long time and has become a teaching tool in classroom. But at the same time computers and technology are still a source of uncertainties for many teachers everywhere in the world despite the latest advances available to language teaching such as special blogs, websites, wikis, methods, journals etc. Teaching with technology is connected with ICT.

The 21<sup>st</sup> century teachers integrate technology into their classroom and build confidence to learn how to use technology in meaningful ways. To improve the classroom environment and make the teaching interesting every classroom should have, word processors, digital camera, digital video, Internet, web pages, E-mail, video conferencing, presentation, software etc.

#### **2) Learning by doing :-**

A lot of emphasis is given on teaching by performing actions. By using the actions, the concept sinks deep into the mind and one tends to become what one does. Various activities increase the thinking power and it gives vividness to experience. For example, when the students have just returned from a picnic, they would describe the experience. They should make a practice of writing whatever they do, wherever they go, or make a trip. This is how learning process is accomplished by 'doing'. This improves vocabulary and action words.

#### **3) Functional Approach :-**

Before the functional approach was taken into consideration, reading and writing was introduced with letters of alphabets, which are abstract to the pupils. The modern trend says it is necessary to begin with the words of immediate interest and which comes from their experience. A variety of exercises should be provided to prepare them to read and write effectively.

#### **4) Audio-Visual Aids :-**

Modern trends in Teaching English lays more stress on use of Audio-Visual aids to attract the interest of the students. These are considered to be an integral part of the teaching of foreign language. Visual pictures, films, phone records create new life in the bones of the students. A teacher should harness the potentialities and capabilities of the students for the purpose.

#### **5) Networking groups :-**

E-communication has made possible a huge range of networking possibilities, which includes internet groups, discussion and chat room etc. The main purpose behind this type of networking is that it enables to create and locate the local knowledge that is in need. This enables us to become less dependent on knowledge

generated by experts in other contexts and published books. This networking groups enables us to participate in the knowledge networking and this knowledge itself becomes a process.

**6) Play-Way-Method :-**

To develop interest in student is the main concern of the modern way of education. While learning through 'Play-Way-Method', the student is less conscious of a sense of work, hence no feeling of tiresome, he learns in a better way. Play-Way-Method gives the remarkable results and feedback. Plays, dialogues, debates, competition of vocabulary stimulate the interest of the student learning language.

**7) Problem solving approach :-**

This approach targets at creating in them the habits of thinking and reflection. If a teacher offers a problem to the students that in a market place there is a traffic jam packed. The students will try to explore the ways, suggesting alternative diversions, parking system etc. For this definitely they will use vocabulary, sentence structure, grammar for their comments, remedies without any sense of boredom. Hence they are motivated towards the process.

## CONCLUSION

English being the language of international communications is widely spoken all over the world. It is urgent need of the day for running first class business at international level, so is the key to success. The future is always uncertain when anticipating methodological directions in the second language teaching. They are linked to present concerns on education, and they reflect current trends of language curriculum development at the cognitive strategies, literature, grammar, phonetics or technological innovative methods. The Internet Age anticipates the development of teaching and learning by means of online system.

A question rises for language educators are about 'what content' and 'how much content'. The goal is to develop interest and promote optimal development of second language competence. The natural content for language educator is to develop interest in literature, pragmatics, analysis, grammar etc. The primary target when studying any kind of science or language is self-development, therefore the above methods are of maximal consideration taking into student's needs. The professional skill and competency of the teacher lies in applying such tools to capture his interest and attention in order to help remove the boredom that comes in his way of learning English as a foreign language

## REFERENCES

1. Rodgers T Methodology in the New Millennium // Forum, Vol-38 no2, April-June 2000 - p. 12-15
2. Williams M and Burdon R L Psychology for language Teachers- Cambridge University press, 1997- P.78
3. Willis J Task- Based Language learning. Cambridge University press, 2001 – p.3
4. [www.wikipedia](http://www.wikipedia) (2006) teaching English as a foreign language Retrieved Jan 16, 2009

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## **IS SOCIAL MEDIA CONTAGION TO EMOTIONAL STATES OF COLLEGIANS OFFERING VARIOUS STUDY STREAMS?**

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### **ABSTRACT**

Life of young collegians is highly influenced by social media. It has led to develop e-identity and e-personality. Now a day emotions of the youngsters are no more personal experience, but has become e-emotions. The present study aimed to study whether social media addiction is contagion to emotional states of the collegians. The sample comprised of 161 college students (Male-56, Female-105). Social Media Disorder Scale and Eight State Questionnaire were used. Mean scores obtained on both measures shows little variation. T value of between correlated means of emotional states exhibited non significant result. Correlation coefficient between media addiction and emotional states was negative and non-significant. Even Chi square test across study stream and gender exhibited non significant results. It is concluded that social media is not contagion to emotional states. Changes in emotional states are only temporary and can be attributed to the factor of chance.

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**Keywords:** Social media disorder, emotional states, body dissatisfaction, emotional contagion.

### **INTRODUCTION**

Recently, social media was in media due to its adverse effects on teenagers and the youngsters. The internet games like 'Blue whale challenge', 'Pink whale challenge', 'Pokoman go', taking selfies at risky places like on running railways or at the overflow dams indicates that in younger generation internet addiction is increasing day by day and they are becoming over conscious about their presence in social media. Even in interpersonal relationships, social media has caused tremendous change. One-to-one contact is replaced by virtual relationship and this has led to e-identity, e-personality and have divulged the emotional life of youngsters.

The speed of forwarding the message and posting selfie is so fast that it seems like a contagion. Even the emotional states can be transferred to other via emotional contagion, leading people to experience the same emotions without their awareness. In other words, due to social media emotional world of an individual is now no more private, but emotions have become e-emotions.

Emotional contagion is well established in laboratory experiments. In such experiments it is found that without knowing people transfer positive and negative emotions to others. Data from large real-world social network, collected over a 20 year period suggests that longer lasting moods (e.g. depression, happiness) can transferred

through networks, but the results are controversial (Flower and Christakis, 2008).

### **OPERATIONAL DEFINITIONS**

**Social media disorder-** Social media disorder means preoccupation with instagram, facebook, selfie taking behavior that enable the user to continuous chatting on computer and smart phone. In the present work, nine factors related to social media have been incorporated. They are preoccupation, tolerance, withdrawal, persistency, escapism, problems, deception, displacement and conflict.

**Emotional states-**Emotional states are a mixture of psychological and physiological reactions. In the present work eight emotional states are taken into consideration. They are anxiety, stress, depression, regression, fatigue, guilt, extraversion and arousal.

### **SOCIAL MEDIA ADDICTION AND EMOTIONAL STATES**

Over the past decade, social media addiction has emerged two major arena of research. First, use of internet for gambling and pornography are common among youngsters (Kuss and Griffiths, 2012; Griffiths, 2012). Secondly, excessive use of social media has manifest a range of certain psychological problems such as depression, attention deficit, hyperactivity disorder, social isolation and low self esteem (Guangheng, et al. 2011).

Young collegians, both males and females, are more conscious about physical appearance. However, intense desire to be physically attractive leads to discrepancy between real and ideal body image which ultimately results in certain psychological problems including body dissatisfaction and disturbances in emotional states. Researchers have cited that mass media is a culprit behind the growing trend of body dissatisfaction among young women (Dittmar, 2009). Fredrickson and Roberts (1997) asserted that body image is important for both men and women; however, women are more prone to body dissatisfaction because they are more likely to be seen as physical and sexual objects whose social values can be inferred from bodily appearance. Young women who experience a large amount of body dissatisfaction might take and post selfies in an attempt to garner affirming messages that might boost their own self confidence.

Research on gender differences in use of social media and selfie behavior are equivocal. Fox and Rooney (2015) found that males are more prone to selfie posting than females. On the contrary, Manago, Graham, Greenfield and Salimkhan, (2008) have reported that females are more prone to use social media for posting selfies. This is mainly because frequent posting of selfies by women could be related to their need for physically attractive for self-presentation or an elevated need to belong in a group, which may be as less important to men. Dhir, et al. (2016a) have reported preponderance of women in use of social media and they are less likely to use privacy – preserving strategies compared to young male adults. Their selfie photos to make them look impressive before posting them on social media. It tends to portray women of below average thinness and retouches and airbrushes their subjects until they reach unrealistically perfect level of physical beauty (Hass, et al., 2012). Young women might develop body image issues if they compare themselves to social norms of beauty as displayed in these media representation (Bergstorm, et al., 2009). Peer pressure is also one of the important variables in selfie behavior. Tandoc, Ferrucci and Duffy (2015) have reported that individuals who are in peer groups are characterized by high degrees of social comparison and competition among members are more likely to take selfies and post photos on social networking sites to make themselves look more outstanding than their peers. The foregoing review states that excessive use of social media may be particularly problematic to

young people. Therefore, in the present work the factor of social media addiction, study stream and gender were incorporated. It aimed to find whether social media is contagion to emotional states of youngsters offering various study streams.

### **AIM AND OBJECTIVES OF THE STUDY**

Main aim of this study is to find impact of social media on emotional states of youngsters from various study streams.

Objectives- Major objectives of the study are...

- 1- To explore the social media contagion on emotional states of collegians.
- 2- To find the strength of association between social media disorder and emotional states of youngsters.
- 3- To study differences in the use of social media among students offering different study courses.
- 4- To study gender differences in the use of social media among college youngsters.
- 5- To study differences in the emotional states of collegians offering different study courses.
- 6- To study gender differences in the emotional states of college youngsters.

Hypotheses:

Assuming other factors are kept constant it is hypothesized that

- H1- Social media addiction is contagion to emotional states of collegians.
- H2- There will be strong positive strength of association between social media disorder and emotional states.
- H3- Students offering various study courses will not differ significantly in the use of social media.
- H4- Gender will not be a significant factor in the use of social media.
- H5- There will not be significant difference in the emotional states of collegians offering different study courses.
- H-6 Gender will not be significant factor in the emotional states of college youngsters.

**Sample:** The sample comprised of 161 (Male- 56 and Female- 105) under graduate and post graduate students from science, computer, pharmacy and management stream.

**Tools:** The Social Media Disorder Scale by Ringa, et al. (2016) was used. The scale comprised 27 items and nine subscales including preoccupation, tolerance, withdrawal, persistency, escapism, problems, deception, displacement and conflict. IPAT Eight States Emotional State Questionnaire

was used to assess emotional states of the subjects. The test comprised of 96 items. It measures anxiety, stress, depression, regression, fatigue, guilt, extraversion and arousal. The validity and reliability reported by the authors of the tools is quite high.

In the present study three independent variables were incorporated, they are social media addiction, gender and study stream. A social media disorder scale and emotional states questionnaire were administered in group form. The average scores obtained by the subjects are given in following tables.

### STATISTICAL INTERPRETATION

**Table: 1 Faculty-wise distribution of Mean values on sub-tests of Social Media Disorder Scale.**

Faculty/Sub-tests	Preoccu- pation	Tole- rance	With- drawal	Persis- tency	Esca- pism	Prob- lems	Decep- tion	Displace- ment	Con- flict
Science	9.85	9.55	8.39	9.07	9.16	7.85	7.83	7.67	7.32
BCA	10.28	9.66	9.33	9.46	9.3	9.25	8.92	8.61	8.35
Pharmacy	9.14	8.02	7.32	7.91	8.41	7.08	5.82	6.91	6.73
MBA	9.78	9.64	8.67	9.28	9.92	8.82	7.85	7.64	7.21

**Table No. 2 Faculty-wise distributions of Mean values on sub-tests of Emotional States Questionnaire**

Faculty/Sub-tests	Anxiety	Stress	Depre- ssion	Regre- ssion	Fatigue	Guilt	Extra- version	Arousal
Science	16.30	14.07	16.58	14.98	17.55	16.25	15.19	7.32
BCA	16.30	15.30	15.12	15.28	16.97	16.48	16.41	8.35
Pharmacy	17.05	15.79	14.97	13.58	18.00	17.02	16.17	6.73
MBA	16.35	14.46	15.32	13.57	18.39	15.96	15.50	7.21

Values depicted in table no. 1 and table no. 2 are average scores obtained by students offering various study courses. Careful observation of the values in the above tables shows that there is considerable variation in the responses of all groups. However, in the present work only total test/scale values are incorporated for interpretation.

**Table: 3 Stream-wise Mean and Standard Deviation values obtained on the basis of total score on Social Media Disorder Scale and Emotional States Questionnaire.**

Faculty	N	Social Media Disorder		Emotional States	
		Mean	SD	Mean	SD
Science	56	69.41	21.00	124.75	20.73
BCA	39	74.84	19.05	126.56	17.04
Pharmacy	34	60.64	22.46	125.26	22.06
MBA	32	71.64	19.60	121.71	14.75

**Table: 4 Gender-wise Mean and Standard Deviation values obtained on the basis of total score on Social Media Disorder Scale and Emotional States Questionnaire.**

Gender	N	Social Media Disorder		Emotional States	
		Mean	SD	Mean	SD
Male	56	73.90	19.02	122.17	17.04
Female	105	73.99	24.61	126.05	11.22

The values depicted in table no 3&4 shows that, stream-wise there is a greater variation in average performance on Social Media Disorder Scale. Whereas in emotional states there is not much variation except MBA students exhibiting lowest score. Gender-wise distribution shows that on Social Media Disorder Scale, male and female subjects exhibiting almost similar scores. In emotional states, females surpassing males, exhibiting higher average score but less variation.

**Table: 5 Mean, Correlation Coefficient and t values obtained on the basis of total score on**

**Emotional States Questionnaire and Social Media Disorder Scale.**

	Social Media Disorder	Emotional states
Mean	76.20	123.28
SD	24.69	21.62
r	-0.05 (N=161)	
t *	1.67	

\*Between correlated means of Emotional States Scores

**Table: 6 Chi square values obtained across faculty and gender on Emotional States Questionnaire and Social Media Disorder Scale.**

Faculty/Gender	Social Media Disorder	Emotional States	df
Faculty	1.60	0.1	3
Gender	0.001	0.06	1

The main objective of the present work was to find out the whether social media addiction is contagion to emotional states of the college youngsters. In order to reveal this effect Social Media Disorder Scale was administered between two sessions of Emotional States Questionnaire. t value (Table-5) between two correlated means of Emotional States Questionnaire yielded non significant result ( $p > .05$ ,  $df = 160$ ). It means that social media contagion is occurred by chance only, in other words changes in emotional states are temporary.

In order to fetch the strength of association between Social Media Disorder and Emotional States Pearson Product Moment Correlation was computed. The obtained value is -0.05, it is negative and non significant ( $p > .05$ ,  $df = 160$ ). For further interpretation the data were treated by Chi Square test of significance. Faculty wise on Social Media Disorder Scale and on Emotional States Questionnaire the obtained values are 1.6 and 0.1 respectively and are non significant ( $P > .05$   $df = 3$ ). In case of gender differences they are 0.0001 and 0.06, respectively (Table-6), on both measures are non significant ( $p > 0.06$  and  $p > 0.0001$ ,  $df = 1$ ). It indicates that differences in obtained scores are attributed to the factor of chance only.

**DISCUSSION**

The younger generation is quite aware about their physical appearance, status and position in the group and quite conscious about their e-personality and internet profile. Many researchers have

examined the role of social media and personality traits. The results of these studies suggest that social media activity is related to several obsessed personality traits including emotional problems. This is a big avenue to investigate whether these traits are developed out of the influence of social media or such traits enable an individual to use this media at great extent.

The present work entailed to test six different hypotheses. On the basis of the data as well as test of significance (t test and Chi Square) it is concluded that first two hypotheses were not strongly supported. It was hypothesized that social media addiction is contagion to emotional states of collegians. The results were not as per expectations. On the contrary, previous studies revealed that excessive use of internet and social networking platforms could weaken the connections between individuals and their families, friends and loved ones. And it makes an individual to feel lonelier, depressed and certain problems related to emotional states (Pantic, 2014; Yellowes and Marks, 2007). The second hypothesis was there will be strong positive strength of association between social media disorder and emotional states. The data did not support the hypothesis. It means that social media does not play significant role in emotional states. Therefore, whatever the differences in average score observed they are attributed to the factor of chance only and variations in emotional moods are temporary.

Remaining four hypotheses (H3, H4, H5 and H6) were related to stream-wise and gender-wise differences in the use of social media and differences in the emotional states of young collegians. All these hypotheses were strongly supported by the data. This is mainly because communication technology is changing vary rapidly. As far social media is concerned, this change is fast. It appears that there is a synchrony between media generation (i.e., 1-G, 2-G, 3-G, 4-G ....) and human generation. Even new generation is more techno-savvy than the previous one, college students are not exception to this. Secondly, the virtual platforms such as internet and social media allow the young collegians to be anonymous by disguising their identity, they can act as a person they are not and express themselves more comfortably (Kurtalan, 2008). However, Xu and Tan (2012) suggest that the transition from normal to problematic social networking use occurs when social networking is viewed by the individual as an important mechanism to relieve



stress, loneliness or depression. They contended that those who frequently engage in social networking are poor at socializing in real life. For these people, social media use provides continuous rewards (e.g., self-efficacy, satisfaction) and they end up engaging in the activity more and more, eventually, leading to many problems (e.g., ignoring real life relationships, work/educational conflicts etc.). These resulting problems may then exacerbate individuals' undesirable moods. This then leads such individuals to engage in the social networking behavior even more as a way of relieving unhappy mood states.

### **CONCLUSIONS**

On the basis of findings and statistical interpretation it is concluded that...

- 1) Social media addiction is not contagion to emotional states.
- 2) Strength of association between social media disorder and emotional states is very poor and negative.
- 3) There was no significant difference in the use of social media among students offering different study courses.

4) Male and female students exhibited similar trend in the use of social media.

5) There were no significant differences in the emotional states of collegians offering different study courses.

6) There were no significant gender differences in the emotional states of college youngsters.

### **LIMITATIONS**

The study has several limitations. Firstly, the scope is limited to the collegians offering various study courses enrolled in a single college affiliated to SGB Amravati University. Secondly, the investigation is based on responses given by the collegians. To study the contagion effect, laboratory study is required. Thirdly, inspite of the validity and reliability of the tools, the gravity of respondents is the major constraint in drawing conclusions. Finally, due to the space restrictions, interpretation and conclusions are drawn only on the basis of total test/scale score. Sub-test/scale scores are not incorporated

### **REFERENCES**

1. Bergstrom, R. L., Neighbors, C. and Malhein, J. E. (2009). "Media comparisons and threat to body image: Seeking evidence of self affirmation". *Journal of Social and Clinical Psychology*, 28(2): 264-280.
2. Dhir, A. (2016a). "Exploring Online Self-Presentation in Computer-Mediated Environments, E-motives and Reasons for Photo-Tagging and Untagging". Doctoral Dissertation. Alto University, Finland.
3. Flower, J. H and Christakis, N. A. (2008). *BMJ*, 337: a2338.
4. Fox, J. & Rooney, M.C.(2015). "The Dark Triad and trait self-objectification as predictors of men's use and self-presentation behaviors on social networking sites". *Personality and Individual Differences*, 76: 161-165. <http://dx.doi.org/10.1016/j.paid.2014.12.017>
5. Fredrickson, B. L and Roberts, T. A. (1997). "Objectification theory: Toward understanding women's lived experiences and mental health risks". *Psychology of women quarterly*, 21(2): 173-206. Doi:<http://dx.doi.org/10.1111/j.1471-6402.1997.tb00108.x>, accessed 16August 2016.
6. Griffiths M (2012). Internet sex addiction: A review of empirical research. *Addiction research and theory* 20: 111-124.
7. Guangheng D, Qilin L, Hui Z, Xuan Z (2011). Precursor or sequel: Pathological disorders in the people with internet addiction disorder. *Plos ONE* 6: 1-5.
8. Hass, C. J., Pawlow, L. A., Pettibone, J, and Segrist, D. J. (2012). "An intervention for the negative influence of media on body esteem". *College Student Journal*, 46(2): 405-418.
9. Kurtalan, G. T. (2008). Examining the variables predicted internet addiction. (Masters Thesis), Mersin University, Institute of Social Sciences, Mersin.
10. Kuss, D. and Griffiths, M. (2012). Internet gambling addiction: A systematic review of empirical research. *International Journal of Mental Health and Addiction* 10: 278-296.
11. Manago, A. M., Graham, M. B., Greenfield, P. M. & Salimkhan, G. (2008). "Self-presentation and gender on Myspace". *Journal of Applied Developmental Psychology*, 29 (6):446-458. <http://dx.doi.org/10.1016/j.appdev.2008.07.001>.

12. Pantic, I. (2014). Online social networking and mental health. *Cyberpsychology, Behavior and Social Networking*, 17(10),652-657.
13. Regina, et al. (2016). The Social Media Disorder Scale. *Computers in Human Behavior*, 61, 478-487.
14. Tandoc, E. C., jr., Ferrucci,P. & Duffy, M. (2015). "Facebook use, envy and depression among college students: Is facebooking depressing?" *Computers in Human Behavior*, (43): 139-146.  
<http://dx.doi.org/10.1016/j.chb.2014.10.053>
15. Xu H, Tan BCY (2012). Why do I keep checking Facebook: Effects of message characteristics on the formation of social network services addiction (cf. Griffiths, M. D. (2013) Social Networking addiction: Emerging Themes and Issues, *Journal of Addiction Research and Therapy*, 4:5.
16. Yellowless, P. M and Marks, S. (2007). Problematic Internet use or Internet addiction?. *Computers in Human Behavior* 23, 1447-1453.



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## **RIGHT TO INFORMATION ACT 2005: OPERATIONAL ISSUES AND MAJOR CONCERNS**

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### **INTRODUCTION**

The participants in a democratic system have a right to know what, how and why of any decision is made or change by the government and its functioning. This right is inherent in citizens by virtue of their owning the system. Therefore, citizen's right to information follows, as a natural corollary in a democracy and any attempt to wide information or to create opacity cannot augur well for its health. Some conscious citizens and civil society organization have constantly raised the demand for an effective provision for the right to information. Dwelling on the relation of Constitutional right to freedom of expression and the right to life, various judicial pronouncements endorsed its legal justification. It is expedient to provide for furnishing certain information to citizen who desires to have it.

In a government where all the agencies of the public must be responsible for their conduct, there cannot but few secrets. The people have a right to know every public act, everything that is done in a public way, by their public functionaries. The responsibility of officials is to explain not to justify, their acts is the chief safeguard against oppression and corruption.

### **INTERNATIONAL PERSPECTIVE**

According to information provided by Wikipedia over 85 countries around the world have implemented some form of such legislation. Sweden's Freedom of the Press Act of 1766 is the oldest. The Research, Reference and Training Division of the National Documentation Centre on Mass Communication (under Ministry of Information and Broadcasting) add value to this information. According to them, Sweden has been enjoying the right to know since 1810. It was replaced in 1949 by a new Act that enjoyed the sanctity of being a part of the country's Constitution itself. The principle is that every Swedish citizen should have access to virtually all documents kept by the State or municipal agencies.

### **NATIONAL PERSPECTIVE**

The Right to Information Act (henceforth RTI) was notified in the Gazette of India on 21st June, 2005 and it became fully operational from 12th October, 2005. Since its operation, the RTI Act has proved to be the most path-breaking and historic piece of legislation. It has generated tremendous impact in matters of citizens' democratic rights, monitoring public good, curtailing corruption and improving governance. With increasing levels of education and awareness among the rural and urban public, RTI Act has proved to be a potent weapon for solving a number of problems. Citizens are now using their statutory right to be informed to get any sort of information which lies in public domain. This new law empowers Indian citizens to seek any accessible information from a Public Authority and makes the Government and its functionaries more accountable and responsible. Logically therefore, RTI has helped to increase transparency in government or public dealings.

### **MAJOR CONCERNS ON THE SUBJECT MATTER**

Some of the major concerns in relation to implementation of RTI Act as expressed from various quarters may be considered as below:

#### **(i) Disclosure of file notings**

One of the most debatable and important concerns raised in respect of RTI Act from the very beginning is regarding disclosure of file notings. The government and bureaucracy are concerned over the exposure of file notings to the public that "It will act adversely against the requirement of free and frank opinion by the public officials in decision making process" In this context it would be appropriate to mention that file notings are ad hoc written notes added to file by officials and thus can give a critical insight into the government decision-making process. The exclusion of file notings would undermine the spirit of bureaucratic openness and accountability, which the law embodies. The purpose of the Act is to open

government's decision-making process to public scrutiny. In this context it would be appropriate to consider what record is. Section 2(i) (a) of the Act defines 'record' to include any document, manuscript and file. It was further held by the two-member bench of the Commission that a citizen has the right to seek the information in file nothings unless covered by the usual exceptions under Section 8 of the RTI Act.

**(ii) Cost of Implementation**

Another major concern has been the cost of implementing RTI Act. Such concerns keeping in view the actual facts viz; the savings to the government through reduction in the level of corruption and maladministration by implementation of the Act would be more than the cost on its implementation. Additionally, it may also be mentioned that the total cost on administration of nation certainly comes from the taxes, which the citizens pay to the government and the cost on implementation of RTI would be negligible as compared to the total cost on administration. This may also be said other way round that the taxpayers have all the right to know that how their government is making expenditure of their money. Thus, the concern relating to cost on implementation of RTI Act has been blown out of proportion and ill-founded.

**(iii) Misuse of Information**

With the passing of Right to information Act, 2005 any citizen of India can ask for any information from public authority, any information about public servant etc. This is a marvelous step in the direction of transparency. However, what to do of dummy RTI applications i.e. after filing the application all correspondence are returning undelivered than what could be the rationale of this Act. Therefore a good law like Right to Information (RTI) was being misused to ask irrelevant and intrusive questions seriously impeding the working of the concerned authorities. There has also been the apprehension that the information sought under the RTI Act would be misused or used to blackmail officials or organizations.

**(iv) Choice of Information Commissioners**

This is yet another major concern that the majority of Information Commissioners appointed at both the Centre and the state levels have been retired high-ranking members of the bureaucracy. One of the major concerns is that it is they who were part of the secrecy regime in the functioning of public administration system for a long period of their career, therefore, their mindset may not be in

favour of promoting transparency. Yet another strong reason, which may go against such appointments, is the requirement of the Act itself.

**(v) Judiciary and Government threat to RTI**

The government and Judiciary is not very keen on the RTI Act and may try to amend it in order to render it toothless. The government and judiciary pose a serious threat to Right to Information Act. The widely prevalent and dangerous trend of resistance to transparency in their functioning by those in power will gradually kill Right to Information Act. Government across the country, irrespective of which party they belong to, follow a pattern of mis-governance and are opposed to transparency. The judiciary on the other side has been granting stays on the orders of the Information Commissions; this will eventually kill the Act. Government departments are rushing to courts to get stay orders against the decisions of Information Commissions to provide information to common man. Delays in finally deciding the matters destroy the spirit of the Act. It was this confidentiality that the judiciary has been lobbying for to remain outside the ambit of the RTI Act.

**OPERATIONAL ISSUES ON THE  
SUBJECT MATTER**

The passing of a law is no doubt one of an extremely important part of securing the right to information but it is not the ultimate step. It is the effective implementation of the law, which makes the statute a success and the right to information meaningful. There are a number of aspects, which are required to be taken into consideration for effective implementation and operationalisation of the right to information legislation. Building public awareness, promoting an informed civil service, encouraging cultural change within the civil service, developing an efficient and well-organized information management system are some of important facets, which require immediate focus to realize the right to information. As regards creating public awareness is concerned, it is incumbent on the government to educate and make aware the public of their right of access to information, especially how they can apply, as part of promoting a culture of openness and responsiveness within government. The government supported public information campaigns are extremely important tools to achieve the goals of right to information. Campaigns need to employ a variety of communication mechanisms including print and electronic media and all other available modes of

communication to reach the widest possible segments of the public, including those in rural areas and those who are illiterate. Governments should also produce and distribute literature in a variety of forms including governmental websites on how citizens can use their rights under the legislation.

To have an informed civil service, provision of training on right to information for employees is an important requirement. Such training should deal with why access to information is important, the scope of any law, the procedures by which people request information and how requests should be responded to, how to maintain and access records. Such training programmes will develop a positive mind set among the officials and the law will be seen as a positive benefit to officials, rather than burden.

Public officials weaned on secrecy tend to regard information as power and are reluctant to give it up. They therefore, delay the processing of information. In the administrative set-up public officials tend to regard the files they hold as their own personal property. Within traditionally secretive bureaucracies, information itself is a form of power and officials are reluctant to share it with other officials and most rarely with the public.

## **CONCLUDING REMARKS**

The Right to Information Act 2005 has ushered in a new era of transparency and people's access to information in India. The implementation of the Act is gathering momentum with each passing day. Government, civil societies and the media have generally lent their might to the realization of citizens' right to information through the revolutionary Act. But the exemptions contained in the Act needs a fresh look. Exemptions need to be kept at a minimum to ensure effectiveness of the Act. What is most important at present juncture is to give honest chance to the Act to operate without negative stumbling blocks and bottlenecks. There is a special duty cast upon the organizations of the civil society and public to be vigilant so that the objectives of the Act should not be frustrated by the bureaucratic manipulations. The heart and soul of any beneficial legislative enactment always lie in its implementations. The success of the Right to Information in India is an open challenge in our administrative culture, public service ability of adjustment and public services' commitment to the public cause. Let us hope positive response from our bureaucracy in the successful operationalization of the Right to Information.

## **REFERENCES**

1. Freedom of information legislation, [http://en.wikipedia.org/wiki/Freedom\\_of\\_information\\_legislation](http://en.wikipedia.org/wiki/Freedom_of_information_legislation), downloaded on 02.12.2010.
2. National documentation center on mass communication, Research, reference and training division, <http://www.rrtd.nic.in/RIGHT%20TO%20INFORMATION.html>, Downloaded on 01.12.2010.
3. PM Orders Changes in Right to Information Act", Yojana, January 2006, p.8.
4. IndraJ.Mistry, "Breaking the bureaucratic Mould" Yojna, January 2006, p.9&10.
5. SapnamChadah "Implementing Right to Information: A practical Approach" Indian Journal of Public Administration; Vol. No:3, July-September 2009 p.455 to480.
6. [http://articles.timesofindia.indiatimes.com/2012-04-13/india/31337226\\_1\\_justice-kapadia-cji-rti-act](http://articles.timesofindia.indiatimes.com/2012-04-13/india/31337226_1_justice-kapadia-cji-rti-act), visited on 18-09-2012.  
Subhash C. Kashyap, "Right to Information" South Asia Politics, June 2009, p.29..

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## **TECHNOLOGY AND TEACHING-LEARNING OF ENGLISH LANGUAGE**

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### **ABSTRACT**

*We are living today in the age of technology. As far as teaching and learning of English language is concerned, those traditional methods and tools have become outdated now. In the wake of globalization and wide spread of technological innovations we have a lot to choose from the world of technology to make our teaching and learning process smarter, effective and interesting from learners' and teachers' point of view. We have smart technological gadgets like Smartphones, Radio, TV, CD Roms, Computers, C.A.L.L., the Internet, Electronic Dictionaries, Email, Blogs and Audio Cassettes, Power Point, Videos, DVD's, VCD's and innumerable apps available easily. The last two decades have witnessed a revolution due to onset of technology, and has changed the dynamics of various walks of life, and has also influenced the society at large and the nature of interactions of the masses among themselves. This rapid rise and growth of technology has offered a better pattern to explore the new teaching models. As a result technology has been playing a very important role in teaching and learning of English language. In this paper efforts have been made to analyze the necessity of use of technology to make teaching and learning of English language innovative, effective and interesting. It also brings out the problems faced by the users while dealing with these technological gadgets. It also aims to make English teachers aware of the strategies to be adopted to use technology in an effective manner.*

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**Keywords:** English Language teaching, Multimedia Technology, Advantages, Disadvantages, Optimization, Strategies.

### **INTRODUCTION**

English language has a special importance as it is the language of the world. It enjoys a high prestige in our country because it is spoken by the British, the ruling class of the past. In spite of the fall of British power all over the world, English language has not lost its glamour and use throughout the globe even today. Rather it has become the necessity of everyone of us due to the wide spread of internet and computer technology in all walks of life. English language has been used as a medium of instruction and as a part of curriculum in the countries where English is studied as a second language. As the number of English language learners has been increasing, technology supported new methods of teaching and learning have been devised. New teaching tools and materials in the form of audio-visual aids viz. LCDs, DLPs, interactive boards, smart phones, etc. have been introduced in the system. It is true that these technological gadgets have proven their utility in replacing the traditional methods of teaching and learning process.

The changed circumstances assign new challenges and duties on the modern teachers. The traditional ways of English teaching has been drastically

changed with the remarkable entry of technology. Technology provides so many options as making teaching interesting and also making it more productive in terms of improvements. Technology is the most significant driver of both social and linguistic change. Graddol: (1997:16) states that "technology lies at the heart of the globalization process; affecting education work and culture. At present the role and status of English is that it is the language of social context, political, sociocultural, business, education, industries, media, library, communication across borders, and key subject in curriculum and language of imparting education". It is also a crucial determinant for university entrance and processing high paid jobs in the commercial sector. Considering the huge quantity of English learners in India, technology driven teaching methods have been implemented to test the effectiveness of the teaching process. One method involves multimedia in ELT in order to create English contexts. This helps students to get involved and learn according to their interests. It has been tested effectively and is widely accepted for teaching of English in modern world. Technology is utilized for the betterment of modern styles; it satisfies both visual and auditory

senses of the students. Many more aspects of language learning which used to be vague and obscure for understanding now have become easy with the advent of technology.

As the use of English has increased in popularity so has the need for qualified teachers to instruct students in the language. It is true that there are teachers who use 'cutting edge' technology, but the majority of teachers still teach in the traditional manner. None of these traditional manners are bad or damaging the students. In fact, till date they are proving to be useful also. However, there are many more opportunities for students to gain confidence practice and extend themselves, especially for ESL students who learn the language for more than just fun. For them to keep pace with ELT and gain more confidence they have to stride into the world of multimedia technology. In country like India where huge amount of students taking education with meager infrastructural resources seem to be very challenging to make use of such advance technological tools in the schools and colleges.

21<sup>st</sup> century is the age of globalization and is important to grasp on various foreign languages and English language comes first. English Language Teaching has been with us for many years and its significance continues to grow, fuelled, by the spread of ICT. Graddol's study (2000) suggests that in the year 2000 there were about a billion English learners- but a decade later the numbers got doubled. The forecast points to a surge in English learning, which has peaked in 2010. The same study indicates that over 80% of information stored on the internet is in English. For the first time there are more Non-Native than Native users of the language and diversity of context in terms of learners, age, nationality, learning background, etc. has become a defining characteristic of ELT today. With the rapid development of science and technology, the emerging and developing of multimedia technology and its application to teaching, featuring audio, visual, animation effects comes into full play in English classrooms and sets a favorable platform for reform and exploration on English teaching model in the new era. It's proved that multimedia technology plays a positive role in promoting activities and initiatives of students and teaching effect in English class. Technological innovations have gone hand in hand with the growth of English and are changing the way in which we communicate. It is fair to assert that the growth of the internet has facilitated the growth of the English language and that this has occurred at

a time when computers are no longer the exclusive domains of the dedicated few, but rather available to many. With this there has been a very significant proliferation of literature regarding the use of technology in teaching English language. Mostly these writings unequivocally accept technology as the most essential part in teaching. In a sense, a tendency to emphasize on inevitable role of technology in pedagogy to the extent of obliterating human part of teacher by technology part has been very dominant. And as a result if we neglect or ignore technological developments they will continue and perhaps we will never be able to catch up, irrespective of our discipline or branch. For this reason it is important for language teachers to be aware of the latest and best equipment and to have a full knowledge of what is available in any given situation. Teachers can use Multimedia Technology to give more colorful, stimulating lectures so that the learners need not have to imagine the abstract conditions of language learning, the connection between the words and object link. Due to technology, sensing arbitrary nature of language has become convenient to some extent. There are many techniques applicable in various degrees to language learning situation. Some are useful for testing and distance education, and some for teaching business English, spoken English, reading, listening or interpreting. The teaching principle should be to appreciate new technologies in the areas and functions where they provide something decisively new useful and never let machines takeover the role of the teacher or limit functions where more traditional ways are superior. There are various reasons why all language learners and teachers must know how to make use of the new technology. Here we also need to emphasize that the new technologies develop and disseminate so quickly that we cannot avoid their attraction and influence in any form.

Nowadays, the stereotyped traditional teaching methods and environment are unpopular while multimedia technology featuring audio- visual animation effects naturally and humanely makes us more access to information besides, with such characteristics as abundant-information and crossing time and space, multimedia technology offers a sense of reality and functions very well, which greatly cultivates students' interest and motivation in study and their involvement in class activities.

Traditional teaching has hampered students' capacity to comprehend certain language and also

understanding to structure, meaning and function of the language, and makes the students passive recipients of knowledge, so it is hard to achieve the target of communication. With teachers' instructions leading students' thought patterns and motivating students' emotions, the multimedia technology seeks integration of teaching and learning and provides the students greater incentives. The PPT courseware activate students' thinking; the visual and vivid courseware help them to transform English learning into capacity cultivation. And such in-class activities as group discussion, subject discussion, and debates can also offer more opportunities for communication among students and between teachers and students. So multimedia technology teaching has uniquely inspired students' positive thinking and communication skills in social practice.

The multimedia courseware can offer the students abundant information; more plentiful than textbooks, and help them to get displays vivid cultural background, rich content and true-to-life language materials, which are much natural and closer to life. Not only could learners improve their listening ability, but also learn the western culture. Grasping information through various channels can equip; the students with knowledge and bring about information-sharing among students and make them actively participate in class discussion and communication.

Multimedia teachings enrich teaching content and make the best of class time and break the "teacher-centered" teaching pattern and fundamentally improve class efficiency. Due to large classes it is difficult for the students to have speaking communication. The utilization of multimedia sound lab materializes the individualized and co-operative teaching. The traditional teaching model mainly emphasized on teachers' instruction, and the information provided is limited due to traditional classes. On the contrary, multimedia technology goes beyond time and space, creates more vivid, visual, authentic environment for English learning, stimulates students' initiatives and economizes class time meanwhile increases class information.

Multimedia teaching stresses the role of students, and enhances the importance of "interaction" between teachers and students. A major feature of multimedia teaching is to train and improve students' ability to listen and speak, and to develop their communicative competence. During this process, the teacher's role as a facilitator is

particularly prominent. Using multimedia in context creation creates a good platform for the exchange between teachers and students, while at the same time providing a language environment that improves on the traditional classroom teaching model. In this way, teachers in the classroom no longer blindly input information and force students to receive it in a passive way.

Multimedia teaching creates a context for language teaching. This method makes the class lively and interesting, as well as optimizing the organization of the class. Multimedia has its own features such as visibility and liveliness. During the process of multimedia English teaching, sounds and pictures can be set together, which enhances the initiative of both teachers and students. When using multimedia software, teachers can use pictures and images to enrich the content of classes, and also imagine different contexts in the process of producing teaching courseware. Students in the class can use multimedia to understand the class in a clear way. Through the whole interactive process, it is apparent that using multimedia in ELT is effective in nurturing students' interest in learning English, as well as enhancing teachers' interest in English teaching. As Zhang (2006:11.1) points out through Multimedia and network technology we can offer students not only rich, sources of authentic learning materials, but also an attractive and a friendly interface, vivid pictures and pleasant sounds, which to a large extent overcomes the lack of authentic language environment and arouses students' interest in learning English.

Besides, Multimedia being very useful, we cannot ignore its side effects as well. Application of multimedia technology is an assisting instrument to achieve the projected teaching effect, while if totally dependent on, multimedia devices during teaching, the teachers may be turned into slaves to the multimedia and cannot play the leading role in teaching. It is observed in practice that a lot of teachers are active in multimedia technology application but not proficient enough to handle it confidently. In class, they are standing by the computer and students are fixing their attention only on the screen, and therefore, there is no eye contact between teachers and students. The trend of modern information and technology teaching appears to the extremity regardless of the essence of the traditional teaching. And hence, the notion of Creative Education is to be fully comprehended that modern educational techniques serve as an assisting instrument rather than a target: and that



should not dominate class. They are substitutes to effective teaching and learning.

English language and English analysis by the teachers are effective in conveying knowledge to the students from English pronunciation to comprehension, improving students' English thought patterns and oral expression, Whereas, the introduction of multimedia technology featuring audio, visual, textual effect fully meets audio and visual requirements of the students and enhance their interest, but it also results in lack of communication between teachers and students, replacement of teachers' voice by computer sound, and teachers' analysis by visual image and students have a few chances for speaking communication. With the favorable atmosphere by the mutual communication between teachers and students fading away, and sound and image of multimedia affecting students' initiative to think and speak, English class turns to course ware show and students are made viewers rather than the participants of class activities.

Some teachers take the computer screen as the blackboard. They have input exercises, questions, answers and teaching plans into the computer and display them piece by piece, without taking down anything on the blackboard or even the title of a lesson. It is known that teachers are supposed to simulate situations based on teaching and guide the students to communicate in English. Beside traditional writing on blackboard is concise and teachers can make adjustment and amendment to it if necessary. Furthermore, experienced teachers know well that a perfect courseware is an ideal project in mind, and that in practice, they need to enrich the content on the blackboard with emerging of new question raised by the students.

Some teachers tend to entirely depend on multimedia teaching. While, it should be noticed that although multimedia has its unique advantages in teaching, the characteristics functions of other forms of teaching instruments are still incomparable. For example, the recorder still plays a role in broadcasting listening material. So

teachers are supposed to choose appropriate media and instrument based on the requirements of teaching and integrate multimedia instrument with traditional one and fully perform their merits, rather than merely in pursuit of trendy method.

### **CONCLUSION**

"Ideally, the purpose of both the traditional and computer-assisted cooperative language leaning classrooms is to provide a space in which the facilitation of learning, and learning itself, can take place" (Shi, 2008: 76). It is true that one of the ultimate goals of multimedia language teaching is to promote students' motivation and learning interest, which can be a practical way to get them involved in the language learning, Context creation of ELT should be based on the openness and accessibility of the teaching materials and information. During the process of optimizing the multimedia English teaching, students are not too dependent on their mother tongue, but will be motivated and guided to communicate with each other. Concerning the development of technology, we believe that in future, the use of multimedia English teaching will be further developed. The process of English learning will be more student-centered but less time-consuming. Therefore, it promises that the teaching quality will be improved and students' applied English skills can be effectively cultivated, meaning that students' communicative competence will be further developed. In conclusion, it is believed that this process can fully improve students' ideation and practical language skills, which is helpful and useful to ensure and fulfill an effective result of teaching and learning. Barring a few problem areas multimedia technology can be used effectively in classrooms of ELT with proper computer knowledge on the part of teachers, overcoming the financial problems in setting up the state-of -the-art infrastructure and sophisticated equipment, tools and not allowing the teachers to become dry like that of machines

### **REFERENCES**

1. Graddol: (1997:16) David Graddol, The future of English, Page 2 Zhanghongling, The development tendency of the modern foreign language teaching and the computer assisted instruction. Computer- Assisted Foreign Language Education
2. Brown, H.D. (2001). Teaching by principles: An interactive approach to language pedagogy. Beijing: Foreign Language Teaching and Research Press

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## **ROLE OF HUMAN BEINGS IN MAINTAINING ENVIRONMENTAL BALANCE**

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### **ABSTRACT**

*The term “Environmental balance” is used to describe equilibrium between living organisms such as human beings, plants, animals and the environment. It means that human beings and the environment are interrelated. Human beings play a key role to maintain environmental balance because they have the great understanding power as compared to the other living organisms. Human beings not only have the ability to adapt themselves to varying environmental conditions, but also to manipulate ecosystem to their benefit. Therefore, the main aim of this paper is to highlight the important role of human beings in maintaining environmental balance.*

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**Keywords:** Human beings, environment balance

### **INTRODUCTION**

Human beings are the part of ecosystem. It interacts with the ecosystem to obtain food, water and other resources. They may consider the most important components and resourceful of all creatures on earth, but they are still helplessly dependent on other organisms for their existence. This is because human, unlike plants, cannot produce their own food, and have to depend on plants and other animals for their subsistence. It is proved that the human beings, the environment and the earth system are inseparably and independently linked. If one is disturbed, the other two also be affected seriously. If human beings wish to live a life free of suffering, they will have to ensure the integrity of ecosystem, to make sure that the land is not damaged; the water and air are not polluted. In Yajurveda, an ideal attitude towards the environment and its living components “May all beings look on me as a friend? May I look on all beings as friends? May we all look on one another with friendship?”

Everyone has the responsibility to maintain environmental balance judiciously. Nowadays, people are concerned about the environment and importance of the environmental balance and it affects on the life of all plants, animals and humans, after the huge amount of pollution in the twentieth century. Many decades ago, there were no pollution but in the last few years, number of factories produces a large amount of contaminated materials which causes dangerous diseases. That’s why pollution had affected the aquatic organisms, animals and plants. In the ecosystem human populations are increasing from time to time may

result in lowering the value of ecosystem. Therefore, we need to control the human population.

### **SOME POSSIBLE WAYS TO MAINTAIN ENVIRONMENTAL STANDARD**

- Taking effective measure for population control.
- Optimum use of natural resources.
- Conserving and protecting biodiversity.
- Creating public awareness about the benefits and implication of environment.
- Developing eco-friendly technological processes.
- Promoting sustainable agriculture which will not harm the environment.
- Using bio-fertilizer or eco-friendly fertilizers.
- Developing waste land by adapting a forestation program.
- Developing sustainable biotechnology to clean up hazardous waste in the environment.
- Choosing sustainable techniques to treat the pollutants before their discharge into environment.

### **RESULT AND DISCUSSION**

Human beings and environment are interrelated with each other. All human beings and environment are mutually related and affecting each other in various ways. All the issues like quality of environment, natural ecosystem, pollution can be solved by entire society taking an environment improvement programs and get response towards the improvement programs. Human beings have the ability to adapt themselves to varying environmental conditions and to

manipulate ecosystem to their benefit. So, we must balance the environment. It is the duty of everybody to look after the environment and ensure that every species has the right to live in harmoniously. If the environmental balance deteriorates, the survival of human beings and other living organisms will be seriously threatened.

## **CONCLUSION**

The environmental balance brings the existent of the world. The earth's inhabitants of human beings, plants, animals and other living microorganisms can continue to survive. Therefore, we need to maintain desired population growth and protect the water. We should organize environmental improvement programs to aware the people to maintain environmental balance. Therefore, human beings can contribute positively to create and maintain the environmental balance

## **REFERENCES**

1. <http://computersuren.blogspot.in/2012/05/role-of-man-in-conserving-natural.html>
2. K. S. Valdia, (2002), Geology Environment and Society, University Press India Pvt. Ltd. Himalaya Nagar, Hyderabad. ISBN-3771 page no. 1-4.
3. L. Gore, (2006), Earth in the balance: Ecology and Human Spirit, ISBN 978-1-59486-637.
4. M .H. Fulekar, Bhawana Pathak, R. K. Kale, (2014), Environment and Sustainable Development, Sprilger, New Delhi, ISBN-1165-5, page no. 173.
5. M. M. Sulphey, (2015), Introduction of Environment management Third Edition, PHI Learning Pvt. Ltd., Delhi, ISBN-5070, sec-1, 11.
6. Prithi Nambiar, (2014), Media Construction of Environment and Sustainability in India, SAGE Publication, India Pvt. Ltd., ISBN 1741-4.
7. Sandhya Singh, (2015), Role of Society in Conservation of Natural Resources, International Journal of Research - Granthaalayah, ISSN- 2350- Social Issues and Environmental Problem Vol. 3, Page no. 1-3.
8. Subhashini Muthukrishnan, (2015), Economics of Environment, Second Edition, Published by PHI Learning Pvt. Ltd., Rimjhim House, 111, Patparganj Industrial Estate, Delhi, ISBN-1741, page no. 110 - 122

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## **THE ROLE OF WOMEN ENTREPRENEURSHIP IN SMALL SCALE INDUSTRIES**

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### **ABSTRACT**

*The positional of women and their status in any society are an index of its civilization. Women are to be considered as equal partners in the process of development. But, because of centuries of exploitation and subjugation, Indian women have remained still at the receiving end. Women in India have been neglected a lot. They have not been activity involved in the mainstream of development even though they represent equal proportion of the population and labour force. Primarily women are the means of survival of their families, but are generally unrecognized and undervalued, being placed at the lower rung of the ladder. Women as an independent target group. Account for 495.74 million and represent 48.3 per cent of the country's population, as per the 2011 Census. No country can achieve its potential without adequately investing in and developing the capabilities of women. In the interest of long-term development, its dire necessary to facilitate their empowerment. In many developing countries, including India, women have much less access to education, jobs, income and power than men .Factor Influencing Women Entrepreneurs Setting up an enterprise is not an easy job for women entrepreneurs and at the same time running the enterprise is a greater task. A challenge is always there for these women entrepreneurs to run their enterprise successfully earning profit and the growth of the enterprise which will severly test their entrepreneurial skill and servival of the unit. Despite various odds against them, several women are off to run their own enterprises. Even though there has been a considerable increased in the number of women entering in entrepreneurial activity, they are being introduction to many constraint and difficulties with regard to control and decision making, social status and enthusiasm in the product or serviced in which they are dealing.*

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**Keywords:** *Civilization, Women, Women Entrepreneurs*

### **INTRODUCTION**

Women constitute not only half of the world population but also away the growth of the remaining half. They produce half of the world food supply and account for 60 per cent of the working force but comprise only about 30 per cent of the official about force, receive benefits of only 10 per cent of the world economy and surprisingly own less than 1 per cent of the real estate. They have little access to productive resources and negligible control over family income. This discrimination is the result of the gender bias and malpractices prevalent in India societies are female fetus termination , killing the girl child at birth, less nutrition, malnutrition, medical care, education and freedom due to preference for the male child, marriage before puberty, dowry death, legal discrimination, professions exclusively earmarked for men, precarious life, etc. While such practices and activities are prevalent lot of in India society, they are fortunately not the lot of every Indian woman and are confined to certain communities and section of society. Even in such a situation, the immensely important role of women in procreation, upkeep, management and

development of the family, as well as in performing diverse economic, social, political, religious, national and international roles, cannot be denied. Despite the fact that they deserve equal status, honor, dignity, rights and consideration, certain complex factors have relegated the status of women in human society to a lower level. Leading to gender bias generally manifested in a loss of freedom, drudgery, malnutrition, and economic and sex exploitation . several women are off to run their own enterprises. Even though there has been a considerable increased in the number of women entering in entrepreneurial activity, they are being introduction to many constraints and difficulties with regard to control and decision making, social status and enthusiasm in the product or serviced in which they are dealing apply of materials and markets and establish new and more effective form of organization. Entrepreneurship perceive new opportunities and seize them with super normal will power and energy, essential to overcome the resistance that social environment offers. Development of entrepreneurship among women is a major step to increase women

participation in the process of economic development. It will speed up economic growth and provide employment opportunities for women resulted in improving the economic independence. Provision of economic opportunities for women improves the social. Education and health status of women and their families. In spite of the measures taken by the Government to encourage women entrepreneur the development of their entrepreneurship in our country is discouraging particularly in the small-scale sector where a majority of units are in a moribund state, because of conspicuous lack of managerial and innovative skills. This situation naturally discourages prospective entrepreneurs particularly women.

### **CONCEPT OF ENTREPRENEUR**

Entrepreneurship is one of the four mainstream economic factors, land, and entrepreneurship. The word entrepreneur derives from the French word *Entreprendre* and in the early 16th Century it was applied to persons engaged in military expeditions, and extends to cover construction and civil engineering activities in the expedition, and during the 18th century, the word entrepreneur was used to refer to economic activities. Many authors have defined entrepreneur differently. Generally, an entrepreneur is a person who combines capital and labour for production. According to Cantillion, entrepreneur is the agent who buys moment at which he commits himself to his cost. According to P.F. Drucker, he is one who always (1) searches for change (2) responds to it and (3) exploits it as an opportunity.

### **CONCEPT OF WOMEN ENTREPRENEUR**

Women entrepreneurs may be defined as the women or a group of women who initiate, organize and operate a business enterprise. The Government of India has defined women entrepreneurs as an enterprise owned and controlled by women having a minimum financial interest of 51 per cent of the capital and giving at least 51 per cent of the employment generated in the enterprise to women. Women entrepreneurs engaged in business due to push and pull factors which encourage women to have an independent occupation and stand on their own legs. A senses towards independent decision making on their life and career is the motivational factor behind this urge. Saddled with household chores and domestic responsibilities, women want to get independence. Under the influence of these factors, the women entrepreneurs choose a profession as a challenge

and have thrust to do something spice and span. Such a situation is described as pull factors. In push factors women engaged in business activities due to family compulsion and the responsibility is entrusted upon them. Women entrepreneurship is the proceed whereby women take the lead and organize the business or industry and provides employment to others. Though it is new phenomenon in India but still women are extending out and development is taking place not only in urban areas but also rural and semi urban area also. In India, a very few women entrepreneurs are in big enterprises. Mostly, we can find in small scale sector (SS Is introduction The positional of women and their status in any society are an index of its civilization. Women are to be considered as equal partners in the process of development. But, because of centuries of exploitation and subjugation, Indian women have remained still at the receiving end. Women in India have been neglected a lot. They have not been activity involved in the mainstream of development even though they represent equal proportion of the population and labour force. Primarily women are the means of survival of their families, but are generally unrecognized and undervalued, being placed at the lower rung of the ladder. Women as an independent target group. Account for 495.74 million and represent 48.3 per cent of the country's population, as per the 2011 Census. No country can achieve its potential without adequately investing in and developing the capabilities of women. In the interest of long- term development, its dire necessary to facilitate their empowerment. In many developing countries, including India, women have much less access to education, jobs, income and power than men.

### **FACTOR INFLUENCING WOMEN ENTREPRENEURS**

Setting up an enterprise is not an easy job for women entrepreneurs and at the same time running the enterprise is a greater task. A challenge is always there for these women entrepreneurs to run their enterprise successfully earning profit and the growth of the enterprise which will severely test their entrepreneurial skill and servival of the unit. Despite various odds against them, several women are off to run their own enterprises. Even though there has been a considerable increased in the number of women entering in entrepreneurial activity, they are being introduction to many constraints and difficulties with regard to control and decision making, social status and enthusiasm

in the product or serviced in which they are dealing.

### **STATUS OF WOMEN**

Women constitute not only half of the world population but also away the growth of the remaining half. They produce half of the world food supply and account for 60 per cent of the working force but comprise only about 30 per cent of the official labour force, receive benefits of only 10 per cent of the world economy and surprisingly own less than 1 per cent

of the real estate. They have little access to productive resources and negligible control over family income. This discrimination is the result of the gender bias and malpractices prevalent in India societies are female fetus termination , killing the girl child at birth, less nutrition, malnutrition, medical care, education and freedom due to preference for the male child, marriage before puberty, dowry death, legal discrimination, professions exclusively earmarked for men, precarious life, etc. While such practices and activities are prevalent lot of in India society, they are fortunately not the lot of every Indian woman and are confined to certain communities and section of society. Even in such a situation, the immensely important role of women in procreation, upkeep, management and development of the family, as well as in performing diverse economic, social, political, religious, national and international roles, cannot be denied.

### **CONCLUSION**

The position of women and their status in any society is an index of its civilization. Women are to be considered as equal partners in the process development. But, because of countries of exploitation and subjugation, Indian women have remained still at the receiving end. Women in India have been neglected a lot. They have not been actively involved in the mainstream of development even though they present equal proportion of the population and labor force. Primarily women are means of survival of their

families, but are generally unrecognized and undervalued, being placed at the bottom rung of the ladder. Women Entrepreneurs may be defined as the women or a group of women who initiate, organize and operate a business eEnterprise. The Government of India has defined women entrepreneurs as an enterprise owned and controlled by women having a minimum financial interest of 51 percent of the capital and giving at least 51 per cent of the employment generated in the enterprise to women. Entrepreneurship is considered as one of the most important factors contributing to the economic development of the society. Entrepreneurship has been considered as an instrumental in initiating and sustains socio-economic development. There are evidence to believe that counties which have developed much faster as compared to countries, which have lesser percentage of them in the society. They discover new a source of setting up an enterprise is not an easy job for women entrepreneurs and at the same time running the enterprise is a greater task. A challenge is always there for these women entrepreneurs to run their enterprise successfully earning profit and ensuring the growth of the enterprise which will severely test their entrepreneurial skill and servival of the unit. Despite various odds against them, several women are off to run their own enterprises. Even though there has been a considerable increased in the number of women entering in entrepreneurial activity, they are being introduction to many constraints and difficulties with regard to control and decision making, social status and enthusiasm in the product or serviced in which they are deal in getting up an enterprise is not an easy job for women entrepreneurs and at the same time running the enterprise is a greater task. A challenge is always there for these women entrepreneurs to run their enterprise successfully earning profit and ensuring the growth of the enterprise which will severely test their entrepreneurial skill and servival of the unit. Despite various odds against them.

### **REFERENCES**

1. Balbir Singh and Arvind Kumar (2012). Entrepreneurship Development Activities for Women in India. Asian Journal of Business and Economics, Vole 2. (2.2) pg. 1-9.
2. Chalapathi B.V, Raghavulu B. V, and Hari Prasad P."Gender Equality and Empowerment of women" Southern Economist, pp.27-30. July 2008.
3. DeeptiPachau(2012).EnhancingWomenEntrepreneurship in Different Small Scale Industries Sector ofAgra,ACADEMICIA-anInternational Multidisciplinary Research Journal, Vol.2 930, pg.

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## **ANCIENT INDIA'S CONTRIBUTION TO SCIENCE AND TECHNOLOGY**

**Sawant, J.R.**

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### **ABSTRACT**

*"We owe a lot to The ancient Indians teaching us how to count. Without which most modern scientific discoveries would have been impossible" Albert Einstien.*

*The Indian civilization in the world, has a strong tradition of Science and Technology. Research has been shown that from making the steel in the world to teaching the world to count. India was actively contributing to the field of Science and Technology centuries long before modern laboratories were set up. Many theories were set up. Many theories and techniques discovered by the ancient Indians have created the strengthened the fundamental of modern science and technology. While some of these ground braking contributions have been acknowledged some are still unknown to most.*

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**Keywords:** Science and Technology, The Indian civilization

### **INTRODUCTION**

India has been always known for his spiritual wisdom. However, not many are aware that ancient India also had a very sophisticated scientific temperament with great many contribution made to the field of Science and Technology. India making new progress in the field of science with its past will awaze that our ancestors knew and discovered at a point of time when people in most places in the world were still living in primitive ignorance.

### **MATHEMATICS**

Mathematics represents a very high level of abstraction attained by human brain. In ancient India, roots to mathematics can be freed to vedic literature, which are around 4000 years old. Between 1000BC and 1000AD, a number of mathematical treatises were authored in India. Will Durant, American Historian (1885 – 1981) Said that India was the mother of philosophy of much of our mathematics. It is now generally accepted that India is the birth place of sevral Mathematics concept –

#### **A] The idea of Zero –**

The most important invention of all time. Mathematician Arayabhatta was the first person to create a symbol for Zero and it was through his effects that mathematical operations like 'Addition' and 'Substraction' started using the digit zero. The concept of Zero and its integration into the place value system also enabled one to write numbers, no matter how large by using only ten symbols.

#### **B] The Decimal System –**

The decimal System, each symbol received a value of position as well as an absolute value. Due to the simplicity of the decimal notation, which facilitated calculation this system made the uses of arithmetic in practical inventions much faster and easier.

#### **C] Numerical Notation –**

Indians, as early as 500BCE has devised a system of different symbol for every number from one to nine. This notation system was adopted by the Arabs who called it the Hind numerals. Centuries later, this notation system was adopted by the western world who called them the Arabic numerals as it reached them through the Arab Traders.

#### **D] Fibonacci Numbers –**

The Fibonacci numbers and their sequence first appear in Indian Mathematics as matra meru, mentioned by Pingla in connection with the Sanskrit tradition of prosody. Later on, the method for the formation of these numbers were given by mathematician Virahanka, Gopala and Hemchandra much before the Italian mathematician. Fibonacci introduced the fascinating sequence to Western European.

#### **E] Binary Numbers –**

Binary number is the basic language in which computer program are written. Binary basically refers to a set of two numbers, 1 and 0, the combination of which are called bits and bytes. The Binary number system first described by the vedic Scholar Pingala, in his book Chanda Hasastza which is the earliest known Sanskrit treatise on prosody.

#### **F] Chakravala Method Of Algorithm –**

This is a cyclic algorithm to solve indeterminate quadratic equation, including the pell's equation. This method for obtaining integer solutions was developed by Brahmagupta one of the 7<sup>th</sup> century CE. Another mathematician, Jayadeva later generalized this method for wider range of equation which was further refined by Bhaskara II in his Bijganita treatise.

#### **G] Ruler Measurement –**

Excavations at Harappans sites have yielded ruler or linear measures made from ivory and shell. Marked out in minute sub divisions with amazing accuracy the calibration corresponds closely with the hasta increments of 13/8 inches, traditionally used in the ancient architecture of South India. Ancient brick found at the excavation sites have dimensions that corresponds to the unit of these rulers.

### **PHYSICS**

The root to the concept of atom in ancient India is derived from the classification of material world in five basic elements by ancient Indian Philosopher. These five elements such a classification enlisted since the vedic times, around 3000 BC before. These five elements were the earth (Prithvi), fire (Agni), air (Vayu), water (Jal) and ether or space (akash). These elements were also associated with human sensory perception: earth with smell, air with feelings, fire with vision, water with taste and ether/space with sound. Later on, Buddhist philosopher replaced ether/space with life, joy and sorrow.

#### **Theory Of Atom –**

One of the notable scientist of the ancient India was Kanad who is said to have devised the atomic theories centuries before John Dalton was born. He speculated the existence of any or a small indestructible particles, much like an atom. He also stated that anu can have two states – absolute rest and state of motion. He further held that atoms of same substance combined with each other in a specific and synchronized manner to produce Dvyanuka (diatomic molecules) and tryanuka (triatomic molecules).

### **CHEMISTRY**

Ancient India's development in chemistry was not confined at an abstract level like physics, but found development in variety of practical activities. In any early civilization, metallurgy has remained an activity central to all other civilization that followed. It is believed that the basic idea of

smelting reached ancient India from Mesopotamia and the Near East. Coinage dating from the 8<sup>th</sup> century BC to the 17<sup>th</sup> century AD like Nataraja the Goddess of Dance is made of five metals Panch - Dhatu. In the 5<sup>th</sup> century BC, the Greek Historian Herodotus has observed that Indian and the Persian Army used arrow tipped with iron. Ancient Romans were using armor and cutlery made of Indian Iron.

#### **A] Wootz Steel**

A pioneering steel alloy matrix developed in India, Wootz. Steel is a crucible steel characterized by a pattern of bands that was known in the ancient world by many different names such as Ukku, Hindwani and Seri Iron.

This steel was used to make the famed Damascus Swords of Yore that could cleave a free falling silk scarf or a block of wood with the same ease. The finest steel of the ancient world was made by heating black magnetite ore in the presence of carbon in a sealed clay crucible kept inside a charcoal furnace.

#### **B] Smelting Of Zinc –**

India was the first to smelt the zinc by the distillation process on advanced technique derived from a long experience of ancient alchemy. The ancient Persians had also attempted to reduce zinc oxide in an open furnace but had failed. Zawar in the Tri valley of Rajasthan is the world's first known ancient zinc smelting site. The distillation technique of zinc production goes back to the 12<sup>th</sup> century AD and is an important contribution of India to the world of Science.

#### **C] Seamless Metal Globe –**

The first seamless celestial globe was made in Kashmir by Ali Kashmiri Ibn Laqman in the region of the Emperor Akbar. In the major field in metallurgy, Mughal metallurgist pioneered the method of low wax casting to make twenty other globe master piece in the region of the Mughal Empire. Before these globes were discovered in 1980's modern metallurgist believed that it was technically impossible to reduce metal globe without any seams even with modern technology.

### **MEDICAL SCIENCE AND SURGERY**

Ayurveda as a science of medicine owes its origin in ancient India. Ayurveda consists of two Sanskrit words, 'Ayur' meaning age or life and 'Veda' means knowledge. Thus, Ayurveda means the science of life or longevity. Ayurveda constitutes idea about ailments and disease, their symptoms, diagnosis and care and relies heavily on herbal medicines, including extract of several plants of



medicine values. This reliance on Herbs differentiates Ayurveda from system like Allopathy and Homeopathy.

Ancient scholarly of India like Atreya and Agnivesa have dealt with principles of Ayurveda as long back as 800 BC. Their works and other developments were consolidated by Charaka who compiled a compendium of Ayurvedic principles and practices in his treatise. 'Charaka – Samahita', which renamed like a standard textbook almost for 2000 years and was translated into many languages. Several advances in medical surgery includes areas like plastic surgery, extraction of cataracts and even dental surgery.

#### **A) Ayurveda –**

The ancient science of Ayurveda referred to as the Father of Indian Medicine, Charaka was the Physicians to present the concept of digestion, metabolism and immunity in his book. Charaka's ancient manual on preventive medicine renamed a standard work on the subject for two millennia and was translated into many foreign language, including Arabic and Latin.

#### **B) Plastic Surgery –**

The Sushruta Samhita's most well known contribution to the plastic surgery is the reconstruction of the nose, known also as rhinoplasty.

Sushruta wrote his book in 6<sup>th</sup> century BC, Sushruta Samhita is considered to be one of the most comprehensive textbook on ancient surgery. The text mentions various illness, plant preparation and cares along with complex techniques of plastic surgery.

#### **C) Cataract Surgery –**

The first cataract surgery is said to have been performed by the Indian Physicians Sushruta, way back in 6<sup>th</sup> century BCE. To remove the cataract from the eyes, he used a curved needle. Jabamukhi Salaka, to loosen the lense and push the cataract out of the field vision. The eye would then be bandaged for a few days till it healed completely, Sushruta's Surgical works were later translated to Arabic language and through the Arabs, his work were introduced to the west.

### **ASTRONOMY**

Ancient India's contribution in the field of Astronomy as well known and well documented. The earliest references to astronomy are found in the Rig Veda, which are dated 2000 BC. During next 2500 years, by 500 AD, ancient Indian Astronomy has emerged as an important part of Indian studies and its affect is also seen in several

treaties of that period. In some instances astronomical principles were borrowed to explain matters pertaining to Astrology, like casting of Horoscope. Apart from this linkage of Astronomy with Astrology in ancient India, Science of Astronomy continued to develop independently and culminated into original findings like:

- a) The calculation of occurrence of Eclipses.
- b) Determination of Earth's circumference.
- c) Theorizing about the theory of Gravitation.
- d) Determining that sun was a star and determination of number of planets under our solar system.

The Pleiades hold prominent place as the mother or wet nurse of the new born infant in one of the most ancient and central Hindu myths, that of the birth of the war God. Rudra/Skanda, who evidently representing, among other things, the victorious rising sun (and as vernal Sun the new year). The greater bear's old Tamil name, elu - meen. 'seven - stars' corresponds the combination of the pictograms '7 + Fish', which alone constitutes the entire text of one finely carved Indus seal.

### **CIVIL ENGINEERING AND ARCHITECTURE**

India's Urban Civilization is traceable to Mohenjodaro and Harappa, now in Pakistan, where planned Urban township existed 5000 years before.

It found manifestation in construction of temples, places and forts area's the Indian peninsula and the neighbouring region. In ancient India, Architecture and Civil Engineering was known as 'Sthapatyakala', literal translation of which means the art of constructing.

During the period of Kushan Empire and Maurya Empires, the Indian Architecture and Civil Engineering reached to regions like Baluchistan and Afghanistan. Statues of Buddha were cut out, covering entire mountain faces and cliffs, like buddha's of Bamiyan, Afghanistan.

On the other side Buddhism took Indian style of architecture and civil engineering to countries like Sri - Lanka, Indonesia, Thailand, Burma, China, Korea and Japan.

In mainland India of today, there are several marvels of ancient India's architectural heritage sites like Ajanta, Ellora, Khajuraho, Mahabodhi Temple, Sanchi, Brihadisvara Temple and Mahabaliparam.

## **CONCLUSION**

I glorify my country, not by reciting her history , but by being a responsible citizen. I want every Indian to know that he/she, let be of any religion, cast, and creed , is inheriting a marvelous history which has weathered the worst of times, that she/he is born in an extraordinary nation. We should all, as Indians, take the responsibility to get light of modern scientific view.

In summing up we can say that Indian Scientist, some of have made greatest achivements. The main value of those ancient writing to modern people in their life lessons about how to live a well directed life.

They are also useful for studying comparative religion and philosophy. They contain some very interesting linguistic and semantic ideas. They also tell us things about history and society and about interesting groups of peoples.

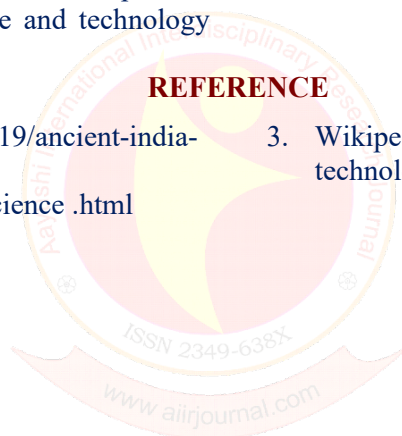
Science and technology has a profound impact on all humanity's activities. Science and technology

inventions and discoveries, including the theory of the origin of the universe, as the theory of evolution and the discovery of genes have given humanity many hints relating with to human existence from civilized and cultural points of view. Our ancient scientist discoveries had an immeasurable influence on the formation of our understanding of the world, society and nature.

The ancient discoveries produced by humanity has led to the building and development of the civilization of each age, stimulated economic growth, raised people standards of living encouraged cultural devolpment, and had a tremendous impact on religion though and other human activities. Though ancient India tried to explain all natural phenomenon through religion and symbols and incorporated into the daily lives of people through rituals and spirituals beliefs, the studies developed by them actually portray a deep scientific understanding of all things around us

## **REFERENCE**

1. [www.thebetterindia.com/63119/ancient-india-science&technology](http://www.thebetterindia.com/63119/ancient-india-science&technology)
2. [www.crystalinks.com/indiascience.html](http://www.crystalinks.com/indiascience.html)
3. [Wikipedia.org/wiki/history\\_of\\_science-and-technology](http://Wikipedia.org/wiki/history_of_science-and-technology)



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## **MULTIMEDIA ASSISTED METHODS IN TEACHING AND LEARNING ENGLISH**

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### **ABSTRACT**

*“We owe a lot to The ancient Indians teaching us how to count. Without which most modern scientific discoveries would have been impossible” Albert Einstien.*

*The Indian civilization in the world, has a strong tradition of Science and Technology. Research has been shown that from making the steel in the world to teaching the world to count. India was actively contributing to the field of Science and Technology centuries long before modern laboratories were set up. Many theories were set up. Many theories and techniques discovered by the ancient Indians have created the strengthened the fundamental of modern science and technology. While some of these ground braking contributions have been acknowledged some are still unknown to most. The present study attempts to analyze the necessity of multimedia assisted methods in teaching and learning English effectively in India. Multimedia assisted traditional teaching may grow learners’ interest in the study of English. Devices like Radio, TV, CD Rom, Computers, C.A.L.L., the Internet, Electronic Dictionary, Email, Blogs and Audio Cassettes, Power Point, Videos, DVD’s or VCD’s may be of great importance in existing methods of teaching English. The last decade has witnessed a tremendous revolution in technology which has helped to change the dynamics of various fields. Android Mobile Phones are making historic effects on the life of modern man. This rapid development of information technology has offered a better pattern to explore the new teaching model. As a result technology plays a very important role in teaching and learning English. Besides, multimedia today encourages the traditional process of teaching and learning English. The time has come to gap the needs and intelligence of the new generation in the wake of teaching and learning English in India with new insight and enthusiasm.*

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**Keywords:** *Multimedia, Methods, Teaching, Learning, English.*

### **INTRODUCTION**

With the advent of technology, the human being brought a drastic change in his life style, standard, civilization, culture and ways of communication. In fact, there is a tremendous improvement in the use of languages. English is preferred by almost everyone. To say, it has entered in every sector of life. It has become the backbone of every nation. Even in rural parts of India, a common man cannot do without it. It enjoys a high prestige in India.

English is the global language, as it is the widely spoken language in the world. It has spread across the globe as it spoken as the second language in many countries including India. English language always has a privileged position in India. English is the key subject of medium of instruction in schools and colleges. It is always considered to be a high prestige to study in an English medium institution. (.Vishnu and valli 189)

At present the status of English in India is higher than ever as it has become prominent medium of

education. The emphasis in this paper is being giving on its correct usage and teaching in India. Many learned people evolved new methods of teaching and learning English with proper effects. In fact, the innovative technology is being played a significant part.

The present scenario assigns new responsibilities to the teachers of English with the remarkable entry of technology. Technology provides so many opportunities to make teaching and learning English more interesting and effective. A trained learner of English can possess well-paid jobs in the commercial sector. Indeed, technology provides lot of opportunities both in learning English effectively and securing good jobs. Multimedia plays a great part in teaching and learning English in order to help learners to get involved and learn according to their interests. It also encourages the weaker learner to take active part in the process of teaching and learning English.

It becomes essential to understand the term multimedia. Multimedia is a group of multiple forms of media. This includes text, graphics, audio, video, etc.

Multimedia is the combination of different content forms. It includes a combination of text, audio, still images, animation, video, or interactivity content forms. It is usually recorded and played, displayed, or accessed by information content processing devices, such as computerized and electronic devices, but can also be part of a live performance. Multimedia provides a complex multisensory experience in exploring our world through the presentation of information through text, graphics, images, audio and video, and there is evidence to suggest that a mixture of words and pictures increases the likelihood that people can integrate a large amount of information. (Thamarana 169)

### **NEED OF NEW TECHNIQUES IN TEACHING AND LEARNING ENGLISH**

The present era is occupied with a rapid spread of technology in almost all the fields. The new technological devices brought an epoch making change in the use of English language. It is surprising that over 80% of information stored on the internet is in English. There are more non-native than native users of English. Consequently, all these users belong to different age groups, nationality; learning background and society. The challenge is to make all these users competent in order to achieve fluency in English. India is a developing country with industrial output. It is essential to make the learners more efficient and fluent in English who are presently taking their lessons in schools, colleges and universities in order to make India a developed country.

With the rapid development of science and technology, Computer assisted class room, digital boards, internet facility, digital language laboratory and many other devices play a vital role in teaching and learning English. Advance multimedia technology and its applications can attract the attention of teachers and learners to make the study of English more enthusiastic than ever. Multimedia helps more emphatically to cultivate spirit of studying English with the help of attractive audio, motivational visual, animation. The new generation seems to be taking more interest in social media. If such and many other facilities are invited for study of English, the learners will grow more interest among them. They will get what they want. If the learners are

offered study of any subject in the area of their interest, it becomes of great significance.

### **APPLICATIONS OF MULTIMEDIA IN THE STUDY OF ENGLISH**

#### **I. Growing Learners' Interest**

In the present situation the learners take interest in social media and its applications like Whats app, Face book, Instagram, Blogs and others. In fact, they can grow their interest in English, if the study is assisted with such applications. It does not affect the method of traditional teaching. Basically, reading, writing, speaking and listening are the methods to be perfected in English. Multimedia adds graphics and visual featuring in learning English. This can cultivates learners' interest and motivate them to study and involve them actively in the process.

#### **II. Communicative Skills**

Learners can improve their communicative skills in English with help of Digital Boards and PPT. Communicative skills can grow faster with the help of such devices because of attraction of the learners toward new devices.

The use of PowerPoint template activates students' thinking and the capacity to comprehend the language. Its audio and visual effects help them to transform English learning into capacity cultivation. It creates a positive environment for the classroom activities such as group discussion, subject discussion and debates, which can over more opportunities for communication among students and between teachers and students. Multimedia technology encourages students' positive thinking and communication skills in learning the language. (Pun 32)

The learners do better work with new interest and insight. They can participate with more internets in group discussion, subject discussion, seminars, and debates with the help of digital board and PPT. Indeed, multimedia can develop learners' positive thinking and communicative skills.

#### **III. Comprehensive Power**

The learners involve in collecting abundant information and language assisted materials through multimedia. The text of great importance can be available on one click which are helpful to them to remain in touch of vivid cultural, social, political, religious backgrounds, rich content and real life situations.

As they pursue sustained study of one content area through focus discipline research, the students become actively engaged in the process of meaning construction within and across different

media. Working though the complex intermingling of meanings, embedded within different texts encourages students to make connections as they build a wider range of schemata, which are then available to help them grasp future texts. (Joshi 34)

The learners can gather information of any place in the world with its photographs which help them to improve their descriptive ability. The information which they like most is available in English language. It can grow their comprehensive power because of the availability of material in audio-visual forms. It can enhance their understanding in order to communicate and make them active participants in classroom discussion.

#### **IV. Building Vocabulary and Constructing Sentences**

Multimedia can provide better scope to drill vocabulary and structures of sentences in English. "Through the interaction with multimedia, the students become increasingly familiar with academic vocabulary and language structure" (Joshi 34). It can help the learners to be efficient and fluent in English. Indeed, multimedia plays a major part in guessing the meaning of the words or guessing the words from the images or videos. This can grow their vocabulary and power of constructing sentences automatically.

#### **V. Effective Teaching**

Multimedia assisted teachings enrich contents of the study and make the "student centered" class. It helps learners to grasp the whole of the topic and inspire them to raise questions in the class. As a result of it, the learners can grow their confidence and speak in English fearlessly. Sometimes, it becomes more difficult for the students to listen teacher clearly because of the over strength of the class. Whereas the multimedia based laboratory can facilitate sound effects to the learners individually. This can make learners to cater individual and co-operative effects of clarity and freedom.

### **MULTIMEDIA IN TEACHING AND LEARNING ENGLISH: DRAWBACKS**

Multimedia plays very important part in Teaching and Learning English. However, the process has some drawbacks. The teachers and the learners can

face some problems while using multimedia in practical teaching, Mere use of multimedia devices during teaching, the teachers may be turned into slaves to the multimedia and cannot play the leading role in teaching, Whereas, the continuous use of multimedia technology featuring audio, visual, textual effect fully meets audio and visual requirements of the learners and enhance their interest, but it also results in lack of communication between teachers and students. It can also lower their creative thinking potentials. Thus, the method can suffer the teaching and learning process.

### **CONCLUSION**

Indeed, multimedia plays an important role in growing learners' interest in English, improving communicative skills, increasing comprehensive power, building vocabulary, constructing sentences, and effective teaching skill. Despite of the drawbacks, multimedia can prove an effective tool in teaching and learning English, if used in proper proportion. If the traditional process is assisted with computer based cooperative language leaning, it can bring desired effects.

In fact, the ultimate aim of multimedia language teaching is to grow learners' interest with the use of existed teaching methods. Multimedia assisted learning can bring a 'wow' in traditional process of teaching and learning English. During the process of optimizing the multimedia English teaching, traditional instruments and devices should not be overlooked. The blackboard can't be replaced by computer screen. Overuse of multimedia should be avoided. The learners should be motivated and guided to communicate in English with each other in order to make them to face real life situation.

Barring a few problem areas multimedia technology can be used effectively in classrooms of ELT with proper computer knowledge on the part of teachers, overcoming the finance problems in setting up the infrastructure and not allowing the teachers to become technophobes. (Patel 122)

However, this innovative method of teaching and learning English when assisted with multimedia can efficiently improve learners' ideation and practical language skills

### **REFERENCES**

- a. Joshi (2012). Multimedia: A Technique in Teaching Process in the Classrooms --, Curr World Environ, 34. DOI: <http://dx.doi.org/10.12944/CWE.7.1.05>.

2. Chirag Patel (2013). Use of Multimedia Technology in Teaching and Learning communication skill: An Analysis --, International Journal of Advancements in Research & Technology, 122. <http://www.ijoart.org>.
3. Min Pun (2013). The Use of Multimedia Technology In English Language Teaching: A Global Perspective--, Crossing the Border: International Journal of Interdisciplinary Studies, 32. <https://www.nepjol.info/nepal/index.php/C TBIJS/article/download/10466/857>.
4. Priya, N.S Vishnu and K. Sunthara valli (2016). Use of Multimedia in English Language Teaching --, International Journal of English Language, Literature and Humanities, 189. [www.ijellh.com](http://www.ijellh.com)
5. Simhachalam Thamarana (2015). Role of Multimedia Resources in Teaching and Learning of English Language --, Teaching English Language and Literature: Challeges and Solutions, 169. <https://www.researchgate.net/publication/283214562>



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## RESEARCH-BASED PRACTICE WITH WOMEN WHO HAVE HAD MISCARRIAGES

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### ABSTRACT

*To summarize a research-based description of what it is like to miscarry and to recommend an empirically tested theory of caring for women who have experienced miscarriage.*

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**Keywords:** *caring; miscarriage; theory construction; counseling Swanson's Middle Range Caring Theory Missed Miscarriage Qualitative Method*

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### INTRODUCTION

About 15% of women with a clinically recognised pregnancy will miscarry spontaneously during the first trimester.<sup>1</sup> Current management often involves the surgical evacuation of retained products of conception even though serious complications—for example, infection, uterine perforation, or bowel damage—may arise.<sup>2</sup> Early pregnancy assessment units open to patients without the need for referral and the use of transvaginal ultrasonography have enabled the presence and stage of early pregnancy failure to be determined from direct images. Preliminary data arising from these developments have shown that expectant management with serial monitoring may be used to identify those patients who will not require surgery.<sup>3 5</sup> More studies are required on the acceptability of this management strategy and on the relation between the information derived from ultrasound scans and the clinical outcome. We report an observational study designed to assess the uptake and effectiveness of expectant management for different clinical presentations of spontaneous miscarriage in consecutive unselected patients attending an early pregnancy assessment unit.

The Miscarriage Model is a useful framework for anticipating the variety of responses women have to miscarrying. The caring theory is an effective and sensitive guide to clinical practice with women who miscarry.

### MATERIAL AND METHODS

#### 2.1. Design

A deductive study was performed with data accumulated from two different contexts interviews in Sweden. In 2002 - 2003 one of the

interviews was conducted with the women who had experienced miscarriage and in 2007 with the nurses and midwives who cared for the men and women who shared the experience as a couple of late missed miscarriage. All interviews were transcribed and analyzed deductively according to Swanson's Middle Range Caring Theory.

#### 2.2. Statistics of Participants in Group One

The participants in this study were divided into two groups. Group one (women) included the women who had experienced a miscarriage and participated in the structured followed-up visit that included a tape recorded interview four weeks after early miscarriage. The study period was from August 2002 to June 2003. The inclusion criteria included only participants who had a miscarriage diagnosed before the thirteenth week in the pregnancy term by an ultrasound examination. Participants were also required to speak Swedish. Exclusion criteria included those women who kept their pregnancy secret to their spouses and next of kin and also those women who were younger than eighteen years of age. Of the potential eligible women twenty-five agreed to participate.

The mean age of the women in group one was thirtyone years. The median point in the pregnancy term when the miscarriage occurred was at nine weeks. The median number of previous children born to the women in group one was nil. The median number of earlier miscarriages experienced by the women in this group was one miscarriage. Nine of the women were primiparous and thirteen of the women had given birth previously and seven had prior experience of miscarriage. The twenty-five women who participated in the interview process had a total of sixty-one pregnancies among them with various outcomes. The interviews lasted a mean length of forty-five minutes from a range

of twenty to hundred minutes. The main question in the interview that was asked of the participants was to relate to the interviewer the experience of their miscarriage.

The participants in group two (caregiver) were the nurses and midwives selected from these three domains: four midwives at an ultrasound department, five midwives at

### 2.3. Statistics of participants in Group Two

Interview Number	Pregnancy	X	Para	Miscarriage	Abortion	Interview
1	4.0	0.0	2.0	0.0	1.0	1.0
2	4.0	0.0	1.0	2.0	0.0	1.0
3	1.0	0.0	0.0	0.0	0.0	1.0
4	1.0	0.0	0.0	0.0	0.0	1.0
5	4.0	0.0	2.0	0.0	1.0	1.0
6	3.0	0.0	2.0	0.0	0.0	1.0
7	6.0	0.0	3.0	0.0	2.0	1.0
8	3.0	0.0	2.0	0.0	0.0	1.0
9	1.0	0.0	0.0	0.0	0.0	1.0
10	1.0	0.0	0.0	0.0	0.0	1.0
11	2.0	0.0	1.0	0.0	0.0	1.0
12	1.0	0.0	0.0	0.0	0.0	1.0
13	3.0	1.0	0.0	1.0	0.0	1.0
14	2.0	0.0	1.0	0.0	0.0	1.0
15	1.0	0.0	0.0	0.0	0.0	1.0
16	1.0	0.0	0.0	0.0	0.0	1.0
17	3.0	1.0	1.0	0.0	0.0	1.0
18	2.0	0.0	1.0	0.0	0.0	1.0
19	3.0	0.0	0.0	2.0	0.0	1.0
20	3.0	0.0	2.0	0.0	0.0	1.0
21	4.0	0.0	2.0	1.0	0.0	1.0
22	1.0	0.0	0.0	0.0	0.0	1.0
23	1.0	0.0	0.0	0.0	0.0	1.0
24	4.0	0.0	1.0	1.0	1.0	1.0
25	2.0	0.0	0.0	0.0	1.0	1.0
	61.0	2.0	21.0	7.0	6.0	25.0

The mean age of the women in group one was thirty-one years. The median point in the pregnancy term when the miscarriage occurred was at nine weeks. The median number of previous children born to the women in group one was nil. The median number of earlier miscarriages experienced by the women in this group was one miscarriage. Nine of the women were primiparous and thirteen of the women had given birth previously and seven had prior experience of miscarriage. The twenty-five women who participated in the interview process had a total of sixty-one pregnancies among them with various outcomes.

**Table 1.** Background Data for the 25 interviewees in the study.

a maternity clinic and four nurses at a gynecological ward in the Stockholm and Uppsala areas. These facilities are located within sixty miles of each other in large urban areas. The selection of interviewees from the Stockholm and Uppsala areas strengthens the reliability of this study because of the authors' familiarity with the region. Smaller outlying communities were

excluded because the authors' were unfamiliar with the organizations outside of their immediate connections. The clinics that responded first were included in the study. The inclusion criteria were a minimum of two years professional experience and having cared for women who had been diagnosed with missed miscarriage during a routine ultrasound-scan in pregnancy week eighteen to twenty. There were a total of thirteen 13 semi-structured interviews were used for data collection.



The interviews were taped and lasted an average of forty-five minutes. Data was compiled during the spring and summer 2007.

**2.4. Data Analysis**

Content analysis was applied to the verbatim transcripts of both the group one and group two

interviews. The text was then analyzed in several stages and the first stage was that each interview was read and reviewed as a whole. The second stage consisted of meaning-bearing

Interview Number	Profession	Unit	Location
1	Registered nurse	Gynecology Ward	Hospital •
2	Registered nurse	Gynecology Ward	Hospital
3	Registered nurse	Gynecology Ward	Hospital
4	Registered nurse	Gynecology Ward	Hospital •
5	Registered Midwife	Maternity Clinic	Maternity Clinic •
6	Registered Midwife	Maternity Clinic	Maternity Clinic •
7	Registered Midwife	Ultrasound Department	Hospital
8	Registered Midwife	Ultrasound Department	Hospital
9	Registered Midwife	Ultrasound Department	Hospital •
10	Registered Midwife	Ultrasound Department	Hospital •
11	Registered Midwife	Maternity Clinic	Maternity Clinic
12	Registered Midwife	Maternity Clinic	Maternity Clinic
13	Registered Midwife	Maternity Clinic	Maternity Clinic •

**Table 2.** Interviews in chronological order, including background and place of employment. Interviews marked with • were held in Stockholm. Other interviews were held in Uppsala.

linguistic units being selected and assigned from the transcripts of both the group one and group two interviews. The linguistic units with similar meaning were grouped together [21] and they ranged from a few words to several lines of text [. The third stage of the analysis consisted of the discussion and coding of the linguistic units. Each meaning-bearing unit was given a code, sub categories and main categories based on categories of the Swanson Middle Range Caring Theory .

The group one interviews were analyzed by author A. A. The group two interviews were analyzed by author C. J. both on the basis of the Swanson Middle Range Caring Theory .

In the results section each category of the Swanson Middle Range Caring Theory are presented as headlines. The findings from both group one and group two are described in the text and the confidence in the findings is confirmed with the remarks and some quotations from the transcripts of the interviews.

**2.5. Ethical Considerations**

The study of group one was approved by the regional ethics committee at the University of Gothenburg. Ethical permission for group two was received for from the Karolinska Institute’s Regional Ethical Examination Committee in Stockholm.

**2.6. Consents Issues**

The women and the caregivers signed a written informed consent form before participating in the study. The maternity clinics, hospitals, midwives, nurses and their supervisors have not been identified. The interviewees were told that the interviews and all the study material will be treated confidentially .

The research program included three phases: interpretive theory generation, descriptive survey and instrument development, and experimental testing of a theory-based intervention. A deductive study was performed with data accumulated from two different contexts interviews in Sweden. In 2002 - 2003 one of the interviews was conducted with the women who had experienced miscarriage and in 2007 with the nurses and midwives who cared for the men and women who shared the experience as a couple of late missed miscarriage.

All interviews were transcribed and analyzed deductively according to Swanson's Middle Range Caring Theory.

### DISCUSSION

In our observational study, most patients with retained products of conception chose expectant management; they were probably influenced by the knowledge that they could rapidly receive surgical treatment if required. We believe that the success rate of expectant management was dependent on the extent and quality of patient counselling, particularly when transvaginal blood loss was great (which may be associated with a higher rate of complete miscarriage). The lower rate of complications in women who chose expectant management is reassuring, although this finding depends on many factors, which will vary with the setting.

Our data show that the classified results of transvaginal ultrasonography can be used to advise patients of the likelihood that their miscarriage will complete spontaneously within given periods of time from the day of classification. It is also reassuring that the ultrasound criteria for a complete miscarriage in the absence of transvaginal bleeding seem to give valid results. We are aware, however, that some patients may have experienced problems that were not reported to us, and they may have received additional advice or treatment elsewhere.

Further studies are needed to obtain more data on the usefulness of transvaginal ultrasonography to define an outcome measure for a complete miscarriage and to validate and improve endpoints for the classification of first trimester miscarriages. The current odds in favour of a successful outcome for patients with an incomplete miscarriage, a missed miscarriage, and an anembryonic pregnancy are about 9:1, 3:1, and 2:1, respectively. Patients can now be encouraged to persevere with expectant management, because of the high

completion rate by day 14 from classification. The implementation of these findings will reduce the number of women undergoing surgery.

### Findings:

A theory of caring and a model of what it is like to miscarry were generated, refined, and tested. A case study shows my own response to miscarrying and illustrates clinical application of the caring theory.

### RESULTS

#### 4.1. The Caring Process according to Swanson's Middle Range Caring Theory Maintaining Belief

##### 4.1.1. Women

From the results of the interviews with the women it was determined that there was no standard way that each woman would react to the miscarriage. Each woman reacted in an individual manner and in a manner that suited her and her frame of reference.

Some women who have suffered a missed miscarriage have feelings of powerlessness and anger when they have felt that there was a problem with the pregnancy. but they were not believed. In some cases, there have been no available times for a control examination at the clinic or the gynecology ward.

"I have been so anxious and called around to several different places."

Some women felt comfortable sharing their experience and their feelings about the miscarriage with others to various degrees while other women kept the experience to themselves and their intimate circle.

##### 4.1.2. Caregivers

From the results of the interviews with the caregivers it was determined that some women felt that something was wrong with their pregnancy up to several weeks before it was confirmed that a missed miscarriage had oc

Interview and Rec-number	Meaning bearing unit	Condensed meaning-bearing unit	Code	Sub-Category	Category
10. 6 - 8	"I tell them as soon as I can see it. They notice it from my reaction when looking down quickly, touching the woman's arm with sincerity, saying " "This doesn't look good. I can't see a heartbeat."	Immediate information about the ultrasound diagnosis	Information	Support from the midwife at the ultrasound department	Knowing
5. 33	"Some want all the facts about the diagnosis even though they cannot take it all in because they are still in shock."	Receive the couples reaction	Being present	Support from the midwife at the ultrasound department	Being with
9. 44 - 48	"We sit with them, let them cry or are just present."				
4. 50 - 52	"We try to make sure that they don't experience pain, because the miscarriage can be a very painful experience."	The nurse give the women pain relief	Administration of pain relief	Support from the nurse at the gynecological ward	Doing for
12. 103 - 105	"It is a basic need. When you are in a difficult situation you need someone to talk to."	The midwife calls the woman	Follow-up	Support from the midwife at the maternity clinic	Enabling

**Table 3.** Interview and line numbers. Meaning bearing units from various interview units in addition to condensed meaningbearing units. codes, sub-categories and categories are exemplified.

curred at an ultrasound examination. They no longer felt pregnant. they had fewer pregnancy symptoms and they have experienced minor bleeding. The midwife confirms the woman's suspicions.

"Your feelings were right."

The midwife confirms the woman's sadness and grief over the loss of her pregnancy. She assists the grief stricken women to accept the diagnosis in spite of her shock.

It is recommended that the man remain with his partner during this time as they experience what has happened together and both receive the same information and answers to their questions. The couple helps each other to work through the initial period after the miscarriage and at the same time they attempt to work through the grief phase together and get ready to attempt a new pregnancy if they so desire.

#### **4.2. Knowing**

##### **4.2.1. Women**

An early miscarriage is typically diagnosed within the first twelve weeks of the pregnancy term as a result of the woman experiencing symptoms such as bleeding and abdominal cramping.

"I had a great amount of pain and bleeding."

This is normally confirmed with an ultrasound examination. After the miscarriage they must be aware of the physical conditions necessary to become pregnant such as the timing in the menstrual cycle and when it will be physically appropriate to become pregnant again after recovering from the miscarriage.

##### **4.2.2. Caregivers**

A missed miscarriage may also be diagnosed several weeks later in the pregnancy term as a result of bleeding and cramping symptoms experienced by the woman or it may unfortunately come as a surprise result of the routine ultrasound examination performed at approximately the eighteenth week in the pregnancy term. During the routine ultrasound examination the couple and the midwife see the same images of the fetus on two separate monitors. First, the fetal heart activity is evaluated by the midwife and if the pregnancy is determined to be nonviable she must tactfully and honestly convey her observations. She makes physical human contact by touching the woman's arm.

"I can't see any heart activity."

When the midwife makes the determination that the pregnancy is nonviable an obstetrician is summoned to confirm and explain the diagnosis and also to assist in answering any questions or concerns the couple may have at this point. Understandably they may be very concerned that the fetus has been deceased in the uterus for up to four or five weeks.

#### **4.3. Being with**

##### **4.3.1. Women**

Some women may find it extremely difficult when they receive the confirmation that they have had a miscarriage and others may feel that the experience was not so difficult.

"Seeing the ultrasound image was tough."

Some women feel especially vulnerable and exposed when they are positioned for an intra vaginal examination on the examination table. Some women will experience particularly raw emotions at the sight of significant blood clots of tissue in the toilet and feel acute distress or panic.

##### **4.3.2. Caregivers**

During the registration interview at the maternity clinic, contact is made and a relationship is established. In the event the woman should express concern for symptoms that may indicate early or missed miscarriage the caregiver will attentively listen, reflect and determine an appropriate course of action. In the ultrasound department there is a special room where they can go after the ultrasound examination. There, the doctor and the midwife explain the diagnosis and the patient can ask questions.

"We sit with them let them cry or are just present."

The midwives caring for the woman during the ultrasound scan and subsequent diagnosis of miscarriage stay with the couple and answer their questions and try to assist them in finding meaning in the experience in the context of being a significant life experience.

#### **4.4. Doing for**

##### **4.4.1. Women**

Women appreciate that the nurse provide their basic physical need such as providing toilet facilities. Providing a blanket and controlling food and drink intake.

Before the pregnancy termination one woman said.

"I appreciate a small gesture when the anesthesiologist wiping away my tears before anesthetizing."

##### **4.4.2. Caregivers**

Doing for the caregiver may make appointments for a diagnostic examination or a follow up

examination. It may be necessary to make arrangements for psychological evaluation or to provide counseling. If it is determined that an evacuation procedure is needed the caregiver may be in the position to make a phone call to arrange an earlier scheduled appointment to reduce the stressful waiting time for the woman. Perhaps the nurses at the gynecology ward could arrange a single room. There the nurse can establish contact and couple can talk undisturbed. The nurse regularly checks the couple as often she can to give them information even if they do not summon her and she gives the women pain relief.

“We try to make sure that they don’t experience pain. because the miscarriage can be a very painful experience.”

#### **4.5. Enabling**

##### **4.5.1. Women**

Post diagnosis the woman must be aware of some important information before making any decisions regarding to becoming pregnant again or not. First of all. they are informed that it is possible to become pregnant as early as three weeks after the miscarriage and that an early pregnancy is not a risk physically speaking. Psychologically, however, it is possible that a new pregnancy will bring on a return of fear and anxiety about the recent miscarriage.

“I felt unable to explain how I felt about it afterwards”

If the woman decides not to attempt to become pregnant immediately following the miscarriage, contraceptives are prescribed.

##### **4.5.2. Caregivers**

Midwives initiate the enabling process by taking their time during the ultrasound examination to give the couple time to assimilate their emotions and reactions after the diagnosis. It is helpful if the

woman’s partner is invited into the conversation and they are posed questions regarding their thoughts and feelings.

Midwives perceived that the couple appreciated that they carrying out the follow-up, discussing the situation, making a telephone call and offering a return visit.

The midwives emphasize the importance of a social network that includes family and friends to talk with about their feelings regarding their experience.

“When life is tough, it is good to have a network to support you, when happiness turns to sorrow. Having the support of a social network can be an important part of the grieving process.”

### **CONCLUSIONS**

Swanson’s Middle Range Caring Theory includes being emotionally present, respecting the women’s dignity.

being competent, meeting each individual woman’s needs and being objective. Midwives need to give the women clear information and add to their better understanding regarding their new life situation. Giving the women self-esteem, keeping a positive attitude, and showing realistic optimism are important. Midwives provide understanding to the whole situation, propose reflection, being trustworthy for the women and improve their wellbeing. Given the proper care every woman has the power within herself to experience a life event such as miscarriage without diminishing her life experience and wellbeing.

### **ACKNOWLEDGEMENTS**

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### **REFERENCE**

1. Kristen M. Swanson RN, PhD, FAAN  
**Cited by (CrossRef):** 21 articles  
Randomised study comparing expectant management with medical management for first trimester miscarriages.Br J Obstet Gynaecol1999
2. C. Jansson and A. Adolfsson, “Swedish Study of Midwives’ and Nurses’ Experiences When Women are Diagnosed with a Missed Miscarriage during a Routine Ultrasound Scan,” Sexual & Reproductive Healthcare, Vol. 2. No. 1, April 2010, pp. 67-72.
3. J. Cullberg, “To Meet People in Crisis.” In: J. Cullberg and T. Lundin, Eds

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## THE ROLE OF TECHNOLOGY IN THE AGRICULTURE DEVELOPMENT OF INDIA

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### ABSTRACT

*In the development of our country technology has been proving very resourceful for all round development of the society at large. In short technology has the potential to play an important role in economic growth and social development. . India has come up with various technological innovations in every sector. This paper reviews several aspects of role of technology in the evolution of Indian Economy.*

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**Keywords:** Agriculture, Technology, India

### INTRODUCTION

Technology has been spreading all over the world by leaps and bounds. It has encroached every walk of life. India as a country has made progress in every sector after her independence. In the last seven decades, in the fields of industry, agriculture, education and banking, our country has made tremendous progress. India is a mixed economy and its base is agriculture. Our nation cannot progress unless we make development in the field agriculture. The complete raw materials are sought from agricultural resources. Thus, every industry runs with the support of agricultural products only.

It has changed the face of industry, banking, agriculture, education and means of transportation. The Indian economy has geared up its speed in present context. Indian industry has growth many manifold since 1980s. The industry has contributed considerably to the economic in terms of GDP employments and foreign exchange earnings. Because of spread of technology the competence of industry is increasing and almost all sectors of the economy like services and at banks, post offices, railways airports etc.

Information technology is a knowledge based industry, IT industry embraces production, manipulation, storage and dissemination of information. IT sector has a remarkable potential for accelerating economic growth of the nation. It has made our governance efficient. It enhances excess to information, excess to government services, protects consumers, makes skill development and training more effective, progresses delivery health services and promotes transparency. Thus the role of IT industry in

enhancing the economic development of country has been acknowledged by the government.

Beside IT Biotechnology has brought radical changes in agriculture. Use of Biotechnological tools in agriculture could make food crops high yielding and more robust to biotic and a - biotic stresses. This could stabilized and increase food supplies which is important against the background of increasing food demand, climate change and land and water scarcity. Due to biotechnological tools the productivity of the food crops have increased immensely, such as soybean, corn, cotton etc. Bt cotton has certainly increased the profitability of the farmers and at the same time it reduced the use of chemical pesticides in this crop drastically. Studies suggest that the introduction of Bt technology has reduced food insecurity by 15-20% among Indian cotton growers. The country has also developed golden rice which is rich in B-carotene. This is a great solution for India as nearly Five Thousand children go-blind every year because of deficiency of B-carotene. Thus biotechnology has supported the Indian Economy.

Nanotechnology can be used in agriculture in many ways. It can help in promoting soil fertility and balanced crop nutrition, effective weed control, enhancing seed emergence using carbon nanotubes, delivery of agriculture chemicals, field sensing system to monitor the environmental stressed and crop conditions and improvement of plant trades against environmental stresses and diseases. Application within animal husbandary might include improving feeding efficiency and nutrition of agricultural animals, minimizing losses from animal diseases, and turning animal by products and waste and environmental concerns

into value added products. In short, nanotechnology after considerable opportunities for the development of innovative products and application for agriculture, water treatment, food production, processing, preservation and packaging. Its use may bring benefits to farmers, food industry and consumers alike. Thus, nanotechnology has huge potential in revolutionizing the food packaging.

Protected cultivation or greenhouse cultivation is the most promising area where productions of horticultural crops has improved qualitatively world over in the last few decades. At present Spain, the Netherland and Israel are the leaders in cultivation of crops in polyhouses and greenhouses. The application of plasticulture can decrease the costs and therefore can lead to high productivity with a better quality of crops. In India the area under protected cultivation is around 25000 ha while the greenhouse vegetable cultivation area is about 2000 ha. India and the Netherlands having more or less same land under flower cultivation but in flower export, the contribution of Netherlands is 70% and India's contribution is just 1% because of advanced technology of polyhouses in the Netherlands. There technology based methods of cultivation have made a great revolution in the world market. Gradually, India is making a more in that direction of technology.

Technology has geared up the use of modern irrigation methods because of which the agricultural income has been increased immensely. Availability of enough water for crops in India is very critical. Raining in India is uncertain. Without water expected yield can not be achieved from agricultural sector. In India 78% water goes to the agriculture sector while the remaining goes to drinking, industry and other usage. But in modern times by using science and technology different irrigation system have been developed, such as

dripping sprinkling and water guns, mechanisms have been devised. It has helped the country like India to save water on large scale. These modern techniques of irrigation will increase irrigation potential in the direction of the optimal utilization of water resources to optimum irrigation scheduling. Micro irrigation is advance techniques of irrigation and it will increase water used efficiency and crop productivity.

Indian agriculture market is flourishing compared to that of past because modern technology has developed fastest transfer tools. Now most of the action and work related to farming have become technology supported the sowing of the seed, crop protection, harvesting, post harvest management to marketing have become sophisticated. Central government of India has under taken a program of connecting every Grampanchyat of the country with internet facilities. These Grampanchyat should become technology transfer hubs to the farmers.

Internet and mobile phones are powerful tools to impart knowledge on new developments, improve methods of cultivation in the field of agriculture. These tools can help in understand weather data and agro-climate condition, information of prices of agricultural products to the farmer. Throughout the country in each district KVKs have been established to make spread of latest technology in agriculture.

Variety of new methods is brought in force to make farming easy going business. Pesticides, fertilizers, micronutrients and computer assisted regulation have become a big boon to the Indian agriculture system.

In a way the use of technology in agriculture have supported the nation at large enhancing the ill-health of Indian economy. Technology has added its huge contribution in the general national income of our country.

## REFERENCES

1. Oliner SD, Sichel DE (1994) Computers and Output Growth Revisited: How Big is the Puzzle? Brookings Papers on Economic Activity 2: 273-334
2. Sichel DE (1997) The Computer Revolution: An Economic Perspective. Brookings Institution Press.
3. Granville B, Leonard C, Manning J (2000) Information technology and developing countries: Potential and obstacles. Tokyo Club Meeting, Munich, Germany,
4. Dedrick J, Gurbaxani V, Kraemer KL (2003) Information technology and economic
5. Chakraborty C, Nandi B (2003) Privatization, telecommunications and growth in selected Asian countries: An econometric analysis. Communications and Strategies.
6. Gujarati DN (2003) Basic Econometrics. 4th Edn., Tata McGraw-Hill, New Delhi

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## **EFFECT OF INFORMATION TECHNOLOGY ON TEACHING & LEARNING PROCESS OF ENGLISH**

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### **ABSTRACT**

*Language is the means of communication. Through this medium we convey message & express feeling & thoughts to each other. Throughout the world there are various languages are spoken in different region. In this world of different languages English language is the linking language. Through English we can communicate anywhere in the world. Therefore English teaching & learning became compulsory to all. 21<sup>st</sup> century will be known for revolution in Information Technology. Information Technologies have affected every aspect of human activity. It has potential role to play in the field of education & training, specially in distance education to transform it into an innovative form provide of experience. It can help to right information at the right time. This paper tries to analyze the necessity of IT & Multimedia Technology to language teaching.*

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**Key words :** English language teaching, Multimedia Technology, Teaching learning process, distance education.

### **INTRODUCTION**

It is said that mother tongue is our eye & English language is our spect. Mother tongue gives us vision but English enrich our vision capacity. Microsoft office programs, clip art is located in the clip organizer which contains a collections of photos, animations, sounds & videos. It present table, chart graphic information & other form of information. These all things intensity the knowledge of student makes them strong & confident. English language & Internet introduce various culture to student in the world. It helps to create harmonious nature of the student. With the spread & development of English around the world English is used as a second language in a country like India & for some people the first language. Therefore to improve communication skill in English, English teaching should be effective. For this purpose modern technology will be useful.

### **MATERIAL AND METHOD**

#### **ENGLISH LANGUAGE TEACHING**

The use of English language has increased rapidly after 1960. At present the role & status of English is that it is the language of social context, political, socio cultural, business, education, industries, media, library, communication across borders & key subject in curriculum & language of imparting education. It is also a crucial determinant for university entrance & processing well paid jobs in the commercial sector.

### **MULTIMEDIA TECHNOLOGY**

Internet is an integrate part of our daily life. All of us use whether directly or indirectly. Sometimes even knowingly or unknowingly internet has enabled us to communicate with people taking us beyond the restriction of socio political or linguistic bounties. Internet is network of network across the world that consist of millions of private, public, academic, business & government network which are connected using various networking technologies. Internet carry huge range of information resources. Website www (world wide web) gives us any news, images, map or information. Internet gives us any type of knowledge on anytime. It gives vast scope to the student. It makes easy & interested English language study. We get any information in form of video or audio visualized images strength the grasping power of student. Video & audios are useful for imagistic & phonetic study. Student can achieve right pronunciation skill & develop English communication skill. Word spelling & framer checker helps you proof read your document.

### **TEACHING LEARNING PROCESS**

Traditional method of teaching is based on text book & teachers skill. But modern teaching, leaning process involves all factors of society & modern technology. In modern teaching learning process we have to make co-ordination of books, teacher skill, multimedia. With this co-ordination

we make our subject interested. With the help of WhatsApp, Email & all other E-learning processes we connect classroom activity to the pre and other social factors. These all factors are making very fast progress in the new generation.

### **DISTANCE EDUCATION**

Multimedia & information technology increase the boundary of knowledge. Distance education is making students independent in their studies. Students come to get higher education while earning. Information technologies provide the opportunities of global interactions. Students can learn from interactions with the information, interface, teachers & co-learners using global networks. They can interact at their own & get rid of their routine work. They may review & explore the qualitative as well as quantitative data through computer networks. They can work on group projects, participation in learning & knowledge building activities. Under the influence of information technologies, teaching & learning

occurs in a changed situation. There seems a shift from teacher-centered teaching to student-centered learning.

### **CONCLUSION**

Above points make clear that information technology makes teaching & learning process very effective. It not only gives us knowledge but creates attachment among worldwide people.

The internet is largely responsible for transforming the world into what is known as a global village.

Ancient India's great concept of 'Vasudha Cutumbh Cumbh' culture appearing in fact. Information technology makes man to feel they are all the same. Their needs, their happiness, their sorrow, their feelings are all the same. It breaks the boundaries of nations, religions & languages.

It creates a melody of harmony among us through the melodies of prayer.

loZsfi lqf]ku % laUrq losZ laUrq fujke;k% !

loZs Hknz~kf.k i';Urq% ek df'pg% [kekizq;kr!!

Vkse 'kkaarh 'kkaarh 'kkaarh

### **REFERENCE**

1. Chennai: 15A, Ground floor, Thiruvengkatapuram 1<sup>st</sup> street, Near Nungambakkam Railway Station, Choolamedu.
2. Raipur: Behind Kailash Provision Store, Ravi Nagar
3. [www.mbdalchemie.com](http://www.mbdalchemie.com)
4. [www.viirj.org](http://www.viirj.org)





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## **PRESENT STATUS OF WOMEN EDUCATION AND EMPOWERMENT IN OUR COUNTRY**

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### **ABSTRACT**

*As women's education has become one of the key development objectives in the nineties, it is crucial to examine the assumptions under which policies, programmers and projects are formulated towards this goal. More recently, the concept of empowerment has been tied to the range of activities undertaken by and for women in different areas, education included. In all these, a related question is: From what and whose perspective are we going to evaluate such assumptions and its empowering outcomes? The International Seminar on Women's Education and Empowerment was convened by the UNESCO Institute for Education (UIE) together with the Principal Regional Office for Asia and Pacific (PROAP) precisely to look into these issues by gathering women educators and researchers from diverse socio-cultural backgrounds to collectively examine the different education practices and their theoretical implications for empowering women. At several instances during the seminar, it was evident that there were similarities in the conditions of women's education in the different parts of the world, e.g. stereotyping in the formal education system which further reinforces the traditional gender roles. On the other hand, it was also pointed out that one should not gloss over the differences of the conditions of women as a result of specific economic, political or socio-cultural factors. This article addresses the challenges and realities of this situation. It calls for government, political decision makers, NGOs, and other actors to come forward to ensure women's all round development for making India a developed country.*

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**Keywords :** *women empowerment; women's decade; India.*

### **INTRODUCTION**

#### WHAT IS EMPOWERMENT?

- Women's empowerment entails increasing the economic, social and political strength of women
- Women's Empowerment has one prerequisite – gender equality
- Women's empowerment can be divided into three stages

How are women empowered?

- By decreasing the gender disparities in all education
  - By decreasing the inequalities between men and women in aspects of economics, political and social life
  - Educating girls and women What statistics indicate women's empowerment?
  - Ratio of girl to boys in education
  - Ratio of literate females to males 15-24 years of age
  - Share of women in paid employment in nonagricultural sector
  - Proportion of seats held by women in national parliaments
- CURRENT SITUATION Educational Situation:**

Girls and women do not have the same access to primary, secondary and tertiary school. Over 100 million children of primary-school age are not attending school. Between 1999 and 2008 the number of out of school children decreased from 106 to 69 million. The majority of children, 31 million, live in Sub-Saharan Africa. The dissemination of girls out of school varies by region. Only in Sub-Saharan Africa, 24 million girls can't afford going to school.

**Origin of the Term Empowerment** It is interesting to note that most of the dictionaries only shows a pre-twentieth century definition of the verb empower meaning 'to empower', and 'to give power to'. The word was first used in the 17th century and has meanings like 'authorize', 'delegate', or 'enable'. The term empowerment, as a result, is a complicated idea. However, it implies the transfer of power in a dynamic way over a period of time. Empowerment seems to be a modern idea that would not have been possible 200 years ago when the idea of democracy and 'government of the people, for the people, by the people' was something to fight and die for. In the 20th century we saw many examples of political

empowerment in different countries in the world led by people such as Mahatma Gandhi, Martin Luther King, and Nelson Mandela. From the perspective of the members of low-powered group, empowerment refers to efforts to expand their base of power. The issue of 'women empowerment' is now a global phenomenon. Definition of the Term Empowerment In almost every society and in every sphere of life women assume unequal position and status; thus it is necessary to empower them by providing equal opportunities. The term empowerment is a multidimensional social process and it helps people gain control over their own lives. Further, it can be called as a process that fosters power in people for use in their own lives, their communities and in their society, by acting on issues they think as important. "Empowerment refers to increasing the spiritual, political, social, or economic strength of individuals and communities...." (Retrieved from <http://www.empowermentillustrated.com>).

Empowerment of women is not only imperative but also crucial for all-round development of society and the nation as a whole. The issue of 'women empowerment' has become a central point in the programs and activities of the United Nations and other Government and Non-Government Organizations. Subsequently, it has also become a major concern of the social scientists, politicians, bureaucrats and researchers. But there is a lack of unanimity among the scholars in comprehending the term empowerment. Various scholars have tried to define the term from their own perspectives. The term empowerment has different meanings in different socio-cultural, economic and political contexts. An exploration of local terms associated with empowerment around the world always encompasses a wide variety of definitions. These terms include self-strength, self-control, self-power, self-reliance, personal choice, capability of fighting for one's rights, independence, own decision making power, freedom etc.

### **OBSERVATION**

Individual empowerment is a process of personal development in a social framework: a transition from a feeling of powerlessness, and from a life in the shadow of this feeling, to an active life of real ability to act and to take initiatives in relation to the environment and the future. Community empowerment also includes a definition of a community as a partial, temporary and dynamic unit that originates in the human need for a sense

of togetherness and identification with others. Community empowerment can be realized in geographically defined areas that constitute the common critical characteristic of their residents, or it can develop in groups with other common critical characteristics, such as origin, age, gender, or physical disability. The discussion of individual and community empowerment has also touched upon the political meaning of empowerment. The perception of the empowerment process on all its levels as a political process is important to the present study, and is influenced by feminist thought, which accords a new meaning to social change. The group and the community organization are the main means of activating environmental processes. These are the settings which actively connect the individual with his environment and make possible a change which includes the individual, the group, and the environment in the one process.

### **CONCLUSION**

It is now well-known fact that the issue of women's empowerment for the positive change and transformation of the existing unequal society is more crucial and more important. So far women's role as mothers, homemakers, wives and sisters are well known, but their role in shifting the entire power relations of a country is a modern concept. It was John Stuart Mill, a British Member of Parliament, whose essay *The Subjugation of Women*, probably written with his wife Harriet Taylor Mill, was the first attempt in favor of establishing equality between the males and the females. Further, with the work of Mary Wollstonecraft's *Vindication of the Rights of Women* in the eighteenth century, the struggle for women's equality started to brew. But after the second half of the nineteenth century with the formation of world Women's Christian Temperance Union (WCTU- 1874, USA) and German Social Democratic Party (GSDP, Germany), under the leadership of Francis Williard and Clara Zetkin respectively, the fight for the women's causes including voting rights began to take a concrete shape.

These strong fifty per cent population need to be provided with equal opportunities in economic, social, political, educational, religious and legal spheres. It must be kept in mind that, "Gender equity is the realization of complete equality in all aspects of the social order regardless of gender" (Aspy & Sandhu, 1999, p. 9). For achieving complete equality in the society between two

genders, it is necessary to eliminate all kinds of domination, oppression and discrimination against the fair sex by their male counterpart. It is hoped that India will prosper and achieve its Vision –

2020 with hand to hand co-operation and active participation of both men and women in all spheres of developmental activities

### REFERENCES

1. Antony, V. (2006). Education and employment: The key to women's empowerment. Kurukshetra, February, a Monthly Journal of Ministry of Rural Development, New Delhi.
2. Aspy, C. B., & Sandhu, D. S. (1999). Empowering women for equity: A counseling approach. American Counseling Association, Alexandria, VA. 22304.
3. Batliwala, S. (1995). Meaning of women's empowerment. Women's World, 23-34
4. Biswas, S.K. (2010). New Tribal Panchayat in Nicobar Islands. Kurukshetra, Ministry of Rural Development, New Delhi.
5. Bishwanath, R. (2003). Empowering women. Yojana, a Monthly Journal of Ministry of Information and Broadcasting, New Delhi.
6. Bhadra, B. (2001). Janani O Prayukti: Lingakaran O Kshamatayaner Sahabastan. (Bengali ed.) Yojana.
7. Bhasin, K. (1998). Why empowering women. In Sushama Sahay (ed.), Women and Empowerment: Approaches and Strategies, Discovery Publishing House, New Delhi.
8. Berrett-Koehler. Burns, N., Schlozman, K. L., Verba, S. (2001). The Private Roots of Public Action – Gender, Equality, and Political Participation. Harvard University Press, Massachusetts, London, England.
9. Chandra, S. K. (1997). Women and empowerment. Indian Journal of Public Administration, July- Sept.
10. Chattopadhyay, A. (2005). Women and entrepreneurship. Yojana, a Monthly Journal of Ministry of Information and Broadcasting, 5(1), New Delhi.
11. Devendra, K. (2001). Whose empowerment are we talking of: Women! But where will we find our girls!!” In Promilla Kapur (ed.), Empowering the Indian Women. Publications Division, Ministry of Information and Broadcasting, Government of India, New Delhi.
12. Gorbachev, M. (2006). Education and employment: The key to women's empowerment. In Valsamma Antony (Ed). Kurukshetra, Journal of Ministry of Rural Development, New Delhi

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## CELEBRATION OF NATURE IN LITERARY STUDY: AN ATTEMPT OF ENVIRONMENTAL CONSCIOUSNESS

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### ABSTRACT

*Ecocriticism or Green Studies is a loosely organized theory came in existence at the end of the 20<sup>th</sup> century on the wake of postmodernism (a pluralistic approach to literary study). It is a literary and cultural criticism of literary texts to show the contribution of literature in conservation of physical environment and develop positive approach to help the burning problem of global warming. In another words, it is the study of the relationship between men, literature and the physical environment. It is a sincere attempt on the part of literature to preserve the elementary eco system to ensure the safe existence of humanity. While handling the environmental problems, it believes that the problem is resulted out of our anthropocentric culture in which human beings are taken at the centre of the planet. Hence, it allows us to exploit the nature for personal welfare. The environment of the planet is a victim of human greed and ego. It is also concerned to study the cultural definition of nature and to reveal how it is politicized. It believes that the solution to the problems is possible if we change the politicized culture into an eco friendly culture. This is the proper remedy to the disease. To promote the eco friendly culture, it reviews the romantic projection of nature in literary writing. The ecocritics reviewed the works of the English romantic poets and American transcendentalists to promote love for nature in our culture and by that to change capitalist attitude of the world.*

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**Keywords:** postmodernism, cultural criticism, physical environment, elementary eco system, anthropocentric culture, romantic projection, American transcendentalists

### INTRODUCTION

The relationship of Literature with Nature (Environment) is a well known pre-historical relationship. It can be stated that it is nature that has inspired human beings to be poetic in their mood and attitude. The serenity, the glamorous beauty and life supporting channels of nature always fascinated us against the distress, sorrow and suffering common to humanity. It is nature that has provided material source at the thematic level to literature to take its course in the future. To be obliged to nature, literature always celebrates nature and her various facets in its creation. Since ancient time the background of nature in which literary creations have been projected plays a significant role to shape the meaning in literary study. In another words, we can say that nature and literature always stimulated each other to tread the path in the course of time. But it should be stated that literature has been never studied from environmental perspective since the ancient time. With the specialization of knowledge, environment or ecosystem has been studied as a branch of physical science by neglecting the cultural perspective. It has been separated from humanity by taking the

conservation of nature as a scientific attempt. But at the end of the 20<sup>th</sup> century, the monopoly of physical science over nature is challenged in literary study by developing the concept of 'Ecocriticism' or 'Green Studies' in which the cultural construction of nature is thoroughly discussed and analysed. The new study reveals the fact that scientific attempt are not sufficient to address the burning issue of the environmental imbalance and disaster. The real problems are found in our anthropocentric culture in which we have taken ourselves superior to nature and allowed to interfere and exploit her for our existence. We feel that the surrounding environment is our personal property and we can do anything with it. While treating ourselves as a master of nature, we have forgotten the fact that our existence is totally dependable on the existence of environment.. If we damage the very structure of eco system, everything will be affected by it, including human existence. The culturally taken nature is a kind of hyper reality resulted out of our ego and greed. Out of our ignorance, we have accepted the hyper-reality by taking it as a reality.

Let me allow summing the cultural attitude and response of humanity to nature or eco sphere of

our planet by stating two anecdotes. There is a famous anecdote of Shaikh Chilli, popular as a child literature in India. Shaikh Chilli was notorious for his non sensible living and doing. Once he went into the field with axe in his hand to cut a tree. He climbed onto the tree to cut its branches. He tightened his grip of legs and taken every precautions to ensure his safety while cutting the branches. He decided not to repeat his old mistakes by doing something non sensible. He commenced his job with firm determination to cut branches without harming self. A stranger who was passing the spot warned him that he would fell down. Out of his determination and precautions, he took him as a foolish person by saying that it is impossible to fell down because of his grip and other measures taken to ensure his safety. Of course, he had taken every precaution to ensure his safety, but he failed to understand the fact that he was sitting on the same branch to which he was cutting from the stem side of the tree. For the sensible, there is no need to describe the end. This is our response to environment or the eco system of our planet. We have ensured our safety by the scientific advancement. But, like Sheikh Chilli, we are destroying the same planet on which we are living. Anyhow we can imagine life within a sphere of our planet, but it is impossible to imagine it without the existence of our planet. We are doing everything without thinking of the centre of our existence. This is the first stage of our environmental consciousness. Now we came to know about the reality after so many disasters like droughts, floods, typhoons, earthquake etc. Are we wise enough up? But our general answer to the question is 'no'. We know everything but unfortunately we have put goggles of confidence and reason to avoid the reality. This can be summed by the second anecdote which we found in Gilbert White's book, 'The Natural History of Selbourne'. There was a vicar of Selbourne who would follow the path of peace and mercy. Unfortunately, he would live as a neighbor to a butcher. He did not like the slaughtering of the innocent animals. His humanism forced him to avoid the filth and blood shedding of the animals. To save himself from the sight, he planted lime trees between his house and the butcher's yard opposite. The tree grew and the horrified sight disappeared from his insight. He was very much happy to save himself from the filth and blood shedding of the animals by forgetting the reality. Animals were still slaughtered and meat were still sold, what he had done was shun himself from the

scene. This is our response to the slaughtering of the environment. We have just avoided the situation, not solved. We, environmentalists, feel that we are doing too much to protect the nature; but our action has not brought any substantial change to change the destroying process of nature. We are speaking about hole in ozone layers, omission of carbon dioxide in atmosphere, deforestation and rising temperature of our planet, but have never stopped or controlled the production of vehicles, air conditioners, refrigerators etc. We are adopting dual policies to handle the situation. It is completely a sign of ignorance.

We are living in the world full of pollution, contamination and seasonal uncertainties. Over interference of human beings in the eco-system has disturbed the very balance of the environment. The advancement of civilization is making human life more and more comfortable and luxuries. But we have forgotten the fact that every luxury is coming out of the destruction of the surrounding eco system. It is fact that we are leading our planet towards destruction and making it harsh and inhospitable for our survival. The sensitive minds have studied the problem and ultimately come with the report that if we do not stop the interference, it will pose a series threat to human existence. They are appealing the world to stop the exploitation of nature. The matter has discussed at the international forums; but we fail to address the problem as the issue is politicized. Now it seems that it is impossible to solve the problem at the political level. Secondly the problem has been also handled and addressed at the scientific and technological level. But it is also falling short to address the problems. The high growth of population and consumption of food and rising demand of luxury and comfort are making it more and more complicate.

Literature is not a passive listener or beholder. It has always shown its responsibilities by handling the confronting problems to humanity. To be responsible to its attitude, the environmental problems have been discussed in literary study at the end of the 20<sup>th</sup> century under the head of 'Ecocriticism' in America or 'Green Studies' in the United Kingdom. At the very beginning it is declared that the problems are resulted out of the anthropocentric culture. Hence, solution can be found in the culture. What we have to do is to change the adjective- anthropocentric- into eco-centric. So they believe that problem lies in our

culturally constructed mind set. Hence, the problem can be handled at the level.

Ecocriticism or Green Studies is a loosely organized theory came in existence on the wake of postmodernism (a pluralistic approach to literary study). It is a literary and cultural criticism of literary texts to show the contribution of literature in conservation of physical environment and to develop positive approach to solve the burning problem of global warming. In another words, it is the study of the relationship between men, literature and the physical environment to show the organic structure. It is a sincere attempt on the part of literature to preserve the fundamental and elementary eco system to ensure the safe existence of humanity. The traces of such attitude is found in Britain in Raymond Williams' 'The country and the City' (1973) and in America, Annette Kolodny's 'The Lay of the land' (1975) as they discuss the importance of ecosystem and exploitation of nature by capitalism. In 1978, William Ruecket used the term first time in respect of the transcendental poetry penned by Henry Thoreau and Walt Whitman. But it becomes a recognized movement in 1990 with Cheryl Glotfelty and Harold Fromm. They played a significant role to establish a forum ASLE (Association for the Study of Literature and Environment) and started their own journal ISLE (Interdisciplinary Journal for the Study of Literature and Environment) to promote environmental study in literature. In England, it was Jonathan Bate who popularized the movement under the head of green studies. These attempts in America and England were aimed to create an eco friendly culture through literature.

As we have already mentioned that Ecocriticism or Green studies are concerned to protect the environmental balance, to sensitise the burning problem of global warming and in this way to make the planet hospital for all types of growth. But the question comes in our mind is how do they do it. They evaluate the literary text and trends in term of their contribution to environmental conservation and assess various faiths for their environmental implication. But the most important aim of the movement is to analyse the role of anthropocentric culture in devastation of nature. They are mostly concerned to study the cultural definition of nature and how it is politicized to establish human superiority over nature. They believe that the problem of the environmental disturbance lies in our culture in which humanity is taken as a master of this planet and they reserve

all rights to exploit the natural resources for personal welfare. It is this clash of culture and nature leading is the root of all environmental problems. The root of the anthropocentric culture is found in biblical account of creation in which it is stated that humanity has every right to utilize the natural resources for personal welfare. This account played a significant role to form and shape western culture. But it is a diversion of humanity from emotionalism to intellectualism (reason) had given a hard blow to the concept of inter-dependable living. The intellectualization process which began in the Renaissance and further strengthens in the 18<sup>th</sup> century's humanism, and culminated in the 19<sup>th</sup> and 20<sup>th</sup> centuries' industrial and scientific discoveries puts more stress on individualization. This attitude has opened the ground for human beings to degrade the nature for personal benefit and to satisfy ego. The unrestricted capitalism promoted the devastation of the surrounding physical environment in such a manner that now it is very difficult to restore the eco balance. This self-centered culture has forgotten the traditional concept of universal brotherhood and collective existence. During the period the planet was ruthlessly ruled vastly exploited to convert it into a waste land.

The ecocritics blame the humanity and its anthropocentric culture for the present degradation, but they do not forget to mention that it is a politicized game of capitalists rather than the less privileged section of the society. They argue that physical environment of the planet is a commodity of the business class and rich people. They are rich because of the nature. It is a simple logic that if wealth is taken as worth of labour then the question arises that how the capitalist have accumulated vast treasure of wealth doing nothing. Actually they have collected the wealth either by exploiting the nature or the common section of the society. We speak about equality but in real sense the higher section of the society does not follow the principle in their personal lives. Only the inferior section suffers from this injustice. The industrialists pollute the air but they are still enjoying the clean air by installing air conditioners. They believe that economical injustice going against the less privileged is also the root cause of environmental exploitation.

In spite of the adverse condition, ecocritics do not think that the condition has gone out of the control. We can address the problem at the cultural and political levels. They feel that literature is helpless to handle the political crisis. We have seen what

happened at Paris Climate summit in which America withdrawn from the agreement dealing with the greenhouse gas emissions. But, we have a lot of scope to do something at the cultural level. They reviewed the romantic attitude to nature promoted by the English Romantic Poets and the transcendental attitude to nature by the American Transcendental Poetry of Thoreau, Whitman and others to address the problem.

English Literature has given its immense contribution to the environmental consciousness by celebrating nature as a part of worldly existence of humanity. William Shakespeare and Edmund Spenser celebrated the lives lived in the bosom of nature. In 'As You Like It', William Shakespeare declared that it is better to live in the company of nature rather than to involve ourselves in the hectic activities of human beings. But the real celebration of nature came in the poetry written by the English Romantic poets of the 19<sup>th</sup> century. William Wordsworth, P.B.Shelley, S.T.Coleridge, John Keats, Robert Southey have connected nature with human survival and existence. They celebrated nature as a living object having ability of thinking, feeling and teaching. They have projected the hidden power of the nature and how she helps the distressed humanity in time of need. They also celebrated the nature with different attitude. Wordsworth spiritualises, S.T.Coleridge supernaturalises, P.B.Shelley Intellectualises, John Keats sensualises and Lod Byron revolutionizes the nature. S.T. Coleridge has shown the punishment of nature to human beings for interfering in its system in his poem, 'Rime of the Ancient mariner' and attraction of the untouched wood and prophesying power in 'Kubla Khan'. P.B.Shelley projected nature as a power to bring all types of changes in the world. He believes that nature is more reasonable and intellectual than the human beings. John Keats has shown that how nature makes human lives more colourful and sensible.

William Wordsworth who has been hailed as the high priest of nature has given a new insight to the world to experience the surrounding environment. It was he who has given a new dignity and prestige to nature in his poetic creation. His attitude to nature is always a matter of great interest for ecocriticism or green studies and ecocritics. It is his great love for nature has given a new hope to create eco friendly culture in the present age. Hence, it is interesting to come with his attitude to nature and how does it help us to form eco friendly culture in modern society so that nature can be

respected and by that the environmental balance of our planet can be sustained.

Wordsworth's conception of nature is a comprehensive concept that always crosses the limitation of the physical world. He was not only concerned with birds, hills, mountains, rivers, green land or the other objects of the environment but also with the eco friendly human culture. In his poetic creation, he always celebrated the simplicity of life without man made feelings (secondary feelings). He was against any types of materialism or capitalism as he could understand that these feeling are always harmful to the existence of nature. That is why he reviewed Jacques Rousseau's slogan 'back to nature' with double significance- to live a life in the company of nature with inborn nature. He would believe that the physical nature can be preserved only promoting basic human nature. The attitude reflected in his poetic creation always favoured to promote the same culture. Hence it is better to confront to the basic ideas of nature reflected in his poetry.

Wordsworth would feel that nature is a living entity having the capacity of feeling, thinking and teaching. She is the embodiments of the Divine spirit. A spiritual communication is possible with the nature if we approach with love and compassion. He would believe that there is divine soul behind the veil of nature. This is known as the stage of 'pantheism'. In this respect it is worthwhile to state the famous comment of Warwick James on Wordsworth. He says, "The foundation of Wordsworth's entire existence was his mode of seeing God in nature and nature in God."(William Wordsworth, p.n.22). Hence, Nature is the only source of happiness in the distressed world. She leads humanity from joy to joy up to the supreme joy of life. She always returns our love with a great interest. She does not betray us if we are sincere to her. Nature is the best teacher which can teach us the secret of living and happiness. She is able to teach a lesson of morality that can sustain the life in the course of time. He wrote to his friend in his poem, Tables Turned:

" And hark how blithe the thistle sings!

He, too, no man preacher,  
Come into the light of things,  
Let nature be your teacher,  
One impulse from a vernal wood,  
May teach you more of man,  
Of moral, evil and of good,  
Than all the sages can."

He opposed the intellectualisation of human culture. He would believe that the very spirit of

reason kills the sense of compassion for nature or surrounding environment. In his poem 'The World is too much with us' he criticized the materialistic attitude of human beings that kills the nature. We have been engrossed in the process of getting and spending that we do not love the beauty of nature. He has appealed the humanity to live a life with simplicity which can only sustain the existence of the world. Nature possesses soothing influence and healing power. He would say that the nature is an organic unity in which are also bounded. If we damage nature indirectly we are damaging ourselves.

Wordsworth formed his pantheistic culture only to save humanity from the coming distress. He was concerned with man and his welfare. But he came to know that it is impossible to imagine peaceful life without the existence of nature in her original form. Human existence is totally dependable on nature. He came with his own views on nature to react the growing faith of humanity over reason which started during the 18<sup>th</sup> century that is known as the age of Reason and Good Sense. As a great sage and prophet, he also reflected on the course of future which was leading the humanity towards degradation.

The so called Ecocriticism or Green Studies reviewed Wordsworthian (Pantheism) culture of nature only to address the burning problems of environmental imbalance. The Environmentalists feel that only such an attitude can save our planet from its present condition. Otherwise, it is impossible to handle the problem at the political or technological level.

Conclusion: In this way, the ecocriticism focuses its attention on culture to address the problems resulted out of environmental disturbance. They want to change the anthropocentric culture into eco centric culture by reviewing the nature writing in English Literature. They also concerned to show the structure of power politics promoted in our culture in which human beings are taken as a master of the universe. It is human ego, greed and materialistic attitude which are corrupting our environment. Hence, the problem cannot be handled at the scientific level or political level. This problem is resulted out of our anthropocentric culture and can be addressed only by changing this culture. Only cultural changes can save the environment which in some extent found in Hinduism and Bodhhism

#### WORK CITED

1. Barry, Peter. *Beginning Theory: An Introduction to Literary and Cultural Theory*. Manchester University press. (2007)
2. Waugh, Patricia. *Literary Theory and Criticism*. Oxford University Press. 2010
3. Russell, Bertrand. *History of Western Philosophy*. Rutledge Ltd. London. 2010
4. Abraham, M.H. & Harpham, G.G. *A Handbook of Literary Terms*. Cengage Learning, New Delhi. 2007
5. Nayar, Pramod K. *Introducing criticism at the 21st century*. Pearson, New Delhi. 2011
6. Wolfreys, Julian (ed.). *Introducing Criticism at the 21<sup>st</sup> Century*. Ecocriticism. Kate Rigby. Rawat Publication. 2002
7. Goodman, W.R. *History of English Literature vol.II*. Doaba House. 2009.
8. Mukherjee, S.K. *William Wordsworth*. Rama Brothers. 1997



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## INFORMATION COMMUNICATION TECHNOLOGY AND LISTENING SKILL

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### ABSTRACT

*In this digital era using technology in teaching and learning English is not a novelty. ICT is being used in teaching and learning of languages. This is also proved very fruitful. The rapid development of multimedia and other technological devices and social media (Facebook, skype and whatsapp) has change the way of learning and teaching languages in the world today. Tradition methods have been replaced by the new advanced ICT tools. The four basic skills of the language, listening, and reading writing and speaking is being teach and learn with the help of these technological devices. In this paper I have tried to discuss the important available resources on internet for improving listening skill.*

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**Key word:** facebook, internet, ICT, multimedia and technology

### INTRODUCTION

It is really important to have good communication skills in English language. English is one of the most essential languages in the world now. It has played key role in the process of knowledge explosion. Most of the students are eager to have a good communication skill in English. It is essential to teach English and develop English language skills for better earning and learning. Teaching English for communication began to play a significant role all over the world, and the importance of teaching listening increased.

English language teaching and learning has become compulsory in our educational system. As the advent of Information Communication Technology in every field of life, English language teaching and learning is no exception. ICT is being used in English language teaching and learning widely. Listening, Speaking, Reading and Writing are the basic skills of language. Listening had a significant place in second and foreign language learning. Studies conducted on listening in the field of second and foreign language learning revealed that listening is one of the most difficult skills for language learners (Goh, 2000; Guo &Wills, 2006).

The best way to learn English is through listening, though considered a conventional method. In this paper I have tried to find out the importance of ICT while improvise listening skill. Due the rapid change in the technology, the traditional methods of teaching and learning English are also changing with the advent of the Information Communication Technology.

Teaching English for communication began to play a significant role all over the world and the importance of teaching listening greater than before. The skill of listening when practiced appropriately, leads to the improvement of a person's capability to communicate efficiently.

### ICT BASED RESOURCES FOR DEVELOPING LISTENING SKILL

The Conventional classroom teaching and learning can be replaced by new information communication technology. Recently English language teaching and learning has undergone tremendous changes due to ICT. The use of Internet has brought many changes in teaching and learning English. Language teachers should keep themselves updated of the current trends among the student community and prepare them for the challenges of the future. Given the importance of listening in language learning and teaching it is crucial to give learners chance to develop and improve their listening skills. ICT is of enormous use in teaching and learning of English language. It provides teachers and students lots of creative and practical ideas to create a learner-friendly environment. Although "technology is not a panacea that can replace language teachers and face-to-face classrooms, it is something that can be used to enhance language learning" (Sharma & Barrett, 2007).

These resources provide highly motivational activities for the learners. Learners today have high hope when it comes to technology. One of the main characteristic of this technology is that the learner can use it at his own place and time. It could give him/her chance to practicing listening

regularly and become effective listener. Teachers and learners become independent learner as they can access authentic websites which provides lots of material for practicing listening. While they use material for listening, they could evaluate and select audio/video as per their requirement.

### **THE WORLD WIDE WEB**

World Wide Web has become unavoidable in teaching and learning of English with advent of the new technology. There are a number of websites on English language teaching and learning which may be used in a class room as well as outside the class. They help in improving one's speaking and listening skills. Number of Articles, Journals and newsletters are available on these websites. Audio and video lessons, television and radio broadcasts, including news and documentaries, and music videos are now at our fingertips through internet. There are numerous web sites specially dedicated to learning English as a second language. In addition to this, new generations of internet tools are available such as Skype, podcasts, online webcasts and live conferences etc. Moreover, social networks create multiple opportunities for authentic communication.

### **PODCASTS AND VIDEOS**

Podcasts are audio recordings which a user can subscribe to and download to his/her computer or portable listening device such as an MP3 player (Barber, 2007). Learners can download or listen online to the podcasts and videos on the smart phones at their leisure. Most of the audio files and podcasts are often accompanied by comprehension exercises and transcripts. Depending on the level of the learner the teacher can assign activities also. Podcasts are also becoming more popular with English learners, with the ability to listen anytime, anywhere, and English language podcasts are a great way to improve our listening skills. The most important benefits of online audio and video start with the range of material in terms of subject matter, accent of the speaker, and length. Video podcasts are also known as Vod casts or Pod Clips. Here are some important podcast web sites:

1. BBC Podcasts <http://www.bbc.co.uk/podcasts>

2. ESL Listening: Podcasts  
<http://iteslj.org/links/ESL/Listening/Podcasts/>
3. English Feed  
<http://www.podcastdirectory.com/podcasts/7538>
4. ELT Podcast <http://www.eltpodcast.com/>
5. Elementary Podcasts  
<http://learnenglish.britishcouncil.org/en/elementary-podcasts>
6. Professional Podcasts  
<http://learnenglish.britishcouncil.org/en/professionals-podcasts>
7. Splendid Speaking Podcasts  
<http://www.podcastdirectory.com/podcasts/21609>

### **APPS AND ONLINE SOURCES ON SMART PHONES**

Learners can also download apps on to their smart phones like British Council's Learn English Podcasts. The learners can listen to the audio files anytime and anywhere. These smart phones have many facilities such as MP3 player and video player. Smart Phones have many apps which allow the learner to learn English pronunciation from its most basic level. The Pronunciation App helps the student to study, practise and play with pronunciation wherever he/she is. This application provides Interactive Phonemic Charts for British English and American English. We can hear a sound, or tap and hold to hear the sound and an example word. The learner can explore the pronunciation from basic level to improve his accent and also has the recording facility where he can record his pronunciation and compare it with the actual one. The learner can listen to any number of conversations.

### **CONCLUSION**

With the proper use of technology, learning can be made more active, motivating, and learner-centred, especially with such internet-based resources as audio-video, podcasts, and video clip tools. Listening is one of the most important skills in learning English as second language. There are numerous software available to improve the language learning skills.

## REFERENCES

1. Anderson, A. & Lynch, T. (2003). Listening. Oxford: Oxford University Press.
2. Goh, C. C. M. (2000). A cognitive perspective on language learners' listening comprehension problems. *System*, 28 (1), 55-75.
3. [www.iallt.org/iallt\\_journal/the changing role of the teacher](http://www.iallt.org/iallt_journal/the_changing_role_of_the_teacher)
4. [www.en.wikipedia.org/wiki/communicative\\_language\\_teaching](http://www.en.wikipedia.org/wiki/communicative_language_teaching).
5. English Teaching Professional, Macmillan Publishers
6. Barrett, B., & Sharma, P. (2005). *The internet and Business English*. Oxford: Summertown Publishing Ltd.
7. Peterson, E. (2010). Internet-based resources for developing listening. *Studies in Self-Access Learning Journal*, 1 (2).
8. Hedge, P. 2000. Teaching and Learning in the Language Classroom. Oxford: Oxford University Press.



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## **EFFECT OF SOCIO-ECONOMIC STATUS ON NUTRITIONAL STATUS ON ADOLESCENT GIRLS IN AMRAVATI DISTRICT**

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### **ABSTRACT**

*Adolescence of Teenager is a youngster whose age falls inside the range from 13 to 19. Youth is the name for move period from adolescence to adulthood. Prevalence of Malnutrition is 42.3 among children of illiterate mother as compared to 20 % in those of literate mother. 43% of guardian's occupation is developed. The cumulative effect of socioeconomic status on families, neighbourhoods, schools and health care guarantees that poor and low income adolescents arrive at young adulthood in worse health.*

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### **INTRODUCTION**

Adolescence is one of the most imperative stages of growth and development of human lifecycle and Nutritional imbalance. During this stage is supposed to have prodigious impact on proper growth.

Teenager or teen is a young person whose age follows within the range from 13-19. They are called teenager because their age number ends with teen. Most societies traditionally had a formal ceremony mark the change from childhood to adulthood. During puberty, rapid mental and physical development occurs. Adolescence is the name for this transition period from childhood from adulthood.

Adolescence is one of the most phases of human development. Although the order of many of the changes appears to be universal, their timing and speed of change vary among and even within individuals, both the characteristics of individual and external factor. It can be defined by the World Health Organisation (WHO) persons aged 10-19 years. They comprise of 20% of global population and about 80% of them live in developing countries. On average, girls begin puberty at ages 10-11, boys at ages 11-12; Girls usually complete puberty by ages 15-17, while boys usually complete puberty by ages 16-17. The major landmark of puberty for females is menarche, the onset of menstruation.

Adolescence can be defined biologically, as the physical transition by the onset of puberty and the termination of physical growth, cognitively as changes in the ability to think abstractly and multidimensionality or socially, as a period of preparation for adult roles. Adolescence growth spurt is a rapid increase in the individual height and weight during puberty resulting

simultaneously release of growth hormone, thyroid hormones androgens. Measurements of nutritional anthropometry are based on growth in children and changes in adult. In this study, the socio-economic status effect anthropometry and nutritional status of adolescent is shown.

### **RESEARCH METHODOLOGY**

Research can be defined as classification of proper and objective observed facts, coordination and certification. Firstly, the researcher has to prepare the draft which wherein the subject of research, study field, duration, collection of information required for research, to determine the methods of collection, to decide the table of facts collection etc. The research has to consider the difficulties which may be occurred in future. Since draft is prepared, the co-ordination comes in the work of research. The field of research is limited to Amravati district.

### **SAMPLING METHOD AND SAMPLE SELECTION**

The study method of research is comprises of two data. First is Preliminary information is collected by taking personal interviews by way of questionnaire. Some girls are considered from Amravati City. It includes scheduled/questioner, personal interviews, physical inspection, discussion by making personal contacts. Secondly, the secondary information is collected. In this the information about consumer protection alertness, periodicals, magazines, newspapers and handwritten matters, records, Reference books is collected.

**MATERIALS AND METHODS**

Table I: Occupation

Sr. No.	Occupation of Parents	Frequency	Percentage
1.	Farming	108	43.2%
2.	Business	18	7.2%
3.	Daily Labour	90	36%
4.	Small Trader	24	9.6%
5.	Service	01	0.4%
6.	Other	09	3.6%
Total		250	100

In table I, the occupation of 108 parents is farming. The 18 parents are Businessman, 90 are Daily Labour, 24 are Small Traders and only one is doing service. 9 people are having other occupation.

Subjects are adolescents girls aged 10-19years belongs to rural area in Amravati District.

Table II: Body Mass Index and Occupation

Sr. No.	Different kinds of Body Mass Index	Occupation of Parents						Total
		I	II	III	IV	V	VI	
	CED I	27	6	28	7	0	2	70
	CED II	17	3	10	1	0	0	31
	CED III	10	03	05	2	0	0	20
	Normal	54	05	46	14	0	7	126
	Overweight	1	1	1	-	-	-	3
Total		121	35	75	13	0	6	250

Participants socioeconomic data are collected from different instruments, cross section study is done on 250 girls. Out of them 70 suffering from CED I whose parents depend on farming, 31 girls parent suffering from CED II. 20girls are suffering from

CED III whose parent's occupation is cultivation. The body mass index of 126 girls is Normal. The number of overweight girls is three.

Table III: Parents mean weight and their occupation

Sr. No.	Occupation	Mean Weight	Frequency
1.	Farming	44.76	108
2.	Business	44.53	18
3.	Daily Labour	44.23	90
4.	Small Trader	44.57	24
5.	Service	46.9	1
6.	Other	45.2	9
Total		44.46	250

Table IV: Parents mean weight and their occupation

Sr. No.	Occupation	Mean Height	Frequency
1.	Farming	151.28	108
2.	Business	150.94	18
3.	Daily Labour	150.72	90
4.	Small Trader	152.35	24
5.	Service	151.57	1
6.	Other	151.02	9
Total		151.02	250

The repercussions of low socioeconomic status in childhood and adolescence are often left throughout the life cycle. Studies of intergenerational income mobility have found a corresponding point in their careers the correlation.

**CONCLUSION**

Socio-economic factor represent standard of living of any people, in this study it shows skilled person adolescent girls have higher anthropometry, Family income also has a opportunities available to adolescents and on their chances of educational success. This study had shown socio-economic status affect living standard and nutritional intake, it effect adolescent growth too.

### REFERENCES

1. K. De, "Effect of Socio-Economic Status on Nutritional status on Adolescent Girls of PaschimMedinipur, West Bengal, India," *Vitam Miner*, 20 Jan 2017.
2. NF. Babar, R. Muzzafar, MA. Khan, "Impact of Socio-Economic on Nutritional Status in primary school children," pp. 15-18, 2010.
3. F. Delpuech, P. Traissac, Y. Martin-Prevel, "Economic Crises and Malnutrition- SocioEconomic determinants of Anthropometric Status of Pre-school children and their mothers in an African Urban Area," *Public Heath Nutrition*, pp.39-47, 2000.
4. G. Solon, "Inter-Generational Inter Morbidity in the United Stats," *American Economics Review*, pp. 393-408, 1992



## IMMEDIATE EFFECT OF GĀYATRĒ MANTRA CHANTING ON ATTENTION IN SCHOOL STUDENTS

Seema Derle

### INTRODUCTION

The *GāyatrĒ* mantra has been mentioned in Rig Veda. The *GāyatrĒ* mantra revealed to the sage *Vishwamitra* itself in a new meter called "*GāyatrĒ*". Hence the mantra came to be known as "*GāyatrĒ mantra*". It is also called Savitra mantra since it concerns the deity Savitra. (Swami Harshananda)

According to Indian tradition *GāyatrĒ* mantra initiated to a student before starting his/her formal education. It is said that by chanting *GāyatrĒ* mantra will bring the improvement in the *Dhĕ çakti* (the power of Intellect) (Bhatta, 2004). Other scriptural references are also suggestive of the influence of *GāyatrĒ* mantra on the brain function (*GāyatrĒ tantra* 1999).

Scientific investigation also found that yoga mantra and religious chanting had positive influence on many physiological and psychological functions of the body. For example, during both prayers and mantras, there was an increase in the synchronicity of cardiovascular rhythms when they were recited six times a minute. There was also an increase in baroflex sensitivity. These findings suggested that the recitation of the rosary and certain yoga mantras, at specific frequencies, induce favorable psychological and physiological effects (Bernardi, et al., 2001). The significance of recitation of Om in twelve 12 experienced meditator found subtle changes in mental state indicated by reduction in the skin resistance (Telles, Nagarathna, & Nagendra, 1998). The different types of meditation in Japanese Buddhism showed different brain regional activation. The recitation of buddha name (Nenbutsu) activated the prefrontal cortex, and the Buddhist Sutra activated the left dorsolateral prefrontal cortex and right parietal cortex (Shimomura, et al., 2008).

In a match paired control study using chanting Vedic hymns showed improvement in sustained attention in teen aged school students of residential setup of similar ambiance (Shripad, Nagendra, & Bhatta, 1998). Hence the present study has designed to evaluate the effect of chanting *GāyatrĒ* mantra on attention in school students.

### 2.2 LITERATURE REVIEWS

The acute effects of the ritual of reciting the Rosary, which contains relatively little specific religious content compared to receiving specific teaching of religious concepts, on the level of anxiety. Thirty students in a Catholic college divided into two intervention groups. Twelve (12) students participated in recitation of the Rosary, whereas 18 students viewed a religiously oriented video. Both groups were measured for anxiety pre- and post-intervention through the use of the State-Trait Anxiety Inventory. A significant reduction in anxiety was observed in subjects reciting the Rosary compared to the group of subjects watching the video. These preliminary results suggest that ritual itself may be a significant contributor to the effects of religious practices on psychologic well-being (Anastasi & Newberg, 2008).

To identify the regions activated during praying of the Namo Amida Butsu (Nembutsu), and the reciting of Buddhist scriptures (Sutra). Functional MRI (fMRI) was used to identify the regions activated by the Nenbutsu, the Sutra and the Shiritori in eight highlytrained Japanese monks. The task of repeating the Nenbutsu activates the medial frontal gyrus, which is mainly related to mental concentration and visuospatial attention, similar to the areas activated by meditation. The task of reciting the Sutra activates the left lateral middle frontal gyrus, the right angular gyrus, and the right supramarginal gyrus, which are related to visuospatial attention also involved in the area activated by meditation. Results suggest that different types of meditation in Japanese Buddhism showed different brain regional activation. The Nenbutsu activated the prefrontal cortex, and the Sutra activated the left dorsolateral prefrontal cortex and right parietal cortex (Shimomura, et al., 2008).

Autonomic and respiratory variables were recorded in 12 volunteers in three types of sessions (1). Before, during and after a test period of mentally repeating a meaningful syllable 'OM' (MOM session) (2). A similar session except that the test period was spent mentally repeating a neutral work, 'one' (COM session) (3). A session

with non-targeted thinking (NT session). The subjects were familiar with both syllables, and had been meditating on 'OM' for 20 days. During the test periods of both MOM and COM sessions the rate of respiration (RR) and heart rate (HR) decreased significantly [(two factor ANOVA (RR), paired t test (RR, HR)]. Compared to the pre period. Mental repetition of 'OM' (but not 'one') caused a significant decrease in skin resistance level (SRL) (paired t test). This was taken to mean that the subject recognized the significance of the syllable. No significant change occurred during NT sessions (Telles, et al., 1998).

The neurohemodynamic correlates of 'OM' chanting investigated using functional Magnetic Resonance Imaging (fMRI), the neurohemodynamic correlates of audible 'OM' chanting were examined in right-handed healthy volunteers (n=12; nine men). The 'OM' chanting condition was compared with pronunciation of "ssss" as well as a rest state. fMRI analysis was done using Statistical Parametric Mapping 5 (SPM5). Significant deactivation was observed bilaterally during 'OM' chanting in comparison to the resting brain state in bilateral orbitofrontal, anterior cingulate, parahippocampal gyri, thalami and hippocampi. The right amygdala too demonstrated significant deactivation. No significant activation was observed during 'OM' chanting. In contrast, neither activation nor deactivation occurred in these brain regions during the comparative task - namely the 'ssss' pronunciation condition. The neurohemodynamic correlates of 'OM' chanting indicate limbic deactivation. As similar observations have been recorded with vagus nerve stimulation treatment used in depression and epilepsy, the study findings argue for a potential role of this 'OM' chanting in clinical practice (Kalyani, et al., 2011).

### CHAPTER 3

#### AIM AND OBJECTIVE

##### 3.1 AIM

Present study was to compare the attention task performance between Poem line chanting and Gāyatrē mantra chanting in school students.

##### 3.2 OBJECTIVE

To study the immediate effect of Gāyatrē mantra

##### 3.3 RESEARCH QUESTION

1. Does Gāyatrē mantra chanting influences on attention?

##### 3.4 HYPOTHESIS

The Gāyatrē mantra chanting will enhance the attention.

##### 3.4.1 Null Hypothesis

Gāyatrē mantra chanting would not influence attention on school students.

##### 3.4.2 Alternative Hypothesis:

Gayatri mantra chanting would influence attention on school students.

### CHAPTER 4

#### 4.1 PARTICIPANTS

##### 4.1.1 SUBJECTS

The study was performed on 60 school children (both male and female) in the age group of 12-14 years (6<sup>th</sup>, 7<sup>th</sup> & 8<sup>th</sup> Standard).

##### 4.1.2 SOURCE

Niphad English School & Junior College Niphad, a well-known Government Educational Institute of the New education Society, Nasik.

##### 4.1.3 INCLUSION CRITERIA

Age range between 12 to 14 years  
 Healthy subjects who were motivated to chant.  
 Willing to participate in the research.

##### 4.1.4 EXCLUSION CRITERIA

The subjects were excluded from the study who were having some disabilities related to vocal chords in order to recite Gayatri mantra with all its attributes.

#### 4.1.5 INSTITUTIONAL ETHICAL COMMITTEE

Approval of the school Principal was taken before conducting the study. The parents of the students have given their consent for the study.

#### 4.2 DESIGN OF THE STUDY

Out of the 60 students each and every student was assessed in two sessions: 1. Gāyatrē mantra chanting session and 2. Poem line chanting session. The four recordings for each subject were made on two days sequentially. Each group took both Gāyatrē mantra and Poem line sessions in a two consecutive days.

Before (DLST)	Poem line chanting - 10 minutes	After (DLST)
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Before (DLST)	Gāyatrē mantra chanting-10 minutes	After (DLST)
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## CHAPTER 5

### 4.2.1 STRUCTURE OF SESSIONS

All the participants were trained in Gāyatrī mantra chanting and Poem line chanting over a period of 5 days before the starting of the study. This was a self as control study protocol. All participants were assessed on Digit Letter Substitution test before and after a period of Gāyatrī mantra chanting and Poem line chanting. The two sets of measurements took place on successive days. In order to avoid any possible learning effect the participants were divided into two sessions randomly. They were asked to sit comfortably on the floor in cross leg with eyes closed. Fifty percents of participants were asked to chant Gāyatrī mantra loudly for 10 minutes and remaining participants did Poem linechanting.

### 4.3 ASSESSMENT

#### 4.3.1 DIGIT LETTER SUBSTITUTION TEST (DLST)

The DLST consisted of a worksheet, which has 8 rows and 12 columns and randomly arranged digits in rows and columns. The students are asked to substitute as many target digits as possible in the specified time of 90 seconds. The letter substitution may be undertaken in a horizontal, vertical, or randomized manner by selecting a particular digit. The total number of substitutions and wrong substitutions are scored. The net score was obtained by deducting wrong substitutions from the total substitutions attempted (Natu & Agarwal, 1997).

### 4.4 INTERVENTION

#### 4.4.1. EXPERIMENTAL SESSION (Gāyatrī mantra)

The students were asked to chant Gāyatrī mantra about 10 minutes .During Gāyatrī mantra the eyes were closed & subjects followed the traditional procedure of chanting it loudly for its best effect to invoke the innate power of effulgence and Intellect.

*Om bhūrbhuvāḥ svaḥ tatsaviturvareṇyam  
bhargodevasya dhīmahi  
dhīyoḥ yo naḥ pracodayāt ||*

#### 4.4.2. CONTROL SESSION (Poem line chanting)

In control session the same subjects were seating in a relaxed posture with open eyes. The duration of both the session was same .Student asked to seat relaxed and poem line chant.

### 5.1 DATA EXTRACTION

DLST: The total number of substitutions attempted, and the number of wrong substitutions were counted. Then net score was obtained by deducting the latter from the former (Natu & Agarwal, 1997).

The answer sheets were coded and scoring was done by the researcher who was not involved in the study. It was cross checked by another researcher. Then entry was done in computer checking was done.

### 5.2 DATA ANALYSIS

The raw data obtained for each subject in each recording session were tabulated separately. Statistical analysis was done using SPSS.

### 5.3 EFFECT OF GĀYATRĪ MANTRA CHANTING ON DIGIT LETTER SUBSTITUTION TASK

The group mean and standard deviation were calculated. Repeated measures analyses of variance (RMANOVA) were performed with two 'Within subjects' factors, i.e., Factor 1: Sessions: Gāyatrī mantra chanting and Poem line chanting and Factor 2: States; 'Pre' and 'Post'. The RMANOVA was carried out for each variable separately.

Subsequently, post-hoc tests with Bonferroni adjustment were performed to compare the data of the 'Post' periods with those of the respective 'Pre' period and also the different states were compared between sessions.

#### 5.3.1 Digit Letter Substitution Test

There were significant differences in between Sessions (GM vs PL) in (i) Total score [ $F(1, 59) = 4.697, p = 0.034$ ] (ii) Wrong score [ $F(1, 59) = 0.26, p = 0.873$ ] (iii) Net score [ $F(1, 59) = 7.28, p < 0.001$ ].

There were significant differences in between states (pre vs post) in (i) Total score [ $F(1, 59) = 63.9, p < 0.001$ ]; (ii) Wrong score [ $F(1, 59) = 6.54, p = 0.013$ ] (iii) Net score [ $F(1, 59) = 83.26, p < 0.001$ ].

There was significant interaction between sessions and states in (i) Total score [ $F(1, 59) = 23.51, p < 0.001$ ]; (ii) Wrong score [ $F(1, 59) = 4.47, p = 0.034$ ] (iii) Net score [ $F(1, 59) = 27.85, p < 0.001$ ].

Post-hoc test with Bonferroni adjustment showed a significantly increase in (i) Total score ( $p < 0.001$ ) and (iii) net score ( $p = 0.001$ ) immediately after both GM and PL compared to their respective pre scores. There was a significant increase in Wrong score ( $p = 0.001$ ) in GM alone. The group average values  $\pm$  S.D. are given in **Table 5.3.1.1**

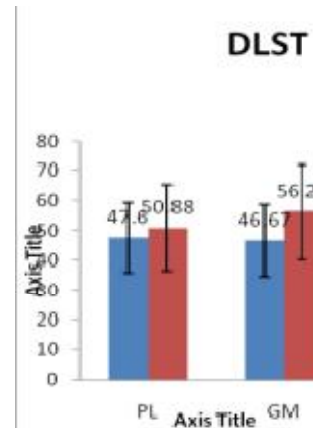
**Table 5.3.1.1** Total, wrong and net score for Digit Letter Substitution test pre and post Gāyatrē mantra chanting (GM) and Poem line chanting (PL) sessions; values are group mean  $\pm$  SD.

		PRE	POST	% Changes
Total Score	GM	46.67 $\pm$ 13.03	56.25 $\pm$ 12.37** *	21.46
	PL	47.62 $\pm$ 12.62	50.88 $\pm$ 12.71** *	2.83
Wrong Score	GM	0.80 $\pm$ 0.27	1.77 $\pm$ 0.12***	0.75
	PL	1.20 $\pm$ 0.29	1.43 $\pm$ 0.17	0.50
Net Score	GM	45.70 $\pm$ 12.70	54.83 $\pm$ 12.39** *	21.67
	PL	46.07 $\pm$ 13.43	49.43 $\pm$ 12.73**	4.85

**Abbreviations:** GM = Gāyatrē mantra, PL = Poem Line chanting;  
 \*\*\*  $p < 0.001$ , Post-hoc tests with Bonferroni adjustment, Post scores compared with respective Pre scores.

## CHAPTER 6 RESULT

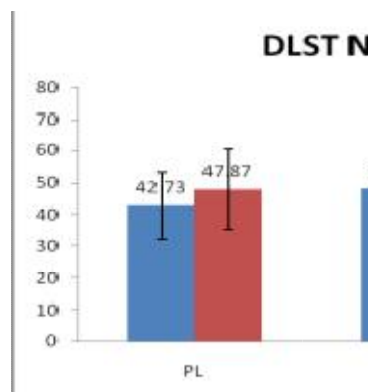
**Figure-1 Total score of Digit Letter Substitution Test**



**Figure-2 Wrong score of Digit Letter Substitution Test**



**Figure-3 Net score of Digit Letter Substitution Test**



## **CHAPTER 7**

### **DISCUSSION**

There was a significant improvement in Net score in both GM and PL sessions. But further analysis showed that GM significantly performed better than PL sessions.

Previous two groups randomized wait-listed control study showed improvements in DLST when GM recited using two different methods i.e Ekaswar and Dwiswara which was aligned with our present study.

The attention processes Involves brain network of brain regions such as the prefrontal and temporal (including the parahippocampal gyrus) cortices, in addition to the anterior cingulate gyrus (Filbey, Russell, Morris, Murray, & McDonald, 2008). During a selective attention task, decreased activation was found in several areas of the dorsolateral prefrontal cortex, anterior cingulate in addition to parietal areas (Weiss, et al., 2007). A feeling of resonating effect during audible 'OM' chanting found significant deactivation was seen bilaterally during 'OM' chanting in comparison to the resting brain state in bilateral orbitofrontal, anterior cingulate, parahippocampal gyri, thalami and hippocampi. The right amygdala too demonstrated significant deactivation. No significant activation was observed during 'OM' chanting. In contrast, neither activation nor deactivation occurred in these brain regions during the comparative task - namely the 'ssss' pronunciation condition (Kalyani, et al., 2011). The Prayer of the Namo Amida Butsu (Nembutsu) activates the medial frontal gyrus, which is mainly related to mental concentration and visuospatial attention, similar to the areas activated by meditation. The task of reciting the Sutra (Buddhist scriptures) activates the left lateral middle frontal gyrus, the right angular gyrus, and the right supramarginal gyrus, which are related to visuospatial attention also involved in the area activated by meditation. (Shimomura, et al., 2008). Hence, the recitation of GM might be

contributed for improving the attention task in DLST.

## **CHAPTER 8**

### **SUMMARY AND CONCLUSION**

#### **8.1 SUMMARY**

The present self as control study found recitation of Gāyatrī mantra had shown improvement in the attention task (DLST) in school children in the age group of 12 to 14 years.

#### **8.2 CONCLUSIONS**

The recitation Gāyatrī mantra had shown significant improvement compared to Poem line chanting.

#### **8.3 LIMITATIONS**

- The study was on immediate effect.
- Religious recitation practice
- No neurophysiologic measurements were used during Gayatri mantra intervention.
- Convenience sampling
- The study did not attempt to assess how long the effect of Gayatri mantra on attention lasted.

#### **8.4 STRENGTHS**

So far as our knowledge goes this was the first study on self as control trial on immediate effect of Gāyatrī mantra on task performance among school children using digit letter substitution test.

Using simple paper pencil test to evaluate the traditional recitation

#### **8.5 APPLICATIONS**

Incorporation of Gāyatrī mantra may be implement within a school setting which can help to raise the academic ability of the students along with their all-round development.

#### **8.6 FUTURE STUDIES**

Future study may include different age group of students for a longer duration (more than one week), different levels of attention, assessment methods to check physiological changes and much more possible effects. In Future study, designs other than self as control can be used and also longer effect of Gāyatrī mantra (more than 10 minutes) can be asse

## **REFERENCES**

1. Anastasi, M. W., & Newberg, A. B. (2008). A preliminary study of the acute effects of religious ritual on anxiety. *J Altern Complement Med*, 14(2), 163-165.
2. Bernardi, L., Sleight, P., Bandinelli, G., Cencetti, S., Fattorini, L., Wdowczyk-Szulc, J., et al. (2001). Effect of rosary prayer and yoga mantras on autonomic cardiovascular rhythms: comparative study. *BMJ*, 323(7327), 1446-1449.
3. Bhatta, K.V. (2004). Shri Gayatri Mantra Rahasy (4th edition) Kaitanje Prakashan. South Canara.

4. Boos Bill (2001). *The Mysterious Of Mantra*, Yoga International, USA.
5. Chandra Shekharananda Saraswathi Swami (1998). *The Vedas* (4<sup>th</sup> edition), Bharatiya Vidhya Bhavan. Mumbai.
6. David Frawley (2000) .*Yoga & Ayurveda* .Motilal Banarsidas Publishers.
7. Dr Nagendra H.R (1998). *Mind Sound Resonance Techniques*. SVYASA Publications
8. Filbey, F. M., Russell, T., Morris, R. G., Murray, R. M., & McDonald, C. (2008). Functional magnetic resonance imaging (fMRI) of attention processes in presumed obligate carriers of schizophrenia: preliminary findings. *Ann Gen Psychiatry*, 7, 18.
9. Harshananda Swami (2010). *Upanayana, sandhya vandana & Gayatri mantra Japa*(3<sup>rd</sup> edition). Ramkrishna Math. Chennai.
10. Hewitt,J.(1983).*The yoga of breathing posture & meditation* .In London Random House.
11. Kalyani, B. G., Venkatasubramanian, G., Arasappa, R., Rao, N. P., Kalmady, S. V., Behere, R. V., et al. (2011). Neurohemodynamic correlates of 'OM' chanting: A pilot functional magnetic resonance imaging study. *Int J Yoga*, 4(1), 3-6.
12. Mukhyananda Swami (2010). *Om Gayatri and Sandhya*, Sri Ramkrishna Math, Mylapore, Chennai .
13. Natu, M. V., & Agarwal, A. K. (1997). Testing of stimulant effects of coffee on the psychomotor performance: an exercise in clinical pharmacology. *Indian Journal of Pharmacology*, 29(1), 11-14. Reprint 1998
14. Prasad, B(1999). *Gayatri Tantra*.Khemraja shrikrishnadas Prakashan,Mumbai. Reprint 1998
15. Sant Keshavdas Sadguru.(1990). *Gayatri the highest meditation*. Motilal Banarasidas Publishers. Delhi.
16. Shimomura, T., Fujiki, M., Akiyoshi, J., Yoshida, T., Tabata, M., Kabasawa, H., et al. (2008). Functional brain mapping during recitation of Buddhist scriptures and repetition of the Namu Amida Butsu: a study in experienced Japanese monks. *Turk Neurosurg*, 18(2), 134-141.
17. Shivanada Saraswathi, Swami. (1940). *Gayatri Sadhana Tattwa*, Divine Life Society.
18. Shripad, G., Nagendra, H. R., & Bhatta, R. (1998). Effect of vedic chanting on memory and sustained attention. *Indian Journal of Traditional Knowledge*, 5(2), 177-180.
19. Shriram sharma acharya. (1998).*Gayatri sadhan ki Vaigyanik prshthabhumi*.(2<sup>nd</sup> edition) Mumbai: Gayatri Pariwar.
20. Taimini I.K (1998). *Gayatri The theosophical* Publishing House. Chennai.
21. Telles, S., Nagarathna, R., & Nagendra, H. R. (1998). Autonomic changes while mentally repeating two syllables--one meaningful and the other neutral. *Indian J Physiol Pharmacol*, 42(1), 57-63.
22. Weiss, E. M., Siedentopf, C., Golaszewski, S., Mottaghy, F. M., Hofer, A., Kremser, C., et al. (2007). Brain activation patterns during a selective attention test--a functional MRI study in healthy volunteers and unmedicated patients during an acute episode of schizophrenia. *Psychiatry Res*, 154(1), 31-40

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## BABY HALDER'S "A LIFE LESS ORDINARY": AN EXTRAORDINARY AUTOBIOGRAPHY

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### ABSTRACT

*Baby Halder, formerly a domestic worker and now a writer, is the author of three memoirs. Her first book, Aalo Aandhare (2002), written in Bengali, is the first account of a domestic help from India. It has been translated into 25 languages. Baby Halder's story is extraordinary precisely because domestic workers' realities are so invisible in middle and upper-class peoples' everyday consciousness. Halder battled enormous odds, a single mother of three, at the age of 25. Her autobiography, written alongside her job as a domestic worker, is a bestseller and has been translated into twenty-one languages. Written without a trace of self-pity, A Life Less Ordinary is a shocking look deep inside a world of poverty and subjugation that few outsiders know about—and an inspiring true story of one remarkable woman's strength, courage, and determination to soar above her circumstances. The present paper reveals the courageous character of Baby Halder, the champion who comes out with triumph.*

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### INTRODUCTION

Article 2 of the universal declaration of Human rights states: "Everyone is entitled to all the rights and freedom set forth in this declaration, without distinction of any kind, such as race, color, sex, language, religion, political or other opinion, national or social origin, birth or other status"

India, as an ancient country has seen many upheavals both natural and man-made. In early Vedic era, equal opportunities of education for women is mentioned. But later on Manu openly played a degenerating role in lowering women's status. In addition to this, frequent invasions from the other parts of the world also kept changing the position of women in Indian society. They were considered as a commodity or a prize of war. They were deprived of the changes in the society. On the emergence of women like Meerabai from Bhakti Movement, general position of women's education was restricted only to listening to Kathas and kirtans.

During the Mughal empire, nothing much has been done in this field except to provide access to education to women of elite class. Whenever the society was in flux, the most affected and suppressed class was the women. The social norms and prejudices became more tenacious against the women. But with the advent of British people, some changes were being brought from the West. Some literate Englishmen and enlightened Indians like Raja Rammohan Roy, Ishwarchand

Vidyasagar, Mahtma Jotiba Fule worked very hard to start educational institutions for girls. Mahatma Jyotiba Fule an ardent lover of humanity started first girls school in the house of Mr. Bhide in 1848 in Pune. This school was meant for girls from the poor as well as rich classes. Girls from untouchable classes were also admitted and education was imparted to them. This rumor of girls school spread all over Pune and some parts of the country too. In the later half of the 19<sup>th</sup> century the efforts of these philanthropists resulted in the realization by the emergent Bengali "Bhadralok" to impart a certain measure to educate their women folk. The heroine of this article Baby Halder is the outcome of such a long lasted strife against the existing social systems.

The story of Baby Halder's life is an extraordinary lesson in courage and survival. It is a story of a young domestic worker who has battled poverty, hardship and violence. A strenuous life story with storms and woos. She only used to sob and go ahead with courage and strength. Nobody, even her father, step mothers, brothers and relatives helped her to come out of the miseries and agony in her life. The sufferings which are found in her story are beyond imaginations and tolerance.

A small girl of hardly eleven years leaves her home with her small brother from Dhanbad to Durgapur to her Jetha ( Brother of her father). Stayed there and joined school. She wants to learn. She joins school. No books and other aids for learning but an utter desire and urge for education

pushed her upto higher class in school. Her father was in army once upon a time, after his retirement came back and joined some other jobs. He could not provide financial support to family. He did not take care of his wife and children. Finally his wife along with his younger son, a child of 3 years leaves his house without telling anyone around her. In this situation Baby's elder sister ( Didi), Baby and one younger brother literary became like orphans.

Baby's story is a story of hardships and acute poverty. Story begins from her childhood. Her father got her elder sister (Didi) married with a person who was a bad man. He used to beat her often. Her Didi could not resist much and finally one fine morning committed suicide. Being a paternal society nobody in the family could oppose him. Baby was left alone with her brother for further suffering. After going through a lot of hardships with two steps mothers who ill treated Baby. No good food and sufficient clothes were served to her. But still baby continued to learn.

One day Baby was in her Mashi's house she found her bed and clothes wet with blood. She started weeping. She didn't understand what was happening to her. She was very much frightened and started weeping. Pishi Mashi convinced her and added one more burden that now she was no more a small girl. But as Baby was very courageous she used to play with boys. She loved to play all the boys games. She used to run very fast, swim very swiftly and so on.

The tragic story of her life has taken a second bad turn when she was eleven and half years. Her father got her married to a man of twenty six years. As her father and other relatives were negotiating her marriage, Baby was unable to understand the situation. She anyhow was not prepared for the marriage. Her marriage was settled with a man named Shankar, a son of a potter.

Shankar who was a mere worker having a small house of mud. He spoke lie while fixing the marriage that he has no father or mother and he is all alone. But he has a family at a small village. As per nature's law Baby became pregnant and conceived a son in the hospital. Despite pains and labor for three to four days her husband did not turn up to see her or did not care for her at all. He used to come from work, used to eat and go to sleep. He was very cruel and selfish. For him a woman was only a means of enjoyment. He never used to give her money for home expenses. On top of it he was very much suspicious about his wife

and never allowed her to speak to neighbors like Shasti and her sisters who were kind enough to her. Actually Baby liked to see cinemas, jatras and participate in the pooja of Kali but Shankar always forbidden her from all these activities. If she failed to obey him, he would beat her like animal. He never pitied her. Once when she was carrying four months child in her womb, Shankar beat her so brutally that she got aborted. She went to her father's house with the determination of not going back to Shankar's house ever but she was helpless. As her stepmother didn't like her staying in the house. So her father insisted her to go back to her house.

Baby comes to her husband's house to live together, but her husband was very much reserved type of a man. They did not have any cordial relations. He never used to give her money. She was totally dependent on him. This dependency and despondency made her a slave of Shankar. She remained pregnant again and gave birth to a son. Still she had to survive in the same hopeless conditions. There was no improvement in the relations of husband and wife.

Baby, as a woman, a wife and as a mother had tried to resist and revolt against the situation many times. Her struggle for searching her identity, for her freedom and liberty was going on relentlessly. But Shankar had no sympathy for her. When she quarreled for justice, he used to beat her cruelly. She became desperate and left all hopes of cordial relations with her husband. She conceived one more daughter in such a tense relations. Living with such an inhuman and callous man was getting critical day by day. One day Shankar fought with her very badly and beat her horribly before her children. Children were terribly frightened to see this. Baby decided to stop the farce.

On the next morning, with an air of finality, Baby went to her father's house along with her children and declared that she will never go back to her husband's house. Her father didn't like this. He tried to explain to her that her husband's house is the only destination for her. She demanded few money to her father and address of her brother and got the railway tickets. With all sorts trouble she reached Faridabad to her brother's house. Baby's sister-in-law didn't like this addition to her family. She along with her three children had her dinner and next morning went in search of another room which was near her brother's house. She requested him to search for some work for her so that she can pull on her expenses. Moreover she wanted her children to learn. It had been her dream that

the children should go to a school. After two days she found a work. She requested a small place to live with her children. Memsab was very unsympathetic with her all the times. She used to keep her busy for the whole day. Baby hardly got any time to spare with her children. Memsab used to love her dog' more than maid servant. Baby felt very bad and left her job.

Baby Halder started working in the house of Dr. Prabodhkumar Shrivastav. He used to give her Rs. 500 per month. He was very kind hearted man. He used to give her fatherly and brotherly treatment in the house. He never treated her like a servant. He asked her to bring her children there in his house only. He gave one room for them. As her school going children were small he used to ask Baby to take milk for her children. He was living there with his sons. One day she went up-stairs which happened to be a study room of Dr. Prabodhkumar. She started cleaning the bookshelves and books very carefully and neatly. Her busy hands would go slow as she dusted the books. During this she picked up one book and started reading it. She didn't know Dr. Prabodhkumar was also present in the study room at that time. He was very much surprised to see her reading a book. He asked, "Do you read?" and she kept quiet for a while. She looked so guilty as if he had caught her hand in the biscuit tin. Thereafter Dr. Prabodhkumar encouraged her to read and write at her leisure time. One day he asked her to show what she wrote. She handed over the papers to him. He read all those papers and sent to his friend to go through. His friend liked the story very much and asked Dr. Prabodhkumar to publish it. Dr. Prabodhkumar belonged to a literary family. His grandfather Munshi Premchand was one of India's best known writers whose novels and short stories brought out a social reform in the early 20<sup>th</sup> century.

Here Dr. Prabodhkumar, her dada, worked as a source of inspiration in Baby Halder's life. He encouraged her to read and write. As a servant Baby entered his house, he treated her sympathetically like his daughter and behaved like a good human being, a true Samaritan. As the days passed the result came out in the form of a

book, "A life less Ordinary " ( Published in Hindi and Bengali as 'Aalo Andhari', from which means 'darkness to light')

During an interview 'If You will.....U Can.....Baby Halder proved it' which was telecasted on Delhi Doordarshan in a programme called 'Stree Shakti', Baby Halder shared one incident in which she said when she used to clean the bookshelf at her dada's house she came across a book written by Mahashweta Devi which depicted a pathetic story of a suppressed woman who undergoes the ordeal of life, wins in life by creating her own identity. Baby was overwhelmed to read this experience. She was also highly inspired by these words of encouragement. Coincidentally Mahashweta Devi, the great Champion of Women's Freedom Movement in India read Baby Halder's Autobiography and wrote her comment," A story of courage and grace.....a book worth waiting for."

Our Former Prime Minister, Pandit Jawaharlal Nehru said that until and unless our male and female are suppressed under the dominance of some power they cannot find themselves independent and free by any law or rule. Economic dependence is the main reason of backwardness of Indian women. They are never free as long as they are not economically self-reliant.

### CONCLUSION

Baby Halder's book is miraculous and an inspiration to all of us. It gives the message to the reader's that Education brings rays of happiness and prosperity in one's life. She is a woman with perseverance, self respect and resilience. She showed the courage to fight against all odds in life and worked as a torch bearer, bringing light of hopes and spirit not only for herself but also for all the women folk in India who are fighting the battles of life, searching for their own identity in the darkness. She underwent the ordeal of life only to prove herself. Of course in this rigorous journey of adversity Mr. Prabodhkumar, her dada, played the role of a lighthouse which stands firm to show light and gives right direction to the ship that loses path during the voyage.

### REFERENCE

1. Baby Haldar, 'A Life Less Ordinary', Translated by Urvashi Butaia, Zubaan and Penguin Publications, New Delhi India,2006.
2. Interview of Baby Halder on 25 July 2015 aired on DD National in the Episode of 'Streeshakati'
3. <http://indianculturalforum.in/2017/03/07/baby-halder-womens-writing-india-zubaan>

4. The new maid Professor Prabodh Kumar found through the milkman behaved oddly. All day the 29-year-old Bengali girl, a mother of three, worked hard and silently, sweeping, mopping, cooking; but her busy hands would still as she dusted the books, the dust cloth moving with unnecessary slowness through the pages of his Bengali tomes. Prabodh, a retired professor of anthropology and a grandson of Munshi Premchand, finally confronted her. "Do you read?" She looked as guilty as if he'd caught her hand in the biscuit tin.
5. Baby Halder, it turned out, had been to school intermittently until she was married off at 12 to a man 14 years her senior. And when the kind professor offered her the use of his bookshelves, she hesitantly chose Taslima Nasreen's *Amar Meyebela* (*My Girlhood*). "It was as if," recalls Baby, "I was reading about my own life." Other books left Prabodh's shelf in rapid succession: novels by Ashapura Devi, Mahashweta Devi, Buddhadeb Guha. That was when Prabodh one day took out a pen and copybook from his desk and gave to Baby. "Write," he told her, an order that made Baby almost weep with frustration. What was there to write? Hers, she says, was a mindless life, moving where her father, an ex-serviceman and driver, took them, from Kashmir to Murshidabad to Durgapur, a motherless child unquestioningly enduring an abusive father and step-mother and a husband, until one day out of desperation she boarded a train for unknown Delhi with her three children. In the capital city, she soon did what thousands of women fleeing poverty and despair and drunken husbands are doing: took ill-paid work as a domestic, sometimes spending the near-freezing winter nights with her children on the streets.
6. Here then for the first time in her bleak life was an unlooked-for mentor urging her to write about her life. So she picked up the pen, with the same curious blend of grim determination and blind faith, covering the first few pages as painstakingly as if it was yet one more chore in her busy day. "It was nearly 20 years since I had ever written in a copybook, I had forgotten spellings. It was very embarrassing, especially when my children wanted to know why I was writing in a copybook instead of them." But her first words worked their own magic: they unlocked her past. All her searing, suppressed memories of the mother who abandoned them, the night when the man she married climbed into her bed and raped her, the terror and pain of delivering her first child at 13, memories she had never confided to anyone, didn't even realise she had, flowed out into the notebook. There was no stopping Baby now. She wrote in the kitchen, propping her notebook between the vegetables and dishes, she wrote in between sweeping and swabbing, after the dishes and before, and late at night after putting her children to bed. Her mentor was bemused: "I need so much preparation before I can get down to writing anything, my chair, my study, my writing materials, and here was this girl writing as easily as if she was chopping vegetables."
7. *Diary of Anne Frank*. Prabodh was persuaded to translate it into Hindi. *Aalo Aandhari* (*Light and Darkness*) was ready. But finding a publisher for such an unusual narrative was tougher; the book was too strange for their tastes. But Sanjay Bharti, who owns a small publishing house, Roshani Publishers, agreed to risk it even if it lost him money.
8. *Aalo Aandhari* began selling from the first day of its launch. "Everyone from the sweeper to the retired headmistress next door wanted to buy a copy." It sold so well that the second edition will be out in less than two months.
9. But for Baby, the best thing about her rebirth as an author is the regard of her new friends. "For the first time in my life, I feel confident that my story is worth telling, and in my own words.
10. Baby Halder's story is extraordinary precisely because domestic workers' realities are so invisible in middle and upper-class peoples' everyday consciousness. Halder battled enormous odds, a single mother of three, at the age of 25. Her autobiography, written alongside her job as a domestic worker, is a bestseller and has been translated into twenty-one languages.
11. *A Life Less Ordinary: A Mem*
12. When she was very young, Baby Halder was abandoned by her mother and left with a cruel, abusive father. She was married off at twelve to a man twice her age who beat her. At fourteen, she was a mother herself. Her early



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life was marked by overwhelming challenges and heartbreak until, exhausted and desperate, she fled with her three children to Delhi, to work as a maid in some of the city's wealthiest homes. Expected to serve her employers' every demand, she faced a staggering workload that often left her no time to care for her own children. But she never complained,

for such is the lot of the poor in modern-day India. Written without a trace of self-pity, *A Life Less Ordinary* is a shocking look deep inside a world of poverty and subjugation that few outsiders know about—and an inspiring true story of one remarkable woman's strength, courage, and determination to soar above her circumstances



## **KEY FEATURES OF A GEOGRAPHICAL SCIENCES MAJOR**

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### **INTRODUCTION**

Geographical Sciences is a discipline whose content is broad since all aspects of the Earth's systems (human and physical) are within its scope. Geographical Sciences is the study of people, places, and environments and seeks to integrate the human and the physical components of a system or place using a spatial approach. At the University of Maryland there are three concentrations and four tracks with this diverse major. Learn to understand space and location, interpreting how people live in particular places, the relationships between places, the complexities of environments, and the human use of environment.

The Department of Geographical Sciences at the University of Maryland is internationally known for developing and applying the newest geographic technology such as Geographic Information Systems (GIS) and remote sensing. This program also hasties to organizations such as NASA, NOAA, the Chesapeake Bay Program, and the Maryland-National Capital Parks and Planning Commission.

### **CAREER OPTIONS WITH A GEOGRAPHICAL SCIENCES MAJOR**

Geographers will work advising government, real estate developers, utilities, and telecommunications firms on where to build new roads, buildings, power plants, and cable lines. Geographers also advise on environmental matters such as where to build landfills or to preserve wetland habitats. Geographers with a background in GIS (Geographic Information Systems) will find numerous job opportunities applying GIS technology in non-traditional areas, such as emergency assistance, where GIS can track locations of ambulances, police, and fire rescue units and their proximity to the emergency. Median Annual Earnings for Geographers in 2015 was \$74,260 per year.

<http://www.bls.gov/ooh/life-physical-and-social-science/mobile/geographers.htm>.

An influential definition is that by GIScientist David Mark, which states:

Geographic Information Science (GIScience) is the basic research field that seeks to redefine geographic concepts and their use in the context of

geographic information systems. GIScience also examines the impacts of GIS on individuals and society, and the influences of society on GIS. GIScience re-examines some of the most fundamental themes in traditional spatially oriented fields such as geography, cartography, and geodesy, while incorporating more recent developments in cognitive and information science. It also overlaps with and draws from more specialized research fields such as computer science, statistics, mathematics, and psychology, and contributes to progress in those fields. It supports research in political science and anthropology, and draws on those fields in studies of geographic information and society.

### **WHY STUDY GEOGRAPHICAL SCIENCES?**

Geographical Science investigates the spatial patterns of physical and human phenomena at local, national and global scales. It examines the patterns and processes of natural and built environments and human activity, how they change over time and how they interact. Physical Geography is concerned with the patterns and processes in climate, landforms, soils, plants, animals as well as the impact of human activities on these systems. Human Geography examines how people interact with the environment and about applying physical geography elements to human ends. Human geography involves applied studies in urban and rural settlement, location and land-use, human spatial behaviour and demography. Geographical Information Science is the study of geographic information systems and remote-sensing for modelling, managing, analysing and applying geo-referenced information in a variety of contexts.

This innovative program focuses on the computational dimension of geographic information science and technology. As a GIS student, you will learn

- concepts in spatial thinking and geographic problem solving
- mathematical and statistical spatial modeling
- computational principles in GIS
- commercial and open source GIS and related software
- programming in multiple languages (e.g., Java, C++, and Python)

- to use your knowledge base in geography and computer science skills to address urban, environmental and social issues
- These essential programming skills combined with GIS knowledge will form the basis for designing and implementing GIS software.

### REFERENCES

1. Duckham, Matt; Goodchild, Michael F.; Worboys, Michael (2004-11-23). Foundations of Geographic Information Science. CRC Press. p. 4. ISBN 9780203009543
2. <https://geoplan.asu.edu/bsgis>
3. <http://www.bls.gov/ooh/life-physical-and-social-science/mobile/geographers.htm>.
4. [www.ltsc.umd.edu/majorguides/GEOGRAPHICALSCIENCES.pdf](http://www.ltsc.umd.edu/majorguides/GEOGRAPHICALSCIENCES.pdf)



## EXTENT OF INVOLVEMENT OF RURAL WOMEN REGARDING SANITATION PRACTICES

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### ABSTRACT

Women and girls are the most affected by lack of access to sanitation facilities and safe water, as they have greater need for privacy during defecation and bathing compared to men. Absence of sanitation makes females vulnerable and exposes them to the risk of faecal-orally transmitted diseases. Provision of adequate water, sanitation and hygiene facilities is thought to mitigate these adverse impacts, making their lives safer, easier and healthier. However, as of 2016, an estimated 1.25 billion women and girls were without access to adequate sanitation. The objectives of the present study were -To study the source of awareness about sanitation, To assess the sources facilities & storage system of drinking water, To examine the purification of drinking water system, To identify the development of women regarding sanitation practices. Some of the women's have taking the care of sanitation of their houses, surroundings and arranged the small program for the sanitation of the villages, Majority of the women respondents had knowledge about boiled water system and cleaning hands after use of toilets and they were aware 1st rank in order, Maximum the respondents opined that they have their individual toilets and used them also, majority of respondent have knowledge of the need using by chlorination for drinking, majority respondents used drums to storage water, Maximum the respondents had water facility before the programe was implemented in the area. The respondents share that knowledge of cleanliness and sanitation among their children and neighbours.

**Keywords:** Rural women,, Sanitation practices, Awareness

### INTRODUCTION

The Central Rural Sanitation Programme of India's first efforts to provide safe sanitation in rural areas. This programme focussed mainly on providing subsidies to people to construct sanitation facilities. However, a study done by the government in 1996-97 showed that it was more important to raise awareness about sanitation as a whole rather than to just provide subsidies for construction. This understanding marked the first shift in the programme. In 1999, a restructured Total Sanitation Campaign (TSC) was initiated to create supply-led sanitation by promoting local sanitary marts and a range of technological options. While women and girls face special risks from lack of access to sanitation facilities, their ability to participate and influence household-level sanitation is not well understood.

This issue are studies so that not having asses to proper safe and private sanitation substantially increase absentee among girl learners and contribute to their dropping out of school altogether.

Objectives of the study : To know the source of awareness about sanitation, To assess the source facilities & strong system of drinking water, To

examine the purification of drinking water system, To identify the development of women regarding sanitation awareness.

### RESEARCH METHODOLOGY

The study was carried out in Chandur Rly. Panchayat Samitee of Amravati District of Maharashtra State namely Manjarkhed village. For selection of sample list of the respondents 100 samples were selected using the Lahiris method of simple random sampling the survey method was used to collect data by the interview method.

### RESULT & DISCUSSION

The Result and Discussion was presented is the following chapter.

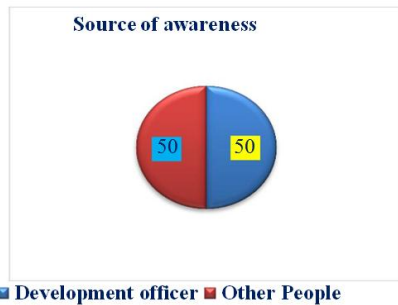
**Fig No. 1: Distribution of age of the respondents**



The above table reveals that out of the total 100

Respondents maximum number of respondents i.e. 40% was from the age group 31-35 year and 5% respondents were from the age group of 35-40 years. All the other respondents were between the age of 20-25 years 25% and 26-30 year 30% respectively.

**Fig No. 2: Source of awareness about sanitation of Respondents**



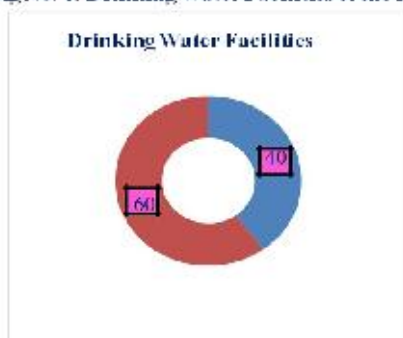
The data presented in fig indicate that 100 respondents which constituted 50% were awareness of sanitation through the development officer and out of 100 respondent which constituted 50% were others peoples. The respondents share that knowledge of cleanliness and sanitation among their children and neighbours.

**Table 3: Source of drinking water**

SN	Source of drinking water	No of Respondents	%
1	By community pipe	65	65
2	Borewell	15	15
3	Well	20	20

From the above table 65% respondents collected drinking water from pipes . The remaining 20% & 15% respondents were fulfilled their drinking water as per the requirement through the bore well (hand pump) and wells respectively. They have drum which are closed to store, these storage drums are being cleaned daily

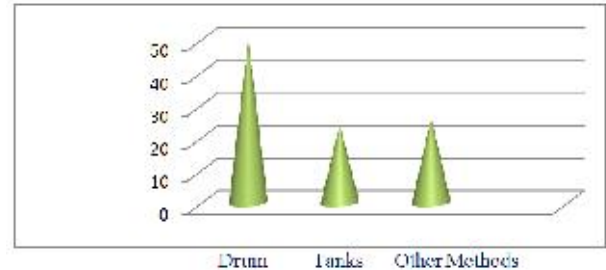
**Fig.No. 4. Drinking Water Facilities of the Respondents:**



The data presented in the fig no. 4 indicates that 40 respondents which constitute only 40% respondents had their own drinking water facility

personal and 60 respondents which constitute 60% respondents collected water from community pipes. Maximum the respondents had water facility before the programe was implemented in the area.

**Fig No.5:Water Storage System**



The data presented in fig no 5 indicated that 50% respondents used drums to storage water, 24% and 26% respondents respectively used tanks and other methods like buckets and pots to store water for daily used.

**Table 6::Purification of Drinking Water**

SN	Purification Method	No of Respondants	Percentages (%)
1	Using boiled water	30	30
2	Chlorination for drinking	60	60
3	Purify by alum	10	10

Above table shows that 30% of respondents have knowledge of the need for using boiled water for drinking 60% of respondent have knowledge of the need using by chlorination for drinking and 10% of respondents have knowledge about purification by alum. The knowledge was imported through the TSC (Total Sanitation Campaing.)

**Fig No. 7: Available of Toilets Facilities**



The Data presented in the fig 7 indicates that 75 respondents which constitution did not have only such facility.Maximum the respondents opined

that they have their individual toilets and used them also.

**Fig No 8:Development of women regarding sanitation awareness**

Sr. No	Awareness	No.of Respondents	Rank Order
1	Boiled Water	100	I
2	Closed drainage system	41	V
3	Clean Environment	75	III
4	Use of toilet	88	II
5	Cleaning hand after use of toilets	100	I
6	Personal hygiene	53	Iv

It is observe from the data presented in the fig no 8 that majority of the women respondents had knowledge about bailed water system and cleaning hands after use of toilets and they were aware 1st rank in order 88respondents had aware about the use of toilets which is donated by 2nd rank. The 75 rural women have knowledge about clean environment which has been accorded 3rd rank. The women's were keen aware regarding her personal hygiene. 53 respondents which by 4th rank. The 5th rank shows that 41respondents had information about closed drainage system.

### SUGGESTIONS

- Increased awareness can be disseminated through mass media through various teaching

methods.

- Personal for implementing activities must be prepared it constantly assist the rural people in implementation of development work.
- The Government and panchyat should conduct periodic inspection to review the village.
- To give the information to the rural women about the sanitation positively, more and more.
- To give and provide the objects and thing to the rural women to developed and to clean their house for the sanitation of their surroundings

### CONCLUSION

Perusal of above data can be concluded that the sanitation practices are successfully utilised for household level. Awareness regarding this will help in improve sanitation practices. Therefore there is urgent need to aware and motivate more number of people pertaining to use all sources for cleanliness .Only few families or persons had aware about systematic techniques of sanitation. Though governments and implementers emphasize women's involvement in sanitation programmes, socio-cultural factors and community and household level dynamics often prevent women from participating in sanitation-related decisions. Measures are needed for strengthening sanitation policies and effective implementation of programmes to address gender power relations and familial relationships that influence latrine adoption and use.

### REFERENCES

1. Jahmtani Anita, Singh Premlata, "Indian Women and media", Interaction: Vol. 6, (1-2), 1998, Page no. 114- 119.
2. Kaushik Sushma and Mehta Sudarshan, "Extent of Exposure and Attitude of Women towards Mass Media", Interaction: Vol. 8, No. 2, 1990, Page No. 87-91.
3. Meenambigai J., Ravichandran V., "Impact of Media on Life Style of Farm Women", Journal of Communication Studies: Vol. 24-1, April, 2006.
4. Sharma K. -2009 :- "Impact of health education for improving sanitation" unpublished dissertation submitted of the Nagpur University, Nagpur inpartial fulfillment of the requirements of the requirements
5. Ventha K. P. – 2000 :-"Awareness level of farm women about development programmes?" A journal of rural India, Babai House, GopalGariorai (UP) India. Vol.68, No. 12, p. 231236.

## अमरावती खिलाड़ी महिला कर्मचारियों की जीवनशैली का हिमोग्लोबिन घटक के साथ सहसम्बंध

शा. बा. भोसले व त.एस. राउत

शारीरिक शिक्षण विभाग संत गाडगेबाबा अमरावती विद्यापीठ अमरावती.

शारीरिक शिक्षण विभाग संत गाडगेबाबा अमरावती विद्यापीठ अमरावती.

### सारंष

इस अध्ययन का उद्देश्य खिलाड़ी महिला कर्मचारियों की जीवनशैली का हिमोग्लोबिन घटक के साथ सहसम्बंध ज्ञात करना है। वर्तमान शोधकार्य के लिए अमरावती विभाग में से ४० खिलाड़ी महिला कर्मचारियों का न्यायदर्श पद्धति द्वारा चयन किया गया था। जीवनशैली मापन करने के लिए अनुसंधानकर्तोंने एस के बाबा और सुमनप्रीत कौर द्वारा निर्माण प्रमाणित जीवनशैली मापन का उपयोग किया गया। हिमोग्लोबिन को मापने के शार्डली हिमोमीटर का उपयोग किया गया। संख्यिकीय विश्लेषण करने के लिए प्रोडक्ट मोमेंट कोरिलेशन "r" का प्रयोग किया गया। एवं महत्वकांक्षा का स्तर ०.०५ रखा गया। अमरावती खिलाड़ी महिला कर्मचारियों के हेल्थ कॉन्सिलस लाईफ स्टाईल का हिमोग्लोबिन के साथ सहसम्बंध 0.17, अकेडमीक ओरियन्टेड लाईफ स्टाईल का 0.18, करिअर ओरियन्टेड लाईफ स्टाईल का 0.06, सोशल ओरियन्टेड लाईफ स्टाईल का 0.06, ट्रेन्ड सिकींग लाईफ स्टाईल का 0.20, फॅमिली ओरियन्टेड लाईफ का 0.29, लाईफ स्टाईल का 0.21. अतः निष्कर्ष में हम यह कह सकते हैं की जीवनशैली, हिमोग्लोबिन के साथ नकारात्मक एवं महत्वपूर्ण सहसम्बंध नहि पाया गया।

### प्रस्तावना

आज के युग के भारत में महिलाओं को सम्पत्ती धरोहर के तौर पर माना जाता है। हर क्षेत्र में महिलाओं का योगदान उल्लेखनीय है। तथा देश को उनपर अभिमान है। वे देश आगे बढ़ाने के लिए अग्रसर है। उन्होंने बहुत सारी क्षेत्र में प्रगति की है। उनकी कामयाबी आसमान छुने वाली है। और दुसरों के लिए वह प्रेरणास्रोत है। भारत एक बहुआयामी देश है, जहाँ विभिन्न धार्मिक, विभिन्न जाती, सामाजिक व आर्थिक समुह पाये गये हैं। फिर भी व्यापक परिस्थिति में महिलायें व्यवस्था पर प्रभाव डालती हैं। उनके जीवन में एक आम बात यह पायी गयी है, की वे प्रेरित, गतिपिलता, एकांतवास और घर तक की सीमित रहती हैं। फिर भी भारत में पुरुष प्रधान संस्कृति दिखायी देती है। पुरे इतिहास के दौरान महिलाओं की भूमिका सामान्यतः घर बनानेवाली एक माँ एवं एक पत्नी के रूप में देखी गई है। हाल के दशकों में विश्व के कुछ भागों में महिलाओं की स्थिति में बदलाव के बावजूद भी उन्हें घर पर कामकाजी महिलाओं के तौर पर रखा जाता है। और महिलाओं के घरेलु कार्य उनकी गतिविधियाँ गन गयी हैं। आम तौर पर उन्हें सार्वजनिक व राजनैतिक जीवन से दुर रखा जाता है।

हर व्यक्ती की अलग – अलग जीवनशैली होती है। हर व्यक्ती प्रसिद्ध व्यक्ती का अनुकरण करके जीना चाहता है। हर एक का कोई ना कोई आदर्श रहता है। उदाहरण किसी को खिलाड़ी, किसी को कलाकार, किसी को गायक पसंद होता है। व्यक्तीगत लोग प्रिय लोग हमारी जीवनशैली को प्रभावित करते हैं। जैसे कि, उनके कपडे पहनने के तरीके, उनके कामकाज, उनके शौक और उनका व्यवहार, हर एक

व्यक्ती का पंसदीता व्यक्तीत्व होना चाहिए। उन्हे वे अलग—अलग कल्पना, व्यक्तीगत विचार व जीवनशैली की सोच बनाने में मदद करते हैं।

जीवनशैली एक ऐसी जीने की शैली है जो केवल एक व्यक्ती को प्रभावित करती है। पोषणहीन खाना, मानसिक स्वास्थ्य को बहुत प्रभावित करता है। उदा. रक्त परकरो के उतार—चढ़ाव निर्जलीकरण उत्तेजक जैसे की कॉफेन, शराब यह सब मानसिक स्वास्थ्य से जुडे है।

व्यायाम करना यह आज की जीवनशैली के लिए अविष्वसीनय मददगार साबीत हुआ है। पारीरिक स्वास्थ्य के लिए देशभर में कई चिकिस्या केंद्र व व्यायाम शालायें स्थापित हैं।

बेषक हम सभी बीमारियों की अच्छी जीवनशैली से सुधार नहीं सकते, पर हम यह जरूर कह सकते हैं कि, स्वास्थ्य जीवनशैली से समग्र जीवन की गुणवत्ता में सुधार कर सकते हैं। व्यक्ती के जीवन को प्रभावित करने वाले कई कारक हैं। कुछ कारक सकारात्मक और कुछ नकारात्मक हैं। यह प्रशिक्षण प्रतिबध्दताओं को बनाए रखने और प्रदर्शन में सुधार करने के लिए सभी कारकों को समझना और हर व्यक्ती को मदद करना महत्वपूर्ण है।

पारीरिक गतिविधियाँ, तनाव, शराब, धुम्रपान, नषिली दवाएँ, निंद, काम की माँग, चिकिस्या का इतिहास सक्रीयता का स्तर, आहार, वनज, लिंग, संस्कृती, भागीदारी व प्रशिक्षण प्रतियोगिता इस सभी पर जीवनशैली के कारक प्रभाव डालते हैं।

### कार्यपद्धती

वर्तमान अध्ययन का मुख्य उद्देश्य खिलाड़ी महिला कर्मचारियों की जीवनशैली का हिमोग्लोबिन घटक के साथ सहसम्बन्ध ज्ञात करना है। वर्तमान पोषणकार्य के लिए अमरावती विभाग में से ४० खिलाड़ी महिला कर्मचारियों का चयन किया गया था।

वर्तमान अध्ययन में खिलाड़ी महिला कर्मचारियों का चुनाव न्यायदर्श रूप में उद्देश्य पूर्ण न्यायदर्श पद्धति द्वारा किया गया।

### परिक्षण साहित्य जीवनशैली

जीवनशैली मापन करने के लिए अनुसंधानकर्तृने एस. के. बावा और सुमनप्रीत कौर द्वारा निर्माण प्रमाणित जीवनशैली मापन का उपयोग खिलाड़ी महिला कर्मचारियों की जीवनशैली मापने के लिए इस प्रणाली का उपयोग किया गया।

इस प्रमाणित प्रणाली में ६ भाग है। जिसमें पहिले भाग में हेल्थ कॉन्सीयन्स लाईफ स्टाईल दुसरे भाग में अकॅडमीक ओरियन्टेड लाईफ स्टाईल, तिसरे भाग में करिअर ओरिन्टेड लाईफ स्टाईल चौथे भाग में सोसियली ओरिन्टेड लाईफ स्टाईल पांचवे भाग में ट्रेन्ड सिकींग स्टाईल तथा छठवे भाग में फॅमिली ओरिन्टेड लाईफ स्टाईल है। इस प्रणाली की विष्णयता ०.९६ इतनी है। जीवनशैली के प्रणाली में ६० प्रश्न दिये गये हैं। तथा उसमें से ४३ प्रश्न सकारात्मक और १७ प्रश्न नकारात्मक हैं।

सकारात्मक प्रश्न को ४-३-२-१-० तक स्कोअरिंग दि गई। तथा नकारात्मक प्रश्नों का ०-१-२-३-४ तक स्कोअरिंग दि गई।

### हिमोग्लोबिन

**उद्देश्य** – रक्त में हिमोग्लोबिन की मात्रा का पता लगाना।

**उपकरण**— स्पिरिट, ब्लड, लेन्सेट, प्रिपेट, टयुब, स्टीरर, डॉपर, डिस्टील वॉटर, हिमोमिटर, ब्रश, आदि।

सबसे पहले पोषणकर्तृ विषय की रिंग फिगर के टिप को स्पिरिट से साफ की तथा ब्लड लेन्सेट के द्वारा प्रिक किया गया और प्रीपेट के माध्यम से २० के निषाण तक रक्त को लिया गया। सोल्युषन युक्त टयुब में रक्त को डाला गया एवं स्टेरल के माध्यम से मिलाया गया ताकी रक्त की थक्के न जमे फिर उस टयुब को १० मिनट तक लिए छोड दिया गया पोषणकर्तृ ने डॉपर के माध्यम से टयुब में डिस्टील वॉटर पर्याप्त मात्रा में डालकर इसका रंग षाहिली हिमोमिटर पर लगी दोनो पट्टीयों के रंग के समान आने तक उसे देखा गया। इस तरह हिमोग्लोबीन को मापा गया।

**गणना** – षाहिली हिमोग्लोबिन हिमोमिटर पर उपयुक्त बिन्दु को मापा।

### संख्यिकी विष्लेषण एवं स्पष्टिकरण

संख्यिकीय विष्लेषण करने के लिए प्रोडक्ट मोमेंट कोरिलेशन "r" का प्रयोग किया गया। एवं महत्वकांक्षा का स्तर ०.०५ रखा गया।

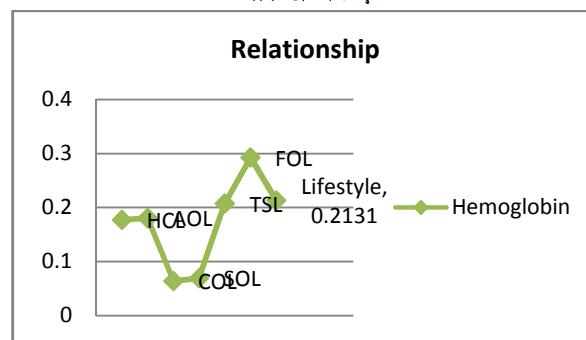
**सारणी क्र. १**

	Lifestyle	Calculated 'r'	Tabulated 'r'
<b>Hemoglobin in</b>	Health Conscious Lifestyle	0.1772	0.308
	Academic Oriented Lifestyle	0.1803	
	Career Oriented Lifestyle	0.064	
	Socially Oriented Lifestyle	0.0692	
	Trend Seeking Lifestyle	0.2074	
	Family Oriented Lifestyle	0.2924	
	Lifestyle	0.2131	

\*0.05 level of Significance (38df) tabulated 'r' = 0.308

अमरावती खिलाड़ी महिला कर्मचारियों के हेल्थ कॉन्सिलस लाईफ स्टाईल का हिमोग्लोबिन के साथ सहसंबन्ध 0.1772, अकॅडमीक ओरियन्टेड लाईफ स्टाईल का 0.1803, करिअर ओरिन्टेड लाईफ स्टाईल का 0.064, सोषल ओरिन्टेड लाईफ स्टाईल का 0.0692, ट्रेन्ड सिकींग लाईफ स्टाईल का 0.2074, फॅमिली ओरियन्टेड लाईफ का 0.2924, अतः लाईफ स्टाईल का हिमोग्लोबिन के साथ सहसंबन्ध 0.2131 पाया गया। हिमोग्लोबिन का जीवनशैली एवं जीवनशैली की सभी भागों के साथ महत्वपूर्ण अंतर जाँच ने पर यह दिखाई देता है की. इन सभी घटकों के साथ महत्वपूर्ण सहसंबन्ध नहीं पाया गया।

**आलेख क्र. १**



### निष्कर्ष

अतःह निष्कर्ष में हम यह कह सकते हैं की, जीवनशैली एवं जीवनशैली के सभी भागों का हिमोग्लोबीन के साथ सकारात्मक सहसंबन्ध पाया गया। हिमोग्लोबिन का जीवनशैली एवं जीवनशैली के सभी भागों के साथ महत्वपूर्ण अंतर जाँचने पर यह दिखाई देता है की, इन सभी घटकों के साथ



महत्वपूर्ण सहसंबंध नहीं पाया गया। महत्वपूर्ण अंतर नहीं पाये जाने के कारण हम यह कह सकते हैं, की अमरावती षहर दिन पर दिन अग्रेसर एवं विकास की ओर बढ़ा जा रहा है। सभी महिलाएँ प्रगति की ओर एवं कामयाब बनने की चाह रखती हैं। उनकी इच्छा है, की वे सभी क्षेत्र में आगे बढ़ें और साथ ही साथ एक आदर्श नारी की तरह अपने

परिवार को भी आगे ले जाने की सोच रखती हैं। आज सभी को लेकर चलनेवाली महिला दोहरी भूमिका निभाने हुवे अपने स्वास्थ्य पर ध्यान नहीं दे पाती हैं। इसके कारण अग्रेसर यह पाया गया है की, महिला अपने आप पर ध्यान न देने के कारण हिमोग्लोबीन की मात्रा कम पाई जाती है।

### संदर्भ

1. अजमेरसिंग एवं अन्य,पारीरिक शिक्षा तथा ओलंपिक अभियान,नईदिल्ली:कल्याणी प्रकाशन, २०११.
2. कविता शर्मा, स्त्री विकास की ऐतिहासिक रूपरेखा, नई दिल्ली: रजत प्रकाशन,२०१२.
3. एन. पी. शर्मा, खेल और समाजशास्त्र, नई दिल्ली: खेल साहित्यकेन्द्र प्रकाशन, २००५.
4. S.K.Bawa & S. Kaur, Manual for Life Style Scale, National Psychological Corporation, 2010.
5. L.N.Jewell,Psychology &Effective Behavior, West Publishing Company,ISS No.31-270,33-7.



## मानवी शरीरावर आक्सिडनविरोधी द्रव्ये उपकारक तर मुक्तमुलके हानीकारक — एक अभ्यास

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मानवी शरीर (जीवन) स्वस्थ, निरोगी राहण्यासाठी आहाराला अनन्य साधारण महत्व आहे. आरोग्य टिकवण्यासाठी रोगाला प्रतिबंध करण्यासाठी आणि कोणत्याही रोगावर उपचार करण्यासाठी औषधापेक्षाही आहार हा जास्त महत्वपूर्ण असतो. किंबहुना औषधाच्या जोडीला योग्य आहार हा वैद्यकीय उपचाराचा देखील महत्वपूर्ण भाग आहे.

‘तुमचा आहारच तुमचे औषध असते असे हिप्पोक्रेटीसने म्हटले आहे.’

अयोग्य आहारामुळे शरीरात विषारी आणि निरुपयोगी पदार्थ जमा होत जातात आणि त्यातूनच कोणताही रोग उद्भवू शकतो.

मुक्त मुलके आणि ऑक्सिडनविरोधी द्रव्ये मानवी पोषणावर परिणाम करणारी वेगळ्या प्रकारचे द्रव्य/घटक आहेत. यातील मुक्तमुलके हे द्रव्य मानवी शरीरात चयापचयाच्या क्रियेत तयार होणारे आहे. तर ऑक्सिडनविरोधी द्रव्ये ही अन्नपदार्थात असतात. मुक्तमुलके मानवी शरीरावर हानीकारक आहेत तर ऑक्सिडनविरोधी द्रव्ये मानवी शरीरास आवश्यक उपयुक्त द्रव्ये आहेत.

प्रस्तुत शोध निबंधात वरिल दोन्ही घटकांचा मानवी आरोग्यावर कसा परिणाम होतो. व मानवी शरीराची न्हासाची कारणे शोधून ऑक्सिडन विरोधी अन्नाचा पुरवठा कसा वाढवावा ह्याचा शोध घेण्यात आलेला आहे.

### अभ्यासाची उद्दिष्टे

- १) मुक्तमुलके (Free radicals) तयार होणाऱ्या कारणाचा शोध घेणे
- २) दैनंदिन आहाराच्या माध्यमातून मुक्तमुलके तयार होणार नाही अशा तथ्यांचा शोध घेणे.
- ३) ऑक्सिडनविरोधी द्रव्ये कोणकोणत्या खाद्यपदार्थात आहे त्याचा शोध घेणे.
- ४) मुक्तमुलकाच्या न्हासात्मक क्रियांचा वेग कमी करून ऑक्सिडनविरोधी द्रव्यांचा वापर वाढविण्यासाठी आहार सुचविणे.

### मुक्तमुलके (FREE RADICALS)

पेशीमधील निरनिराळ्या चयापचय प्रक्रियेत मुक्तमुलके ही द्रव्ये निर्माण होतात त्याचप्रमाणे शरीरास एखाद्या रोगाचा संसर्ग झाल्यास शरीरात मुक्तमुलके तयार होण्याचे प्रमाण वाढते. याशिवाय बाहेरूनही मानवी शरीरातील पेशीमध्ये मुक्तमुलकांचा प्रवेश होतो. उदा. तंबाखुचा धुर, तापवणे, सूर्यप्रकाशात ठेवणे या सारख्या प्रक्रियामुळे काही

खाद्यपदार्थात मुक्तमुलके निर्माण होतात. उदा. वारंवार तापवलेले तळणीचे तेल, तर काहीखाद्यवस्तुत असणारी अपायकारक द्रव्ये शरीरातील मुक्तमुलक निर्मातीला चालणा देतात उदा. बुरशी आलेले धान्य, डाळी,शेंगदाणे असे खाद्यपदार्थ सेवन केल्यास शरीरात मुक्तमुलके निर्माण होतात. मुक्तमुलकांनी शरीरात प्रवेश केल्यावर ते कोठेही फिरू शकतात. मात्र ते एकटे फिरत नाही तर ते एखाद्या पेशीला जावून चिपकतात व तेथूनच ऑक्सिडेशनची प्रक्रिया सुरु होते. मुक्तमुलके ही मानवी शरीरातील पेशी व पोषक घटकांच्या उपलब्धतेवर वाईट परिणाम करतात. ज्यामुळे मानवी शरीरात न्हासात्मक क्रियांचा वेग वाढून मानवी देह संपुष्टात येतो.

मुक्तमुलके पेशींच्या आत खोलवर जातात आणि पेशींच्या बाह्य आवरणात असणाऱ्या व पेशींची रचना आणि कार्य सांभाळणाऱ्या पुफांना (PUFA Poly unsaturated fatty Acids) उदा. लिनोलिक, अल्फा लिनोलेनिक आणि अरचिडोनिक स्निग्धाम्ले निष्क्रिय करतात. तसेच रचनात्मक प्रथिने व कर्बोदकांची नासाडी करतात. त्यामुळे पेशींच्या रचनेत आणि कार्यात बिघाड निर्माण होऊन पेशींचा न्हास होतो. त्याचा परिणाम म्हणजे अनेक प्रकारचे कर्करोग, कर्मरोगाच्या गाठी वेगाने वाढणे, रोग प्रतिकारक यंत्रणेची कार्यक्षमता खूप कमी होते. हृदयरोहिणीविकार रोहिणीकाठीण्य, लवकर वृद्धावस्था येणे व संसर्ग वाढत जाऊन मृत्युचा धोका निर्माण होतो.

### ऑक्सिडनविरोधी तत्वे (ANTIOXIDANTS)

हे असे तत्व आहे जे आमच्या शरीरातील सगळ्या नुकसानदायक घटकांना बाहेर काढण्यास आपली मदत करतात. असे अनेक पोषक तत्व आहेत जे अँटी-ऑक्सीडेंट सारखेच काम करतात. उदा. जीवनसत्व, खनिजे, बीटा कॅरोटीन ही द्रव्ये मुक्तमुलकांना निष्क्रिय करून पेशींचे न्हासापासून संरक्षण करून वेगवेगळ्या रोगांना प्रतिबंध करण्याचे कार्य करतात. अन्नातील काही पोषक घटकात जीवनसत्वे ‘अ’ बीटा-कॅरोटीन जीवनसत्व ‘क’ जीवनसत्व ‘ड’, तंतुसेनियम, मॅगनीज, झिंक, तांबे, लोह यात ऑक्सिडनविरोधी गुणधर्म असतात. त्यामुळे शरीरात ऑक्सिडनविरोधी कार्य करतात.

निरनिराळ्या न्हासात्मक विकारांचा धोका टाळण्यासाठी व वार्धक्य प्रक्रिया लाबवण्यासाठी ऑक्सिडनविरोधी गुणधर्म असणाऱ्या अन्न पदार्थांचा आहारात मुबलक प्रमाणात व दिर्घकाळ वापर आवश्यक असतो. यासाठी फळे, पालेभाज्या

व इतर भाज्या, कोड्यासहित धान्याचा आहारात भरपुर प्रमाणात उपयोग करावा.

काही अन्नपदार्थात निरनिराळी ऑक्सिडनविरोधी द्रव्ये असतात. उदा. लसूण, लाल जातीचा कांदा, अद्रक, रताळे, सोयाबीन, मोहरी, तीळ, शेंगदाणे, कोरडे मसाल्याचे पदार्थ उदा. मिरे, लवंग, सुंठ, गहू, जव, मक्यासारखी कोड्यासहित धान्ये इत्यादी.

### **ANTIOXIDANT RICH FOOD**

एन्टी ऑक्सीडेंट युक्त आहार फ्रि रॅडिकल ला काढून टाकून शरीराची सफाई करते.

**लिंबू :-** पिवळ्या रंगाच्या ह्या फळामध्ये जीवनसत्व सी, अत्यंत महत्वपूर्ण अँन्टीऑक्सीडेंट चा शक्तीशाली स्रोत आहे. लिंबुमध्ये असलेल्या अँन्टीऑक्सीडेंट आपल्या केसांना, त्वचेला अत्यंत फायदेशीर आहे.

**स्ट्रॉबेरी :-** जीवनसत्व सी भरपुर प्रमाणात अँन्टीऑक्सीडेंट तत्व शरीरामध्ये फ्री रेडीकल्सला नष्ट करून रोगप्रतिरोधक क्षमता वाढवते. जीवनसत्व क शरीरामध्ये स्टोअर होत नसल्यामुळे रोज त्याचे सेवन करणे आवश्यक आहे.

**सुखामेवा :-** सुखामेवामध्ये जीवनसत्व ई ने समृद्ध असतो. जीवनसत्व सी च्या विरुद्ध जीवनसत्व ई, लीवरमध्ये स्निग्धासोबत शरीरात जमा होत असते. बादाम, अखरोट, पिस्ता ह्या मध्ये भरपुर जीवनसत्व ई आहे. एका परिक्षणानुसार सुखामेवा खाणारे न खाण्याच्यापेक्षा अधिक काळ जगतात.

**अंडे :-** जगामध्ये सगळ्यांना आवडणाऱ्या आहारात ह्याचा समावेश होतो. ह्यामध्ये जीवनसत्व ई असल्यामुळे ऑक्सिडीकरण प्रक्रिया संपविण्यासाठी आवश्यक आहे.

**मासे :-** माश्यामध्ये सेलेनियमची मात्रा अधिक असते. हे एक प्रकारचे रसायन आहे. जे शरीरातील पेशींना तुटण्यापासून वाचवतात ह्यासाठी वेगवेगळ्या जातींच्या माश्यांचा वापर आहारात केल्यास एंटी ऑक्सीडेंट भरपुर प्रमाणात मिळेल.

**ब्राऊन राईस :-** ह्याचा रंग आणि स्वाद सगळ्यांना आवडत नाही परंतु ह्यामध्ये अनेक गुण असतात. ह्यामध्ये कॅलरीची मात्रा बरीच कमी असते. हा ग्लूटेन फ्री असतो. याशिवाय त्यामध्ये पॉलीफिनॉल नामक शक्तिशाली एंटीऑक्सीडेंट ऑक्सीकरणची प्रक्रिया थांबवायला मदत करते.

**सोयाबीन :-** ह्यामध्ये सिस्टीन नामक एंटी-ऑक्सीडेंट असतो. जो शरीरातील मुक्तकांना बाहेर काढण्यास मदत करतात. तसेच ह्या मध्ये प्रथिनाची मात्र उच्च प्रमाणात असते.

**टरबूज :-** ह्यामध्ये ग्लूटेथियॉन नावाचे एंटीऑक्सीडेंट भरपुर प्रमाणात असल्यामुळे विषारी पदार्थापासून पेशींचे संरक्षण करते. त्याबरोबरच ह्यामध्ये जीवनसत्व सी ची मात्रा देखील अधिक असते.

**पिकलेले केळ :-** नेहमी आपण अति पिकलेले केळ फेकून देतो परंतु हे पिकलेले केळ एंटीऑक्सीडेंटचा सर्वात मोठा स्रोत आहे. एक पिकलेले केळ शरीरातील ऑक्सीकरण प्रक्रियेला नियंत्रित करून शरीर स्वस्थ ठेवण्यास मदत करते.

ह्या व्यतिरिक्त राजमा, टमाटर, बीट, अद्रक, लसूण, डाळींब, कीवी, लाल अंगूर ह्यामध्ये भरपुर अँन्टीऑक्सीडेंट असतात. हे खाण्याचे प्रमाण जरी निश्चित नसले तरी आपल्या रोजच्या आहार ह्या फळांचा, भाज्यांचा उपयोग नियंत्रित करणे आवश्यक आहे.

### **एंटीऑक्सीडेंट चे फायदे**

- १) वय वाढण्यापासून शरीराला वाचवते.
- २) त्वचेवर येणाऱ्या सुरकृत्या कमी करते.
- ३) शरीरावरची सूजन कमी करते.
- ४) हृदयाचे अनेक विकारापासून संरक्षण करते. कोलेस्ट्रॉलच्या स्तराला कमी करते त्यामुळे हृदय सशक्त राहाते.
- ५) डोळ्यामध्ये होणाऱ्या मोतीबिन्दुला कमी करण्यासाठी ल्यूटीन वजियाक्सथीन एंटीऑक्सीडेंट महत्वाचे मानले जाते.
- ६) मधुमेहाला नियंत्रित ठेवण्यासाठी उपयुक्त पोलीफेनॉल्स नावाचे एंटीऑक्सीडेंट रक्त शर्करेचा स्तर कमी करण्यासाठी उपयुक्त आहे तसेच मधुमेहानंतर होणाऱ्या इतर अवयवाच्या नुकसानीला थांबविण्याचे काम हे एन्टी ऑक्सीडेंट करते.
- ७) कॅन्सरपासून शरीराचे रक्षण करणे.
- ८) स्ट्रोक, अल्जाइयर, पार्किंसंस ह्या सारख्या समस्यांना थांबवण्याचे काम करते.
- ९) रोगप्रतिकारक शक्ती वाढते.

एंटीऑक्सीडेंट असलेल्या आहाराच्या प्रतिदिन सेवनाने शरीर नैसर्गिक पध्दतीने डेटॉक्स (detox) करण्याचे काम होते कारण नेहमीच शरीरात उपलब्ध फ्री रेडीकल्स आणि मोलेक्युल्स शरीराची हाणी करतात. म्हणूनच एंटीऑक्सीडेंट युक्त आहार नियमित घेतल्याने आपण अनेक आजारापासून वाचू शकतो. भारतीय आहार हा चौरस मानला जातो. म्हणूनच त्यामध्ये जीवनसत्व, क्षार असलेल्या आहाराचा उपयोग केल्या जातो.

### **संदर्भ ग्रंथ सुची**

- 1) <https://www.myupchar.com>
- 2) [fitnessncure.com/beauty-tips](https://fitnessncure.com/beauty-tips)
- 3) <https://wwwmyupchar.com>tips>
- 4) [www.onlymyhealth.com>antio](http://www.onlymyhealth.com>antio)

- 5) आहारोपचार आणि सामुदायिक पोषण, प्रा. वाघमारे शोभा—विद्या बुक्स पब्लिशर्स औरंगाबाद
- 6) आहार मिमांसा, प्रा. लेले सरल.

## आहार पोषणातील घटक आणि आजार, उपचार

क.पी. कोरडे

गृहअर्थशास्त्र विभाग, शिवशक्ती महाविद्यालय बाभुळगांव, यवतमाळ

सध्याच्या आजाराचे मुळ खानपान आहे. याकडे सारेच दुर्लक्ष करतात. अलीकडे चाळीशी नंतर सारेच गुडघे आणि सांधे दुखीने त्रस्त असतात अनेक आजाराचे कारण योग्य आहार आणि पोषण आहे. आहारातून उपचार अनोखी उपचार पध्दती राबविणारे डॉ.एस.कुमार प्रसिद्ध आहे त्याच्या आहारातून उपचार पध्दतीस यश मिळाले, देशी विदेशी रूग्ण या पध्दतीकडे वळले. शरीरात रक्ताची किमान पिएच पातळी हवी असते अनियमित खानपानामुळे ही पातळी असंतुली होते. याचा परिणाम दोन हाडांमधील कार्टिलीज, हाडांमध्ये घर्षण होवू नये यासाठी असलेला लवचीक पदार्थ पातळ होते, वारंवार होणच्या घर्षणामुळे कार्टिलीज तुटते. अनियमित आहारामुळे कॅल्शियम कमी होत यावर आहार उपचार थरेपी विविध आजारावर वरदान ठरू शकते. आवश्यक असलेले जीवनसत्व आहारात समाविष्ट असल्यास जॉइंटवर उपचार होवू शकतो. अनेक फळभाज्यामुळे अनेक घटक असतात जे विविध आजारावर उपयोगी व औषधोपचाराच्या माध्यमातून उपयुक्त आणि वरदान ठरू शकते.

### लिंबू

भारतात लिंबू उत्पादन सर्व प्रथम आहे. यामध्ये ६१०% सायट्रीक अॅसीड असते. प्रोस्टेटच्या कर्करोगावर गुणकारी आहे. अग्नीमांद्य, उजीर्ण, मलावरोध, पोट फुगणे, यकृताचे विकार यावर उपयुक्त आहे. रक्तशोधक, रक्तपित्तनाशक आहे. लिंबाच्या सालीचे तेल देवी, गोवर, काजण्या इ. विकार मुतखडा, नाकातून रक्तस्राव, ताप आल्यास गरम पाण्यात लिंबू पिळून सरबत ताप उतरण्यास गुणकारी आहे. केसामध्ये कोंडा विकारात लिंबाचा रस गुणकारी व्हिटॅमिन सी. मोठया प्रमाणात असल्यास दातातून रक्त येणे, हिरडया कमकुवत असणे इ. उपयुक्त ठरते. अनेक औषधांच्या गुणधर्मात लिंबू उपयुक्त आहे.

### टोमॅटो

टोमॅटोमध्ये असणारा लाल रंगद्रव्य लायकोपीन चा उपयोग प्रास्टेट ग्रंथीच्या कर्करोगावर उपयुक्त आहे. हॉलंडमध्ये झालेल्या एका संशोधनात असे आढळले की या रंगद्रव्यात 'इ' जीवनसत्व घेतल्यास कर्करोगाचा धोका ६३% कमी होतो.

### अननस

अननस १५६४ मध्ये पोर्तुगजांनी हे भारतात आणले. भारतात सर्वत्र उपलब्ध झाले. यामध्ये 'ब्रोमोलीन' नावाचे मांसपाचक दुध असते त्या व्यतिरिक्त रसायनेही असतात. वातनाशक,

उत्तमपाचक भुक्त वाढविणारे, मुतखडा, लघवीतील अडथळा दूर होणे, ताप, शरीरदाह, कावळी, हृदयरोग, रक्तपिती यामध्ये रस औषधी गुणधर्मी आहे.

### केळे

केळात भरपुर प्रमाणात प्रक्टोज, सुक्रोज, ग्लुकोज तिनही शर्करा असते. जीवनसत्वाचा भरपुर साठा उष्मांक जास्त प्रमाणात, केळयात पोटॅशियम, मॅग्नेशियम असल्याने रक्तदाब, हृदय विकारास उपयोगी. केळयात लोह असल्यामुळे अॅनीमिया, रक्ताची कमतरता यावर औषधी उपचारमुक्त आहे बी६ असल्याने रक्ताची पातळी नियंत्रणात राहते. नेक्ट्रीनमुळे बद्धकोष्ठता मुक्त आहे. पोटॅशियम स्मरणशक्तीवर्धक आहे. छाती जळजळ, अॅसीडीटी यावर रामबाण उपाय.

### सीताफळ

सीताफळ मधुर, स्निग्ध, वातपित्तनाशक आहे यांची पाने व बिया जंतुनाशक व सुज नाहीशी करणारे आहेत. रक्तवर्धक पित्तनाशक, मलवृद्धी साफ होणे, हृदयास हितकार वंजन वाढविणे याकरीता उपयुक्त आहे. जखमेवरील फोडे नष्ट करण्यास सीताफळाची पाने, चुना, मध घासून जखमेवर बांधण्यास जखम बरी होते.

### संत्री

आंबट गोड रसदार संत्र्यामध्ये जी, क, लोह, पोटॅशियम, सायट्रीक अॅसीडमुळे आंबटपणा येतो. कोणत्याही वयातील व्यक्तीचे आरोग्य टिकविण्यास उपयुक्त, कर्करोगांना प्रतिबंध, स्नायुंना ताकद देणे हे कार्य करते.

### आवळा

जीवनसत्व 'क' चा भरपुर साठा, रक्तातील कोलेस्टेरॉलचे प्रमाण, केस, त्वचा यांच्या आरोग्या रीता आयुर्वेदात औषधी गुणधर्म असेला आवळा आहे.

### डाळींब

औषधी गुणधर्मासाठी डाळींब पुर्वापार प्रसिद्ध झालेले आहे. डाळींबाच्या बीया, पाने, साले, फुले या सर्वांचा वापर औषधी गुणधर्मात केल्या जातो. हृदय, अतीसार, हिरडयांच्या तक्रारी रक्तस्राव या सर्वांना उपयुक्त आहे.

### पपई

जीवनसत्वाचा अ चा खजीना असलेली पपई पचनास हल्ली उत्सहवर्धक पपई मधील पेपेन हे आतडयातील दाह कमी करण्यास उपयुक्त, शिजणा—या डाळी भातामध्ये वापरतात.

### पेरू

जीवनसत्व 'क' खजीना बध्दकोष्ठता, दंतविकार, अतीसार, रोगप्रतीकार शक्ती वाढते व यावर उपयुक्त.

### औषधी कढीपत्ता

कढीपत्ता किंवा बढीनिंब कोणत्याही पदार्थाची चव वाढवत तडक्यासाठी फोडणीत राईसोबत कढीपत्त्याची पानं टाकली की तडतडणारा आवाज आणि दरवळणारा सुगंध भुकही वाढवत, कढीपत्ता जशी पदार्थाची चव वाढवतो तसाच आरोग्यदायी आणि औषधीसुध्दा आहे. भरपूर पोषणमुल्यांनी युक्त असं हे पान म्हणुनच आहारात असायला हवं. केसांच्या समस्यांवर कढीपत्ता अत्यंत उपयुक्त आहे. केसांच्या वाढीला मदत करणारी पोषणमुल्य यात असतात. कढीपत्त्याच्या नियमित सेवनाने केसांना बळकटी मिळते. कोंड्याची समस्या दूर होते. तसेच केस अकाली पांढरे होत नाहीत त्यामुळे केसांचे सौंदर्य राखण्यासाठी कढीपत्त्याचा आहारात समावेश करावा.

कढीपत्त्यात भरपूर अँक्टीऑसिडँटस आणि 'क' जीवनसत्व असतं. यामुळे त्वचेसाठीही कढीपत्ता लाभदायी आहे. चेह—यावरची मुरंम, पुटकुळ्या दूर करण्यासोबत चखमांचे व्रण चेह—याचा काहपटपणा, रॅश, किडे चावल्याच्या खुणाही ब—या होतात. कढीपत्ता खाल्याने यकृताचं कार्य व्यवस्थीत चालायला मदत होते. सोरायसिस या यकृताशी संबंधीत विकारावर कढीपत्ता हा एक उत्तम उपाय आहे. कढीपत्त्यातल्या गुणधर्मांमुळे जंतुसंसर्गापासूनही यकृताचा बचाव होतो.

मोतीबिंदू सारखा आजार टाळण्यासाठी आहारात कढीपत्त्यांचा समावेश करायला हवा, कढीपत्त्यांत 'अ' जीवनसत्व भरपूर प्रमाणात असतं. यामुळे डोळ्यांचं आरोग्य उत्तम राहतं आणि दृष्टीदोषही टाळता येतात.

अँनिमिया किंवा रक्तक्षय असणा—यासाठी कढीपत्ता हे रामबाण औषध आहे. कढीपत्त्यात लोह आणि फॉलिक अँसिड असतं. फॉलिक अँसिडमुळे शरीरात लोह शोषून घेतल जातं त्यामुळे अँनिमिया असलेल्या व्यक्तींना कढीपत्त्यांचे दुहेरी फायदे मिळतात.

यकृताच्या कर्करोगावर ब्रोकोली उपयुक्त :

### यकृताच्या कर्करोगावर ब्रोकोली उपयुक्त

सशोधकांच्या मते, आठवड्यातून तीन ते चार वेळा ब्रोकोलीचे सेवन आहारातून केल्यास स्तनाचा, प्रोस्टेट (मूत्राशयाचा निमुळता भागावर असणारी ग्रंथी) आणि मोठया आतड्यांसारखे कर्करोग होण्याची शक्यता फारच कमी असते.

रोजच्या आहारातील ब्रोकोलीच्या सेवनामुळे यकृताचा कर्करोग बळावत नसल्याचे नव संशोधनात सिध्द झाले आहे. तसेच यकृताची चरबीयुक्त वाढ किंवा मद्यसेवन नसतानाही

यकृताची होणारी वाढ (एनएएफएलडी) आणि ततूनन पुढे वकृतात होणारा बिघाडामुळे सर्वात जास्त मृत्यु होण्याचे प्रमाण असलेल्या यकृतातील पेशीचा कार्सिनोमा (एचसीसी) सारखा आजार देखील बळावत नसल्याचे दिसून आले आहे. अमेरीकेतील लिलिइनोईस विद्यापीठाच्या इलिजाबेथ फेफरी यांच्या म्हणण्यानुसार ब्रोकोलीमुळे कर्करोगावर नियंत्रण मिळविता येते. अति प्रमाणातील चरबीयुक्त व साखरमिश्रित आहार आणि शरीरातील अतिरिक्त चरबीची वाढ यांचा संबंध हा एनएएफएलडीच्या वाढीस पोषकअसून त्यामुळेच सिरोसिस आणि यकृताचा कर्करोगासारखे आजार बळावत असतात यावेळी संशोधकांनी यकृताचा कर्करोगाला अनुरूप आहारासोबत ब्रोकोलीचा आहार उंदराला दिला त्यासाठी चार उंदराचे विविध गटामध्ये परीक्ष केले गेले त्यापैकी काहींना अतिशय नियंत्रित आहार किंवा पाश्चिमात्य आहार आणि काहींना ब्रोकोलीयुक्त किंवा ब्रोकोलीविरहीत आहार देताना यकृताची वाढ जास्त किंवा कमी यांची पडताळणी करण्यात आली. यावेळी संशोधकांनी यकृताच्या कर्करोगाला अनुरूप अशा पाश्चिमात्य आहारासोबत न्युडल्स दिल्यानंतर यकृताचा आकार वाढल्याचे दिसून आले आणि जेव्हा आहारात ब्रोकोलीचा समावेश करतांना न्युडल्सची संख्या कमी करण्यात आली. तेव्हा मात्र यकृताचा आकारात कोणतीही वाढ झाली नसल्याचे दिसून आले. याचाच अर्थ असा की, आहारातील ब्रोकोलीच्या समावेशामुळे यकृतातील अतिरिक्त चरबीयुक्त वाढ थांबली असून यकृतातून बाहेर पडणा—या चरबीलाही नियंत्रीत ठेवले जाते.

### आरोग्यदायी सायटोकेमिकल्स

ताजी फळं भाज्या आणि पूर्ण धान्य या घटकांचा आहारात समावेश करण्याचा सल्ला नेहमीच दिला जातो. फळं आणि भाज्यांमध्ये भरपूर प्रमाणात पोषकद्रव्य असतात. आता विज्ञानांही विविध रंगांच्या भाज्या, फळ, खाण्याचं महत्व अधोरेखित केलं आहे. फळ आणि भाज्यांचा रंग चव या गोष्टी अशा ठरतात हा प्रश्न सर्व सामान्यांना पडतो. फळं आणि भाज्यांनी रंगांची तसेच चवीची देणगी मिळाली ती विशिष्ट प्रकारच्या रसायनांमुळे, वनस्पतीजन्य पदार्थांमध्ये ही रसायनं आढळतात. या रसायनांना 'सायटोकेमिकल्स' असं म्हटलं जातं. तुमच्या आहारात रंगीबेरंगी फळभाज्यांचा समावेश केला तर यातील 'सायटोकेमिकल्स' मुळे तुम्हाला आरोग्यदायी जीवनाचा आनंद घेता येईल. फळ आणि भाज्यांमधल्या 'सायटोकेमिकल्स' मध्ये रोगांशी लढण्याची क्षमता असते.

'सायटोकेमिकल्स' मध्ये आढळणाऱ्या पोषकद्रव्यांना सायट्रोन्यूट्रीयंट्स अँटी ऑस्कीडँटस म्हणुन काम करतात. यामुळे तुमची रोगप्रतिकारक क्षमता सुधारते. विविध रोगांची लागण होण्यापासून शरीराचं रक्षण होतं.

आहारात फळं, भाज्या आणि पूर्ण धान्यांचा भरपूर प्रमाणात समावेश करणाऱ्या व्यक्तीमध्ये हृदयविकार, कर्करोग, मधुमेह तसेच लवकर वय वाढणं यासारख्या समस्या निर्माण होण्याचा प्रमाण ब-याच अंशी कमी होत.

केरोटिनॉइड, फ्लॅवोनॉइडस, लिंगनॉन्स, सॅपोनिन्स, सायटीक अॅसीड, सल्फाइडस असे सायटोन्ट्रीयंटसचे विविध प्रकार आहेत.

पिवळ्या केशरी आणि लाल रंगाची फळं आणि भाज्यांमध्ये केरोटिनॉइडस आढळतात. भोपळा, गाजर, आंबा, टोमॅटो आणि रताळ यामध्ये केरोटिनॉइडस असतात यामुळे शरीराची रोगांशी लढण्याची क्षमता वाढते. हृदयासाठी ही फळ चांगली असतात. लायकोपेन, बीटा-केरोटीन, ल्यूटेन आणि झिअॅक्सेथिन यासारखे केरोटिनॉइडसडोळ्यांचं आरोग्य राखण्यासोबत कर्करोगाचा धोकाही कमी करतात.

फ्लॅवोनॉइडस मध्ये भरपूर अॅटीऑक्सीडंटस असतात. बेरी, डार्क चॉकलेट, आंबट फळं, ग्रीन टी आणि कांद्यामध्ये

फ्लॅवोनॉइडस आढळतात. यापदार्थांमध्ये हृदय विकार तसेच कॅन्सरविरोधी तत्वं असतात. आले, टोमॅटो, पार्सेली यातही विविध प्रकारची फ्लॅवोनॉइडस सापडतात.

चवळी विविध प्रकारच्या डाळी यात सॅपोनिन्स हे सायटोन्ट्रीयंट आढळते. या पदार्थांच्या सेवनाने कोलेस्ट्रॉलच प्रमाण कमी होत. या पदार्थांमध्ये कॅन्सर तसेच मधुमेहाविरोधी तत्वंही असतात त्यामुळे या पदार्थांचे सेवन फायद्याच ठरतं.

सायटीक अॅसिडमुळे आरोग्यविषयक समस्या निर्माण होण्याची शक्यता कमी होते. हा घटक धनीकाठियाला अटकाव करतो. डाळी, कडधान्य, काजू, तेलबिया यात सायटीक अॅसीड असतं. यामुळे ब्रेस्ट तसंच प्रोस्टेट कॅन्सरचा धोका कमी होतो. ट्यूमरच्या वाढीलाही यामुळे प्रतिबंध होतो.

तीळ, भोपळ्यांच्या बीया, जवस आणि सोयाबीन यात लिग्नन आढळत यामुळे केसांचं आरोग्य उत्त राहत. हृदयविकाराचा धोका कमी होतो. लिग्ननमुळे रक्तातील साखरेची पातळी नियंत्रणात राहते.

### संदर्भ ग्रंथ

१. गृहविज्ञान श्रीमती एस.पी.सुखिया, श्रीमती जी.पी. शैरी
२. गृहविज्ञान युजीसी सेट/नेट
३. फार्मसी डॉक्टर १४ ऑ. २००५
४. फार्मसी डॉक्टर १२ नोव्हें. २००४
५. सकाळ २६ मे २०१७
६. डॉक्टरनेप नेथे डॉ.रमेश पोतदार महाराष्ट्र शासन
७. दोशोन्नती आरोग्य १६ मार्च २०१६
८. पुण्यनगरी १९ ऑगस्ट २०१६



## पर्यावरण संतुलनात मानवाचा सहभाग

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### सारांश

मानवी जीवनात पर्यावरणाचे अत्यंत महत्व आहे. आज पर्यावरण असंतुलीत होत असल्याने संपूर्ण विनाशाकडेच जणूकाही वाटचाल सुरू आहे. अशास्थितीमध्ये आपण पर्यावरणाचा विचार करून मानवीजीवन वाचवणे अत्यावश्यक आहे. आणि म्हणूनच जागतिक स्तरावर पर्यावरणाचा अगदी गांभीर्यान विचार सुरू आहे. पर्यावरणाचे दोन महत्वाचे भाग करून त्याचे उपविभागही याच कारणाने करण्यात आले आहेत. प्रस्तूत शोध निबंधातून पर्यावरण मूलक विचार मांडण्याचा प्रस्तूत शोधनिबंध लेखकाचा मानस आहे.

**मुख्य शब्द :-** पर्यावरण, राष्ट्र, मानव, मानवीजीवन, निसर्ग, नैसर्गिक पर्यावरण, सामाजिक पर्यावरण.

### प्रस्तावना

जगामध्ये पर्यावरणाच्या अध्ययनास फारच महत्व प्राप्त झाले आहे. अलिकडे पर्यावरण हाशब्द सर्वांच्या जिह्वाळ्याचा झाला आहे. पर्यावरण या शब्दांचे अध्ययन पहिले भूगोल या विषयात केले जात होते. परंतु अलिकडील काळात पर्यावरण शास्त्राला विशेष महत्व प्राप्त झाले आहे. म्हणूनच विद्यापिठस्तरावर पर्यावरण हा विषय अभ्यासासाठी तसेच पर्यावरण हि संकल्पना अतिशय गुंतागुंतीची व बहुव्यापक आहे. पर्यावरण म्हणजेच भूपृष्ठावर विशिष्ट भागाशी निगडित असलेली सभोतालची परिस्थिती होय. शब्दअपतवदश या फ्रेंच भाषेतील शब्दाचा अर्थ शब्द नैततवनदकश असा होतो. पर्यावरण म्हणजे सभोतालची परिस्थिती. जैविक व अजैविक घटकांचा समावेश असलेली सभोतालच्या परिस्थितीची एकत्रित स्थिती म्हणजे पर्यावरण होय.

“एखाद्या सजीवाच्या सभोवतालची परिस्थिती जैविक व अजैविक घटकांचा समावेश असलेली परिस्थितीची एकत्रित स्थिती म्हणजे पर्यावरण होय.”

“एखाद्या सजीवाच्या सभोवतालची असलेली प्राकृतिक रासायनिक व जैविक परिस्थिती म्हणजेच पर्यावरण होय.”

“विशिष्ट वेळी विशिष्ट ठिकाणी मानवाला वेढणारी जी नैसर्गिक किंवा सांस्कृतिक परिस्थितीची एकात्मीक अवस्था म्हणजे पर्यावरण होय.”

### विवेचन

शोडक्यात आपल्या भोवती असणारी हवा, पाणी, प्रकाश, जमिन, वस्तुमान, प्राणी, वनस्पती, मनुष्य या सगळ्या घटकांचा एकत्रित विचार म्हणजे पर्यावरण होय. या सगळ्या घटकांचा व त्यांच्या एकुण परिणामांचा अभ्यास पर्यावरण शास्त्राद्वारे केला जातो. सध्यास्थितीतील पृथ्वीवर पर्यावरण अस्तीत्वात आहे. जगात दुसरी कोणती गोष्ट सर्वव्यापी असेल

तर ती पर्यावरण होय. मानवाचा व पर्यावरणाचा परस्परराशी अन्यय संबंध आहे. मातेचे कुस म्हणजेच भ्रूणाचे पर्यावरण असते. त्याप्रमाणे धरतीची कुस हे मानवाचे पर्यावरण होय. त्याप्रमाणे पर्यावरण संतुलनात मानवाचा सहभाग प्रामुख्याने असतो. हे आपणां स नाकारून चालणार नाही हे मान्यच करावे लागेल.

पर्यावरण अलीकडील काळात सामान्य नागरिकापासून ते राज्यकर्त्यापर्यंत, शालेयस्तरावरील विद्यार्थ्यांपासून ते शास्त्रज्ञापर्यंत सर्वांच्या चर्चेचा किंवा अध्ययनाचा विषय झालेला आढळतो. पर्यावरण अनेक जैविक व अजैविक घटकांनी बनलेले आहे. मानव संपदा पर्यावरणाचा जैविक घटकांपैकी एक महत्वाचा घटक आहे. कारण मानव नैसर्गिक साधनसंपत्तीचा कसा वापर करतो यावर पर्यावरणाचा दर्जा अवलंबून असतो. मानव आपले बुद्धीचातुर्य आणि तांत्रिक कौशल्याद्वारे नैसर्गिक पर्यावरणात सातत्याने बदल घडवून आणतात. पर्यावरणाचा अभ्यास खऱ्या अर्थाने निसर्गात जावूनच करावयाचा असतो, अनुभवाचा असतो. शाळा, महाविद्यालयात कितीही अध्ययन केले तरी ते परिणामकारण होवु शकत नाही. त्यासाठी निसर्गाच्या सानिध्यात जावून हवा, पाणी, जमिन, पशुपक्षी, वनस्पती, वृक्ष व मानव यांच्यातील परस्पर नात्यांचा अभ्यास करावयाला हवा. पर्यावरण शिक्षण हे निरीक्षणाद्वारे शिकण्याचे शास्त्र असून त्याचा सखोल अभ्यास आपण करावयाला पाहिजे.

### पर्यावरणाचे प्रकार

जगामध्ये पर्यावरणाचे सर्वसाधारणपणे प्रमुख दोन प्रकारमध्ये वर्गीकरण केले जाते.

१. नैसर्गिक पर्यावरण
२. सामाजिक पर्यावरण

### नैसर्गिक पर्यावरण

यांच्या संदर्भातील भौगोलिक घटक	
१. मृदावरण	१. स्थान, क्षेत्र, आकार
२. जलावरण	२. हवामान
३. वातावरण	३. भूगर्भरचना
४. प्राणी	४. जमिन, मृदा
५. वनस्पती	५. प्राकृतिक रचना
६. सुक्ष्मजीव	६. प्रवाह प्रणाली

### सामाजिक पर्यावरण

१. लोकसंख्या वसाहती	४. राजकीय पर्यावरण
२. आर्थिक पर्यावरण	५. धार्मिक पर्यावरण
३. सामाजिक पर्यावरण	६. सांस्कृतिक पर्यावरण

पर्यावरण विषयासंबंधी विचार करण्यासाठी पहिली विश्व परिषद ५ जून १९७२ रोजी स्टॉकहोम येथे सुरू झाली. ५ जून हा विश्व पर्यावरण दिन म्हणुन जगभर ओळखला जातो. स्टॉकहोम परिषदेमुळे पर्यावरण विचारात एक मुलभूत बदल घडवून आला. या परिषदेचे सर्वात महत्वाचे फलीत म्हणजे संयुक्त राष्ट्रसंघ पर्यावरण कार्यक्रम (यु.एन.ई.पी.) या संस्थेची स्थापना होय. भारतामध्ये १९८० मध्ये पर्यावरण खाते केंद्रशासनात निर्माण करण्यात आले आणि त्यानंतर १९८५ मध्ये भारत सरकारने पर्यावरण व वन, मंत्रालय या खात्याचे रूपांतर केले. मंत्रालयातर्फे पर्यावरण शिक्षण जागृती, प्रबोधन, विविध वयोगटातील स्त्री-पुरूषांसाठी व्हावी म्हणुन पर्यावरण माहिती पद्धती निर्माण करण्यात आली. १९९६ पासून राष्ट्रीय पर्यावरण मोहिम देशभर राबवली जात आहे. सन १९९२-९३ पासून पर्यावरण वाहिनीची नवी योजना सुरू झाली. महाराष्ट्र शासनाच्या अधिकारात सन १९७० मध्ये प्रदुषण नियंत्रण मंडळाची स्थापना करण्यात आली. एकंदर असे म्हणता येईल जागतिक पातळीवर व भारतात सुद्धा विविध स्तरावर शासना पर्यावरण या विषयाला अतिशय महत्व देवुन पर्यावरण संरक्षणासाठी विविध संस्था कार्यरत आहे. परंतु पर्यावरण संरक्षणासाठी केवळ सरकारला जबाबदार धरण्यापेक्षा समाजामध्ये पर्यावरण विषय जागृती निर्माण करणे आवश्यक आहे.

साधारणतः भूमी, जल, वायु, ध्वनी प्रदुषणाने अनेक समस्या निर्माण झाल्या आहेत. या विविध प्रदुषणाचा परिमाण सरळ मानवी स्वास्थावर पडतांना आपल्याला दिसतो आहे. यामुळे मनुष्य विविध रोगांना बळी पडतो आहे.

### भूमी प्रदुषण

पर्यावरणातील एक घटक म्हणून भूमी फार महत्वाची आहे. भूमी म्हणजे माती, शेतीतील माती पाऊसामुळे वाहून जाते, त्यामुळे जमिनीची धूप होते. जमीन नापीक होऊन पिकांची उत्पादनक्षमता कमी होते. भूमीवर घरे, कारखाने, धरणे, वीटा पाडणे इ. कार्य मातीचा वापर करूनच करू लागले.

साहजिकच जमिनीची पोत बिघडून अशा प्रकारची जमीन नापीक होऊ लागली. जमिनीचा अती वापर केल्यामुळे जमिनीचा कस कमी होऊन ती नापीक झाली. जमिनीवर कचरा साठविणे, जमिनीला सतत पाणी देवुन ती क्षारयुक्त करणे, अशा अनेक घटनांमुळे जमिनीचे एक प्रकारचे प्रदुषण होत चालले आहे.

### जल प्रदुषण

पाणी एक नैसर्गिक जल संपत्ती आहे, पाण्याशिवाय जीवसृष्टी अशक्य गोष्ट आहे. पृथ्वीवरील प्रत्येक सजीवांच्या वाढीला, पोषणाला आणि जगण्यासाठी पाणी हे जीवन म्हटले आहे.

पर्यावरणाचा प्रमुख घटक असणाऱ्या पाण्याचे प्रदुषण अर्थात जल प्रदुषण ही आज साधी समस्या जागतिक समस्या बनत चालली आहे. पर्वतावरून वाहत येणाऱ्या नद्यांत अनेक प्रकारचे विषारी पदार्थ वाहत येतात. नदी काठावरील माणस वाहत्या पाण्यात म्हैशी, बैल इतर प्राण्यांना धुतात तसेच या पाण्यात शहरातील आणि ग्रामीण भागातील सांडपाणी, मृतपाणी आणि कारखान्यातून वाहत आलेले टाकाऊ रसायने मिसळतात. त्यामुळे मोठया प्रमाणावर जल प्रदुषण होत आहे. आपल्याकडे अनेकाकडे गणपती, देवी असे उत्साह होतात, परंपरेने चालत आलेले शाहुची मुर्ती सोडुन गेले, अनेक वर्ष फ्लॅस्टर ऑफ पॅरिसची मुर्तीचा वापर चालु आहे. फ्लॅस्टर ऑफ पॅरिस पाण्यात विरघळत नाही, त्यामुळे अधिक जल प्रदुषण होते, त्यामुळे पाणी प्रदुषण होते.

### वायु प्रदुषण

वाहतुकीमुळे आणि गाडयामधुन निघणाऱ्या धुरास कार्बनमोनॉक्साईड या विषारी वायुचे प्रमाण जास्त असुन ते शरीराला अपायकारक असते. वातावरणात धुराचे प्रमाण वाढले म्हणजे वातावरण दुषित होते. औद्योगिक क्रांतीमुळे अनेक कारखाने निर्माण झाले, त्यामुळे जागेसाठी जंगलतोड झाली, तसेच कारखान्या बाहेर पडणाऱ्या घातक वायुमुळे वातावरणावर प्रतिकूल परिणाम घडून येत आहे. कारखान्यातील कार्बन डाय ऑक्साईड वायु मोठया प्रमाणात बाहेर पडुन पृथ्वीचे तापमान वाढत आहे.

वातावरणात मिसळणाऱ्या अनेक वायुमुळे पृथ्वीच्या भोवती असणारे संरक्षक कवच (ओझोनचा थर) नष्ट होत आहे. जर हे संरक्षक कवच नष्ट झाले तर सुर्यापासून येणारी अतिनील किरणे पृथ्वीवर येतील व या अतिनील किरणामुळे पृथ्वीवरील जीवसृष्टीचा नाश होईल. मानवास त्वचेचा कर्करोग, होईल, मानवाच्या रक्ताभिसरण क्रियेवर विपरीत परिणाम घडून येतील, प्राण्यांना अंधत्व व नपुंसकत्व येईल इ. विध्वंसक कार्य घडून येतील.



### **ध्वनी प्रदुषण**

जो ध्वनी/आवाज बेसुर किंवा कर्कश असतो तो कानाला नकोसा वाटतो अशाप्रकारचा कर्कश आवाज निर्माण करणारी साधने म्हणजे रस्त्यावरील ट्रक, बस, वाहनांची वाहतुक, रेल्वे वाहतुक, विमान वाहतुक, रस्त्यांचे घराचे बांधकाम किंवा दुरुस्ती इ. मोठ मोठे कारखाने, समाजिक कार्यक्रमाच्या ठिकाणी लावलेले लाऊडस्पीकर, फटाक्यांचा आवाज इ.या कर्कश आवाजामुळे वातावरणाचं प्रदुषण सतत वाढत असते व त्याचे समाज जीवनावर भयंकर अनिष्ट परिणाम होतात. आपले कान हवेच्या दाबातील बदल सहजपणे समजू शकतात. आवाज मोजण्याचे एकक डेसिबल आहे. आपले कान जास्तीत जास्त १० डेसिबल पर्यंत बदल सहज समजू शकतात. कर्कश व बेसुर आवाजामुळे शांततेचा भंग होवुन कामात व्यत्यय निर्माण होतो. शारिरीक तसेच मानसिक कामात अडथळे निर्माण होतात. आपण दुसऱ्याशी निटपणे बोलू शकत नाही. आपला राग अनावर होतो. आपल्या कामात चुका होतात, आपली झोप मोड होते. यासर्व गोष्टींचा आपल्या आरोग्यावर अनिष्ट परिणाम होतो. सतत मोठा आवाज ऐकण्याची सवय झाल्यास हळु आवाज ऐकु येत नाही. त्यामुळे बहिरेपणा येतो. भयंकर कर्कश आवाजाचा मनावर प्रचंड आघात होते. एखाद्यावेळी प्रचंड मोठया आवाजाने कानाचे पडदे फुटून कानाला जखमही होते.

### **पर्यावरणाचा समतोल राखण्यासाठी मानवाची भुमिका**

#### **१. प्लॉस्टिक पिशव्याच्या वापरावर बंधने :-**

बाजारात जातांना प्रत्येकाने हातात घेऊनच कापडी पिशवी सोबत न्यावी, प्लॉस्टिकच्या पिशव्यामध्ये सामान स्विकारू नये, पॅकिंगसाठी प्लॉस्टिक ऐवजी कागदाचा वापर करावा.

#### **२. कंपोस्ट खत तयार करणे :-**

घाण कचऱ्यातील विघटनशील पदार्थ वेगळे करून ते खोल खडयात माती, शेण व पाणी यासह दाबल्यास उत्तम प्रतिचे कंपोस्ट खत मानव घरच्या घरी तयार करू शकतात.

#### **३. घरातील व कॉलनीमधील कचऱ्याचे व्यवस्थापन :-**

प्रत्येक घरातून दररोज अनेक वस्तु व पदार्थ निरूपयोगी म्हणुन बाहेर फेकल्या जातात. दुधाच्या पिशव्या, पॅकींगचे डब्बे, कागदाचे तुकडे, वापरा व फेका स्वरूपाच्या वस्तु प्रत्येक घरातून दररोज फेकल्या जातात, अशा टाकऊ वस्तुंची ढिग आपल्या परिसरात इतरत्र न फेकता नगर पालिकेच्या कचरा पेटीत टाकावे म्हणजे आसपासचे वातावरण दुषित होणार नाही.

#### **४. वस्तुचा पुर्नवापर करणे :-**

कचऱ्यात अनेक वस्तु अशा असतात की, त्याचा पुर्नवापर करता येऊ शकतो, अशा वस्तु वेगळया करून त्यांचा पुर्नवापर केल्यास कचऱ्याचे प्रमाण कमी होऊ शकते. उदा. :- कागदाचे पाकीट उलटे करून पुन्हा वापरता येणे, काही टाकाऊ वस्तुपासुन शोभीवंत अशा वस्तु निर्माण करतो येऊ

शकतात, उदा.:- चिंध्यापासुन पायपीस, काचेपासुन आकर्षक शोपीस वगैरे, मुलांच्या पुस्तकांची रद्दी तसेच कोऱ्या शिल्लक पानापासुन रफ वही करणे वगैरे.

#### **५. वृक्षारोपण :-**

आपल्या आजूबाजूच्या परिसरात झाडे लावणे व जगविणे हे कार्य मानवांनी योग्यरितीने केल्यास पर्यावरण संतुलनामध्ये मोठे कार्य होऊ शकते. कारण झाडे हा पर्यावरणाच्या संतुलनाचा सर्वात महत्वाचा घटक आहे. वृक्षतोडीमुळे पर्यावरण विस्कळीत होत आहे. मानवांनी आपल्या शेजारी किंवा कॉलनीच्या ओपन स्पेस मध्ये झाडे लावुन प्रत्येकाने आपले स्वतःचे एक झाड तरी योग्यरित्या वाढवुन दाखवावे अशी स्पर्धा घेतल्यास मानव आपल्या झाडाची काळजी घेवुन आपोआप पर्यावरण संतुलन होण्यास मदत होईल.

#### **६. पाण्याचे नियोजन :-**

आवश्यक तेवढाच दैनंदिन जीवनात पाणी उपयोगात आणावे. अनावश्यक पाणी वापरण्याचे टाळावे. घरातील सांडपाण्यावर आपली फुलबाग फुलवावी, घरातील पाण्याचा थेंबही वाया जाऊ न देता शोषखड्डा करून जलपुर्नभरणीत मदत करावी. घरावरील छताचे पाणी बोअरमध्ये सोडून त्याचेही व्यवस्थापन करावे, अशाप्रकारे पाणी वाचवुन व पाण्याचे योग्य नियोजन मानव योग्यरित्या करू शकते. बोअरजवळ, नदीमध्ये आंघोळी कपडे धुव नये. तसेच जनावरांना नदीवर आंघोळ घालु नये.

#### **७. अनावश्यक मोठे समारंभ टाळणे :-**

माणसाच्या आयुष्यात समारंभाला मोठे स्थान आहे, तरीही समारंभ किती आणि किती मोठे करायचे यावर मर्यादा हवीच. हाच अनावश्यक खर्चाची रक्कम जर अनाथ मुलांच्या वसतीगृहाला दिली तर त्यांचे महिनाभर पोट भरेल, ज्यांना भरपूर खायला आहे, त्यांनाच जेवण अन, ज्यांना आधीच नको इतके कपडे आहेत. त्यांना अहेर हे कोणत्या तर्कशास्त्रात बसते. अशा समारंभासाठी किती विज, किती गॅस, किती लाकडं, किती पाणी, किती पेट्रोल खर्ची पडतं याचा विचार आपण कधी करीत नाही. या गोष्टींना काही प्रमाणात आळा घालुन पर्यावरण संतुलन मानव करू शकतो.

#### **८. प्राण्याचे रक्षण :-**

शाकाहारावरही मनुष्य दिर्घायुषी आणि स्वस्थ जीवन जगू शकतो, मग मांसाहार का? कारण बऱ्याच प्रमाणात प्राणी हे निसर्गाचे संतुलन करत असतात. घरात प्रत्येकाने शाकाहाराचा आग्रह धरला तर बऱ्याच प्रमाणात प्राणी हत्या कमी होऊन निसर्ग संतुलनास मदत होईल.

#### **९. वाहनाचा उपयोग आवश्यक तेवढाच :-**

मानवांनी आपल्या आसपास खरेदी करण्यासाठी तसेच सभेला जाण्याकरीता गाडीचा वापर न करता थोडं पायी चालुन जावे. यामुळे समतोल राखण्यास बरीच मदत होईल व मानवाचा थोडा चालण्याचा व्यायाम होवुन आरोग्यही चांगले राहील किंवा दोन मानव एका ऑफिसमध्ये किंवा एका ठिकाणी

कार्यरत असतील तर दोन स्वतंत्र गाड्या नेण्यापेक्षा एका गाडीवर जावे.

### १०. विविध कार्यक्रम राबविणे :-

आपण विविध कार्यक्रमांच्या माध्यमातून पर्यावरण जागृती करू शकतो.

उदा. वृक्षारोपण करणे, पर्यावरण दिंडी काढणे, पर्यावरणावर निबंध लिहणे, चर्चा करणे, पर्यावरण संतुलन राखण्यासाठी सहकार्य करणे इ.

### निष्कर्ष

- १) पर्यावरण संतुलन आज काळाची गरज आहे.
- २) पर्यावरणाचे पडणारे प्रकार त्या-त्या विभागात महत्वाचे ठरतात.
- ३) आज पर्यावरण संतुलन आज मानवी जीवन वाचवू शकते.
- ४) नैसर्गिक पर्यावरण आज विविध मार्गाने असंतुलित होत आहे.
- ५) सामाजिक पर्यावरण आज उध्वस्त होतांना दिसत आहे व त्याचे दुर्गामी परिणाम होत आहेत.
- ६) संपूर्ण जग आज पर्यावरणाच्या प्रश्नावर गंभीर आहे.

### संदर्भ ग्रंथसूची

- १) पर्यावरण शास्त्र लेखक : प्रा.डॉ.विठ्ठल धारपुरे, पिंपळापुणे अँड कंपनी पब्लिकेशन, नागपुर, प्रकाशन क्रमांक २६६ आवृत्ती जून २००५
- २) आपले पर्यावरण लेखक : डॉ.क्षमा लिमये, विद्या विकास पब्लिशर्स, नागपुर, प्रथम आवृत्ती ५ जून १९९९
- ३) माणूस आणि झाड लेखक : निळू दामले, राज हंस प्रकाशन, पुणे, प्रथम आवृत्ती २००१

७) पर्यावरण संतुलन करण्याकरीता विविध समाज सेवी संस्थांनी आपली कमर कसल्याची दिसुन येईल.

### समारोप

यावरून आपणास लक्षात येते की, पर्यावरण संतुलनात मानवाचा सहभाग फार मोठा आहे. आपण सर्वांनी मिळून पर्यावरणाचा समतोल राखण्यास सहकार्य केले पाहिजे. तसेच निसर्गाचा समतोल अभादित राखण्यासाठी स्वतः पासुन स्वतःच्या घरापासुन सुरुवात केली पाहिजे. स्वतः मानवाने पुढाकार घेवुन आपल्या परिसरातील व्यक्तींना एकत्र करुन एकमेकांसोबत चर्चा घडवुन संवर्धनाविषयी जागृती निर्माण करावी. तसेच पर्यावरण शिक्षणावर भर द्यावा. माझ्या मते, गरज आहे ते केवळ जाणीव जागृती आणि दृष्टीकोन बदलण्याची. वरील सर्व मुद्द्यांवर योग्य भूमिका वळवली तर प्रदुषणाला नक्की आळा बसेल तसेच प्रदुषणमुक्त आणि निरोगी आयुष्य जगण शक्य होईल. अश्याप्रकारे अनेक आव्हाहाने अगदी सहज पेलण्याची क्षमता असली पाहिजे तेव्हाच आपण प्रदुषण मुक्त वातावरण निर्मितीचे नवे आव्हाहन स्विकारुन या वसुंधरेला सुंदर बनविण्याचा निर्धार मनाशी पक्का करायला पाहिजे.

- ४) निसर्गायण (पर्यावरणाचा मूलगामी आणि एकात्म विचार) लेखक : दिलीप कुलकर्णी, राजहंस प्रकाशन पुणे, प्रथम आवृत्ती १९८६
- ५) वेध पर्यावरणाचा : लेखक : निरंजन घाटे, मेहता पब्लिकेशन पुणे, प्रथम आवृत्ती एप्रिल २००१
- ६) पर्यावरण शिक्षण लेखक : डॉ.के.म.भांडारकर, नित्य नुतन प्रकाशन, प्रथम आवृत्ती जानेवारी २००६

## राष्ट्रसंत तुकडोजी महाराजांचा पर्यावरणीय दृष्टिकोन

एस.एम. लांबाडे

स्वा.से.श्री.क.रा. इन्नाणी महाविद्यालय, कारंजा (लाड) जि. वाशिम

### सारांश

प्रस्तुत शोधनिबंधातून राष्ट्रसंत तुकडोजी महाराजांनी मराठी, हिंदी ग्रंथरचनेतून, भजनावलीतून, भजन, किर्तनातून सभोवतीच्या निसर्गाशी, पर्यावरणाशी, मानवी जीवनाशी तर्कनिष्ठ व बुद्धीप्रामाण्यवादी विचारसरणीतून एकरूप होवून समाजाचे विकसन होते असा संदेश दिला आहे. सद्यःस्थितीत शासन पातळीवर पर्यावरणविषयक विविध योजनांची अंमलबजावणी केल्या जात असल्यामुळे हा संदेश आजच्या समाज जिवनाला तितकाच लागू पडतो.

### प्रास्तावना

अनादिकाळापासून निसर्ग आणि मानवामध्ये ऋणानुबंध दिसून येतो. निसर्गाविषयी वाटणारी ओढ ही त्याच्या रक्तातच दिसून येते. म्हणूनच इंदिरा संत म्हणतात –

रक्तामध्ये ओढ मातीची  
मनास मातीचे ओलेपण

निसर्गातील विविध रंग सोहळा, आकाशातील बदलते रंग, वृक्षवेलींचा शांत सहवास, मधुर वायुलहरींमुळे मानवी व्यक्तीमत्वाद्वारे विविध किमया घडविल्या जातात. त्यातूनच पुढे कविमनातील विविध भावना कल्पनेच्या साहाय्याने निसर्ग व मानवातील नाते प्रकट करतात—



चिंब भीजून पावसात  
मन जाऊन बसतं ढगात  
मोहरतात साऱ्या भावना

आठवणींच्या कृष्ण —धवल जगात.

केदार कुबडे यांच्या वरील पंक्तीतून निसर्ग व मानवातील स्नेहबंध दिसतो. मानवासभोवताली असलेले हवा, पाणी, जंगले, जमीन, सूर्यप्रकाश, रात्रीचा अंधार, अन्य जिवजंतू या नैसर्गिक परिसरास पर्यावरण म्हटले जाते. आपले जिवन प्रभावीत करणाऱ्या या सर्व शक्ती पर्यावरणाचे भिन्न आणि अभिन्न अंग आहेत. विविध क्षेत्रामध्ये उत्तुंग भरारी घेऊन भारत देश महासत्ता होण्याची स्वप्ने बाळगत असतांना दुसरीकडे पर्यावरणीय प्रश्नांनी उग्र रूप धारण केले आहे. भारत देशात ३५० ते ४०० वर्षांपूर्वी संत ज्ञानेश्वर, संत

तुकाराम, संत तुकडोजी महाराजांनी पर्यावरण संरक्षण, संतुलनासंबंधी जनजागृतीचे कार्य केले आहे.

संतश्रेष्ठ तुकाराम महाराज लिहीतात—  
वृक्षवल्ली आम्हा सोयरे वनचरे ।  
पक्षीही सुस्वरे आळविति।

### कार्यपद्धती व उपाययोजना

राष्ट्रसंतांनी तर त्यांच्या संपूर्ण आयुष्यात लेखनी भजन, भाषणे व कृतीतून समाजाला ईश्वर विषयक विचारातून शेती विषयक विचारातून, सणउत्सवांच्या माध्यमातून आणि स्वच्छतेच्या मार्गाचा अवलंब करून नैसर्गिक व सांस्कृतिक पर्यावरणीय दृष्टीकोन प्राप्त करून दिला आहे.

वैदर्भीय वाङ्मय मंदिराचा कळस समजल्या जाणाऱ्या त्यांच्या 'ग्रामगीता' या युगग्रंथाची निर्मिती मानवकल्याणाच्या विचारातून झाली आहे. यातील ८ पंचकातून ४१ अध्यायातील ४६७५ ओव्यातून पृथ्वीला स्वर्ग करण्याचा विचार व्यक्त केला आहे. सुलजाम् सुफलाम् भारतासाठी समाज प्रबोधन करून व्यक्तीला असणारे विश्वभान हेच विज्ञान होय, निसर्ग होय असे स्पष्ट करित विज्ञान व अध्यात्माचा संयोग संत तुकडोजी महाराजांनी घडवून आणला. विज्ञान व अध्यात्म्याच्या अनोख्या समन्वयातून जगाला 'निखळ मानवी सत्य' समजावून सांगितलेले आहे. व्यक्ती—समष्टी—विश्वेष्टी आणि परमेष्टी अशा स्वरूपाच्या विज्ञानाच्या प्रवासातून विज्ञानाला अध्यात्माची वेसण घालून विज्ञानाने घडून येणाऱ्या विध्वंसाला प्रतिबंध घालण्यासाठी महत्वाची भूमिका निभावलेली आहे.



आधुनिक भारताचे महास्वप्न पाहणाऱ्या राष्ट्रसंत तुकडोजी महाराजांनी ईश्वरविषयक संकल्पनेतून ईश्वर म्हणजे सत्याचा आत्मसाक्षात्कार, निसर्गतत्वाचे आकलन झालेला कर्तव्यदक्ष जननायक असून तो विश्वव्यापी सर्वव्यापी असल्याची शिकवण देऊन त्याच्या दर्शनातून निसर्गाचे आकलन करण्याची दृष्टी समाजाला दिली आहे. विश्वामध्ये घडणाऱ्या प्रत्येक गोष्टीचा अंधविश्वास न ठेवता तर्कसंगतदृष्टिने, कार्यकारणभाव ओळखून वागणे अपेक्षित असते असे सुचविले आहे. राष्ट्रसंतांनी 'ग्रामगीता'मधून पर्यावरण प्रदूषणावर अप्रत्यक्षपणे लोकांची दृष्टी वळविण्याचा प्रयत्न केला आहे. त्यांनी विविध उदाहरणाद्वारे भूप्रदूषण, जलप्रदूषण, वायुप्रदूषण, ध्वनीप्रदूषण, यासारख्या समस्यांवर प्रकाश टाकलेला आहे.

भूप्रदूषणासंबंधीत राष्ट्रसंतांचा दृष्टिकोन ग्रामशुद्धी, ग्रामस्वच्छतेच्या माध्यमातून व्यक्त होतो ते म्हणतात—

गावाचे मार्ग विष्टेने व्यापले।  
आडकोने घाणींनी भरले।  
ठायी ठायी उकिरडे साचले।  
गाव वेढले गोदरींनी।

अ.१२ ओ.२०

यामधून गावामध्ये सर्वत्र घाण, विष्टांमुळे उकिरडे तयार होऊन गावाला गोदरीचे स्वरूप प्राप्त होऊन जीवजंतूंचा प्रसार होतो आणि अस्वच्छतेमुळे दुषित वातावरण निर्माण होते अशी जाणिव निर्माण करून दिलेली आहे.

तैसेचि करावे चरसंडास।  
मळ दिसोचि न द्यावा कोणास।  
आपल्या मळाची आपणास।  
व्यवस्था लावणे सोयीचे।

अ.१२ ओ.५६

या ओवीमधून रस्त्यावर येणाऱ्या घाणीची योग्य विल्हेवाट लावण्याचे सुचविलेले आहे. तर

डोब साचती, पडती डेरे।  
ठीक करावे मार्गी सारे।  
शौचगृहेहि नव्या प्रकारे।  
निर्मावी सर्वासाठी।

अ.१३ ओ.६८

यामधून नव्या पद्धतीच्या शौचगृहाची निर्मिती करून रस्त्याने साचणाऱ्या डोबऱ्याची व्यवस्था करण्याविषयी सुचविले आहे.

मेली जनावरे कोठेहि नेली।  
गावभरी घाण,मांस हाडे आली।  
ऐसे न व्हाया पाहिजे नेमली।  
जगा उधडण्या—गाडण्याची।

अ.१३ ओ.८०

गावाला घाणीचा त्रास होऊ नये म्हणून मेलेल्या जनावरांची योग्य विल्हेवाट लावण्यासंबंधी यामधून मार्गदर्शन केले आहे

आणि मानवाला सुदृढ आरोग्याची जाणिव निर्माण करून दिली आहे.

गोमय गोमूत्र मिळोनि रात्रंदिस।

कायम होता भूमिचा कस।

पेवे भरती गावागावास।

धान्याची तेव्हा।

‘अ १५ ओ १०’

राष्ट्रसंतांनी या उदाहरणातून जमिनीची पोत कायम ठेवण्यासाठी गाईच्या गोमूत्राचा व शेणाचा सेंद्रीय खताच्या स्वरूपात उपयोग करण्यास सुचविले आहे.

राष्ट्रसंतांनी 'ग्रामधून' संकल्पनेतून संपूर्ण गावाची स्वच्छता सांगून ग्रामवासीयांना पर्यावरणीय समस्यांबाबत नवी दृष्टी दिली आहे.

म्हणोनीच काढली रामधून।

व्हावयासी गावाचे पुनर्निमाण॥

अ.१२ ओ. ४५

अहो। ही निसर्गाची रचना।

समजलीच पाहिजे सर्व जगा॥

अ.१२ ओ. ६१

राष्ट्रसंतांचा हा दृष्टिकोन 'स्वच्छ भारत अभियान' या उपक्रमातून व्यक्त होतांना दिसतो. भारत देशामधील लोकांना स्वच्छ आणि आरोग्यवर्धक वातावरण मिळण्याकरिता मा. पंतप्रधान श्री नरेंद्र मोदी यांनी स्वतः हातामध्ये झाडू घेऊन न गंदगी करेगे, न करणे देगे।

हा मंत्र देऊन संपूर्ण राष्ट्रासाठी जन आंदोलनाचे स्वरूप प्राप्त करून दिले आहे.



या सोबतच सुदृढ आरोग्यासंबंधीत समस्या सोडविण्यासाठी 'ग्राम स्वच्छता अभियान' या कार्यक्रमाची सुरुवात झाल्यापासून २००० पेक्षा अधिक ग्रामपंचायतींनी महाराष्ट्रात 'ओपन मलविसर्जन मुक्त' स्थिती प्राप्त केली आहे. याद्वारे वाढत्या रोगराईपासून मानवाचे रक्षण होईल. पर्यावरणीय समस्या ह्या बाह्य निसर्गातील असल्या तरी तिचं मुळ आपल्या मनोवृत्तीत, आपल्या विचारात असल्यामुळे या मनोवृत्तीमध्ये बदल घडवून आणण्यासाठी राष्ट्रसंतांच्या विचारसरणीचा उपयोग होत आहे. भारत या शेतीप्रधान

देशामध्ये रासायनिक औषधे व खतांचा बेसुमार वापर केल्या जात आहे. त्यामुळे दिवसेंदिवस जमिनीचा कस नष्ट होत असून रासायनिक घटकांचा प्रतिकूल परिणाम मानवाच्या आरोग्यावर होऊन हानी पोहोचत आहे. अशा वेळी संत तुकडोजी महाराजांनी सेंद्रिय खताद्वारे जमिनीचा कस कायम ठेवण्यासंबंधी सुचविलेल्या उपायाची अंमलबजावणी करून भूप्रदूषणास आळा घालण्यासाठी प्रयत्न करता येतील. राष्ट्रसंतांच्या 'रामधून' संकल्पनेचा उपयोग नाशिक जिल्हयातील दिंडोरी तालुक्यामध्ये राबविण्यास तेथील गटविकास अधिकारी राहुल रोकडे यांनी सुरुवात केली. त्यांनी घरी शौचालय नसलेल्या २३ कुटूंबप्रमुखांसमवेत बैठक घेवून त्यांचे मतपरिवर्तन करण्याचा प्रयत्न केला आहे.

भूप्रदूषणविषयक योजनेमध्ये महाराष्ट्रात जैविक वैद्यकीय कचरा १९९८, महाराष्ट्र विघटनशील व अविघटनशील कचरा नियंत्रण अधिनियम २००६ आणि महाराष्ट्र प्लॅस्टिक उत्पादन नियम २००६ यासारख्या योजना राबविल्या जात आहे.

पर्यावरणातील सर्वात महत्वाचा घटक म्हणजे 'पाणी'. तुकडोजी महाराजांनी उपलब्ध पाण्याचा योग्य वापर करून, पूर्णवापर करून भविष्यामध्ये उद्भवणाऱ्या पाणी टंचाईचा प्रश्न, कमी पडणारा पाऊस या विषयीची दूरदृष्टी विविध ओव्यांच्या आधारे समाजाला दिलेली आहे.

घराभोवती बाग केली ।

सांडपाण्यावरती झाडे वाढली ।

फळाफुलांची रोपे,वेली ।

भाजीपाला नित्याचा ।

अ. १३ ओ. १३

यामधून घरातील सांडपाण्याचा पुर्णवापर करून परसबागेचे नियोजन करून फळफुले, भाजीपाल्याचे उत्पादन घेता येते. याद्वारे उपलब्ध साधनसामग्रीचा मर्यादित वापर करून निसर्गसंतुलनाविषयक जाणीवजागृती केलेली आहे.

नदी तळ्याकाठीची स्वच्छता ।

तेथे पार,घाट आदिंची व्यवस्था ।

उत्पादन वाढवाया तत्वता ।

उपयोग घ्यावा जलाचा ।

अ. १३ ओ. ६९.

याओवीतून पाण्याचे योग्य उपयोजन करून जलप्रदूषण रोखण्यास प्रवृत्त केले आहे.

जलप्रदूषणासंबंधीत ऊपाय योजना म्हणून सद्यःस्थितीत धान्य व भाजीपाला धुतलेले पाणी झाडासाठी उपयोगात आणणे, शोषखड्डे तयार करून रोपवाटीकेसाठी उपयोग करणे, पिण्याच्या पाण्यात जंतूनाशक पावडर टाकणे, पाण्याची बचत करणे याविषयी जनजागृती करून जलप्रदूषण रोखण्यास मदत करता येते. शासकीय स्तरावर राष्ट्रीय नदी कृती योजना, राष्ट्रीय सरोवर संवर्धन योजना, नदी खोऱ्याच्या क्षेत्रामध्ये उद्योगधंदे उभारण्याबाबत धोरण, सामायिक सांडपाणी संयंत्रणा

योजना,सरदार सरोवर प्रकल्प अशा विविध योजना राबविल्या जात आहे.



मा. पंतप्रधान नरेंद्रजी मोदी यांनी गंगा नदीचे शुद्धीकरण करण्याचे योजिले आहे व समाजासमोर आवाहन ठेवले आहे. याच आवाहानातून प्रेरीत होवून गावागावात शेततळे बांधणे व पाणवठे तयार करून पाणी टंचाईचा प्रश्न सोडविण्याचा प्रयत्न होत असल्याचे निदर्शनात येत आहे. नदी-नाल्यांचे श्रमदानातून स्वच्छता करण्याचे उपक्रम राबविले जात आहे.

राष्ट्रसंतांनी 'ग्रामगीते'तून सुदृढ आरोग्यासाठी सकाळच्या स्वच्छ हवेचे महत्व पुढील ओवीतून प्रतिपादीत केलेले आहे.

पहाट वारा चढवि रक्तास ।

लाली रोगप्रतिकारक ।

अ.१४ ओ. ४३

यामधून रस्त्याच्या दोन्ही बाजूला झाडे लावून मध्ये कचरा टाकण्यासाठी नियोजन करण्यासंबंधीत सुचविले आहे.

सडकांचिया दुतर्फा छान ।

सर्वांनी करावे वृक्षारोपण ।

ढोले ठेवावे मधामधातून ।

कचरा त्यात टाकावया ॥

अ.१३ ओ ७१.

या ओवीतून वृक्षारोपनाच्या माध्यमातून हवा प्रदूषण रोखण्याविषयी सूचना दिल्या आहेत.

याच विचारसरणीतून हवा प्रदूषणावर नियंत्रण ठेवण्यासाठी उपाययोजना म्हणून परिणामाची जाणीव करून देणे, लोकसंख्या वाढीवर नियंत्रण ठेवणे, फटाक्यांचा वापर टाळणे, शुकण्यासाठी भांडे किंवा वाहत्या गटारींचा वापर करणे, कारखाने हे शहर व गावापासून दूर ठेवून त्यातील चिमण्यांची उंची जास्त ठेवणे, वाहणांचे टयूनिंग करणे आणि यासंबंधीत कायदे व नियमांचे पालन करणे यासारख्या उपायांमधून हवा प्रदूषण रोखण्यास मदत करता येते. या करिता सरकारणे राष्ट्रीय हरित सेना, मुंबई शहराचा कृती आराखडा, झोनिंग अॅटलास यासारख्या योजना कार्यान्वीत केलेल्या आहे.

संत तुकडोजी महाराजांनी विविध सण उत्सव आणि परंपरेच्या माध्यमातून समारंभाप्रसंगी वाजविल्या जाणाऱ्या विविध वाद्यांमुळे ध्वनीप्रदूषण होऊन गावाच्या शांत जिवनाला बाधा निर्माण होण्याविषयीचे विचार विविध ओव्यामधून समाजासमोर सादर केले आहे.

मग राहिले वाजंत्री बाजे ।  
त्यातही ताल,स्वर अंदाजे ।  
कसे तरी लावीती साजे ।  
लग्न मौज म्हणूनिया ।

अ.१२ ओ. ३६

कर्णे शंख,घंटया,नगारे ।  
एकचि गोंधळ करिती सारे ।  
बेताल होता कोटूनि भरे ।  
ताल जिवनी गावाच्या ।

अ.१२ ओ ३७.

अशाप्रकारे होणाऱ्या ध्वनीप्रदूषणावर उपाय योजना म्हणून धार्मिक व सामाजिक कार्यक्रमाप्रसंगी वाद्य व ध्वनी प्रक्षेपकावर नियंत्रण ठेवणे, घरामध्ये हळु आवाजात बोलणे, कमी आवाज करणारी उपकरणे व मशीनींचा वापर, गाडीचा हॉर्न कर्करा नसावा आणि आवश्यक तेव्हाच वापरावा. या विषयक नियम व मर्यादेचे पालन करून ध्वनीप्रदूषणास आळा घालण्यास मदत होते.

शासकिय पातळीवर जिल्हा पर्यावरण समिती, इको सेंसिटीव्ह क्षेत्र, पर्यावरण माहिती प्रणाली केंद्र, 'एन्व्हिस', पर्यावरण सेवा योजना तयार करून अमलात आणल्या जात असून त्याद्वारे पर्यावरण संतुलन व संरक्षण राखल्या जात आहे.

### समारोप

अशाप्रकारे राष्ट्रसंत तुकडोजी महाराजांनी नैसर्गिक संपत्तीचे महत्व ओळखून पर्यावरण संतुलन व संरक्षणासाठी मानवाची भूमिका ही ईश्वरविषयक आरोग्यविषयक जाणिव जागृतीतून,प्राण्यांच्या मलमूत्राच्या उपयोजनातून जमीनीचा कस कायम ठेवण्या संबंधीत तसेच शेतीला प्राधान्य देऊन आदर्श ग्रामनिर्मितीद्वारे नैसर्गिक साधनसंपत्तीचा उपयोग करण्यासंबंधी जनजागृती केली आहेत. राष्ट्रसंतांनी विज्ञानाला अध्यात्माची वेसण घालून ग्रामजनांना विधायक इहवादी जीवदृष्टी बहाल केली. त्यामुळे साहजिकच मनुष्याच्या विध्वंसक प्रवृत्तीला आळा बसून पर्यावरण संरक्षण राखण्यास मदत होते. व्यक्तिला असणारे विश्वभान हेच विज्ञान आहे, हाच निसर्ग आहे असे स्पष्ट करित राष्ट्रसंतांनी विज्ञान व अध्यात्माचा संयोग घडवून आणला. आजही राष्ट्रसंतांचे भक्त भजनीमंडळांद्वारा विदर्भ, मराठवाडा प्रदेशामध्ये विधायक

विचार घोषघरी पसरवतांना दिसतात. व्यसनमुक्ती, वृक्षसंगोपन, ग्रामसफाई, ग्रामरक्षण, ग्रामशिक्षण, लोकसंख्या नियंत्रण, ग्रामआरोग्य आदि विषयांना सोप्या शब्दातून समाजाच्या मनःपटलावर बिंबवित आहे.

राष्ट्रसंतांनी त्यांच्या विचारातून व कृतिंतून जी पर्यावरण विषयक जनजागृती केली आहे, त्या अनुषंगाने विचार करून मनुष्याचे पर्यावरण संरक्षण व संतुलन अबाधित ठेवण्यासाठी कर्तव्यदक्ष राहणे हे कर्तव्य आहे. त्याकरिता सजीवांना आपल्या जीवनसंघर्षासाठी आणि उत्क्रांतीसाठी सभोवतालच्या पर्यावरणशी जुळवून घ्यावे लागेल. अथवा अनुकूल बदल करावे लागतील कारण आपणही याच पर्यावरणाचा एक भाग असल्यामुळे पर्यावरणासोबतच आपण हळुहळू नकळत आपलाही विनाश करत आहोत. जर पृथ्वीवरील नैसर्गिक संसाधन संपली किंवा दुषित झाली तर आपण दुसऱ्या ग्रहावर राहायला जाऊ शकत नाही. म्हणूनच आपण आपल्या पृथ्वीची काळजी घेतली पाहिजे. करिता वृक्षतोड थांबविणे जास्तीत जास्त झाडे लावणे व संगोपण करणे व खाजगी वाहनापेक्षा बस, रेल्वेच्या वापरावर भर देणे, कारखानदारांनी, पर्यावरणविषयक नियमांचे पालन करणे, वाढत्या लोकसंख्येवर नियंत्रण ठेवणे, शेतीसाठी रासायनिक औषधे व खतांचा अनावश्यक वापर टाळून सेंद्रिय खतांचा वापर करणे, सौर उर्जेचा वापर करणे, इंधनाचा जपून वापर करणे यासारख्या उपायांचा अवलंब केल्यास पृथ्वीवरील सर्व देश या देशातील सर्व लोक पर्यावरणाबाबत जागरूक होतील आणि आपली पृथ्वी पुन्हा एकदा सुजलाम् सुफलाम् होईल.. शेवटी एवढेच म्हणावेसे वाटते की,

पाने, फुले वाहूया पत्री  
निसर्गाशी चला करू या मैत्री  
जीवनाची मिळेल खात्री  
पर्यावरणाची शिरी असेल छत्री

### निष्कर्ष

१. माणूस हा निसर्गाची निर्मिती आहे.
२. पर्यावरण संरक्षणाची संपूर्ण जबाबदारी मानवाची आहे.
३. राष्ट्रसंतांनी समाजाला वैज्ञानिक दृष्टिकोन दिलेला आहे.
४. राष्ट्रसंतांनी ग्रामगीतेद्वारे वृक्षसंगोपन, लोकसंख्या नियंत्रणाबाबत जनजागृती केली आहे.
५. राष्ट्रसंतांनी ग्रामगीतेद्वारे पर्यावरणबाबत प्रबोधनाचे कार्य केले आहे.
६. राष्ट्रसंतांच्या पुरोगामी विचार सरणीचे दर्शन घडते.

**संदर्भ**

१. अतुल देऊळगांवकर, 'बखर पर्यावरणाची आणि विवेकी पर्यावरणवाद्याची', मौज प्रकाशन, मुंबई,
२. कैदार कुबडे, 'पाऊस आणि तुझी आठवण', मराठी माती डॉटकॉम, प्र.संपा. मंडळ, ६ जून २०१६.
३. डॉ. मनोहर रोकडे, 'राष्ट्रसंत तुकडोजी महाराज यांची काव्यदृष्टी साहित्यशक्ती' श्री गुरुदेव प्रकाशन, गुरुकुंज मोझरी
४. डॉ. मनोहर रोकडे, 'राष्ट्रसंत तुकडोजी महाराज ग्रामगीतासार', डायमंड पब्लिकेशन, पुणे.
५. डॉ. सुभाष सावरकर 'राष्ट्रसंत तुकडोजी जीवन व कार्य', मराठी जनसाहित्य परिषद अमरावती, प्रथमावृत्ती २००७.
६. दिलीप कुलकर्णी, 'निसर्गायण' पर्यावरणाचा मूलगामी आणि एकात्म विकास', राजहंस प्रकाशन, पुणे., ऑक्टो. २००९.
७. दिलीप कुलकर्णी, 'बदलू या जीवनशैली : भाग २', राजहंस प्रकाशन, पुणे. जाने. २०१४.
८. नागोराव सा. येवतीकर, 'पर्यावरण आणि मानवी जीवन', 'सामना', ५ जून २०१७.
९. मराठी विश्वकोश खंड २, २०१५.
१०. राष्ट्रसंत तुकडोजी महाराज 'ग्रामगीता' श्री गुरुदेव ग्रामगीता प्रतिष्ठान, गुरुकुंज आश्रम, नवमावृत्ती १९९१.
११. स्व.सुदाम सावरकर, 'जीवनयोगी खंड ८', मराठी जनसाहित्यपरिषद, अमरावती, द्वितीय आवृत्ती, २०१०.



## भारतीय समाजातील अंधश्रद्धा व वैज्ञानिक दृष्टीकोन

डी.एन. राठोड

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### सारांश

आजचे युग वैज्ञानिक युग आहे. अशायुगात वावरतांना आपल्या नजरेत काय येते व त्या मागील वैज्ञानिक भूमिका काय ते विचारात घेणे अत्यावश्यक आहे. अशा स्थितीत आपला दृष्टीकोन हा वैचारिक, विज्ञाननिष्ठ व आधुनिक जाणिवानी परिपूर्ण असणे तेवढेच आवश्यक आहे. मात्र नेमका आपण दैववादी, पूरणमतवादी बनतो, व त्यामुळे आधुनिक युगात आपल्या जाणिवा प्रगट होण्याऐवजी मागासलेल्या आहेत का? याचा विचार करणे अत्यावश्यक आहे. व भारतीय समाजातील अंधश्रद्धा निर्मूलन करणे प्रस्तुत शोधनिबंध लिहतांना याच विचाराचा शोध घेण्याचा प्रस्तुत शोधनिबंध लेखकाचा मानस आहे.

**मुख्य शब्द:**— विज्ञान, वैज्ञानिक, आधुनिक युग, प्रगती, समता, जीवन जाणिवा.

### प्रस्तावना

भारतीय मानवी समाजाचा इतिहास हा सिंधू संस्कृतीपासून सुरु होतो. इ.स.पूर्व २००० वर्ष सिंधू संस्कृतीला विकसित नगररूप प्राप्त झाले होते. इ.स.पूर्व ३२५० वर्षापूर्वी आर्य भारतात आले आणि खऱ्या अर्थाने भारतीय समाजात वर्णव्यवस्था अस्तित्वात आली. सिंधूसंस्कृतीपासून इहवादी दृष्टीकोनाची पेरणी सुरु झाली. धर्म, ईश्वर, परलोक यांच्याशी संबंधित सर्वच बंधने, रूढी, विषमता आणि अंधश्रद्धा यांना इहवादी परंपरेने धुडकावून लावले. बुद्धीवाद समता, स्वातंत्र्य, बंधुता आणि सामाजिक न्याय या मूल्यवस्थेचे प्रस्तापना हे आपले ध्येय मानले. आणि मानवी जीवनातील प्रश्न सोडविण्याचे सर्व शक्यता नाकारल्या गेल्या. समाजात 'जैसे थे' च्या अंगनीकूडात कायम कोंडून ठेवले. भारतीय विज्ञाननिष्ठ दृष्टीकोनाने धर्मसंस्था; ईश्वर; आत्मा आणि कर्मकांड ही धार्मिक प्रवृत्ती मूळापासून रद्द ठरविली. सर्व विषमतेचे उगम नष्ट केले. जीवनध्येयाला माणसाच्या बुद्धीवादापाशी समतेपाशी आणि सामाजिक न्यायापाशी आणून उभे केले. इहवाद म्हणजे Secular विचार होय. जगासंबंधी केलेला विचार होय. इहवादात धर्मवादाचा विचार येत नाही. धर्मवादात धर्म, मोक्ष, आत्मा, परमात्मा, परलोक आणि पुनर्जन्म अध्यात्म आणि अंतर्ज्ञान यासंबंधी विचार येतो. इहवादात मनुष्यजन्म, जीवन, आणि त्यांचा समस्या अर्थ आणि काम, अनुभवजन्य ज्ञानप्रवृत्तीपर जीवन यांचा विचार केला जातो. असे भारतीय विज्ञान कोश सांगतो.

श्रद्धा म्हणजे संस्कृत भाषेतील श्रत् (म्हणजे सत्य) या नामाला धा (म्हणजे ठेवणे) हा धातू जोडून श्रद्धा हा शब्द तयार होतो. त्याचा व्युत्पत्तीनुसार अर्थ असा होतो की ज्यामध्ये सत्य ठवलेले असते ती श्रद्धा होय.

श्रद्धा या संकल्पनेत लौकीक व्यवहारात, आदर, निष्ठा पूज्यभाव, बांधीलकी, इनामीपणा, भरवसा, विश्वास असा अर्थ मराठी विश्वकोशात येतो.

श्रद्धा म्हणजे उत्कृष्टपणे कृतिशील झालेली विवकेशक्ती असे म.गो. रानडे म्हणतात. उत्कटता याचा अर्थ भावनाप्रधानता व्यक्तीची मानसबुद्धी व भावना यातून ती बनते. श्रद्धेचा दुसरा भाग म्हणजे कृतीशीलता हेच श्रद्धेचे सामर्थ्यस्थान असते. दाभोळकर म्हणतात की नैतिकता ही श्रद्धेमधील सर्वात महत्त्वाची गोष्ट आहे. ही नैतिकता माणसाचा मूल्यविवके उन्नत करते.

अंधश्रद्धा म्हणजे कार्यकारण भावाचा अभाव व शोषणाचा प्रभाव होय. अंधश्रद्धेमुळे शोषण होते. या शोषणाला संबंधित व्यक्ती पवित्र मानतात. शोषणाला पावित्र्य बहाल करतात ही गोष्ट दाभोळकरांना भयावह वाटते. ही मानसिक गुलामगिरी हे अंधश्रद्धेचे खरे चिंताजनक रूप आहे.

जागतिकरणामुळे जगात क्रांती पण आपल्या देशातील अंधश्रद्धाचे बुरुज अजूनही कायम आहे. महाराष्ट्रात अनेक समाजसुधारकांनी स्त्री सबलीकरण, सिंचन, शिक्षण, शेती या संदर्भात विचार मांडले त्यांनी अंधश्रद्धेवर प्रहार केले मात्र राजकीय नेते हे समाजसुधारकांचे दाखले देतात पण सुधारकांच्या अंधश्रद्धा या विषयावर मौन बाळगतात. जागतिकरणाने संपूर्ण देशात परिवर्तन झाले. पण अंधश्रद्धेचे बुरुजाला सुरुंग लावून उध्वस्त करणे जमले नाही. श्रद्धा या शब्दाचा संबंध धर्माशी निगडित आहे. त्यामुळे याची चर्चा अंधश्रद्धेशी होते. माझ्या धर्मश्रद्धेला तर धक्का लागत नाही ना? म्हणून व्यक्ति संभ्रमित होतो. श्रद्धा—अंधश्रद्धेच्या द्वंद नीट समजून घेतले पाहिजे. अंधश्रद्धेमध्ये केवळ अज्ञान नसते. तसे असते तर विज्ञानाच्या प्रसाराबरोबर अंधश्रद्धा नाहीशी झाली असती. अंधश्रद्धा म्हणजे केवळ कार्यकारण भावाचा अभाव व शोषणाचा प्रभाव होय. अंधश्रद्धामुळे शोषण होत. ज्याचे शोषण होते नाही या शोषणाला पवित्र मानतो शोधाला पावित्र्य बहाल करणारी ही मानसिक गुलामगिरी हे अंधश्रद्धेचे खरे चिंतजनक रूप आहे.

सत्य काय आहे? इष्ट व नैतिक काय आहे? या प्रश्नांची उत्तरे जगातील सर्व धर्मांनी दिली आहे. पृथ्वी सूर्याभोवती



फिरते हे सत्य गॉलिलिओने सिध्द केले. हे सत्य धर्माने सांगितलेल्या सत्यापेक्षा वेगळे होते. वैज्ञानिक सत्य सांगितल्याबरोबर ब्रुनोला जिवंत जाळण्यात आले. गॉलिलिओने माफी मागितली तरी त्याला आजन्म कारावासाची शिक्षा देण्यात आली. नरेद्र दाभोळकर म्हणतात की, मानवाने श्रध्दा तपासल्या म्हणून हा खऱ्या अर्थाने माणूस बनला. समाज आणि संस्कृती उभी राहिली. या श्रध्दा तपासतांना अटळपणे धर्मश्रध्दा ठरवून पूर्ण माघार घ्यावी लागली होती.

देवावर श्रध्दा असणारे लोक आपल्या मुलाला पोलिओचा डोस न देता ठेवत नाही या संदर्भात कार्यकारणभाव जेथे थेट प्रस्थापित होतो तेथे श्रध्देचे क्षेत्र कालबाह्य ठरते. चांगले मानवी वर्तन कोणते? याबाबत धर्माने दिलेल्या निर्णयातून निर्माण होणाऱ्या अंधश्रध्दा दुर करणे कठीण होऊन बसते. हिंदु धर्मातील श्रध्दा अंधश्रध्दा यांचा संबंध न्याय-अन्याय असा जोडला जातो ख्रिश्चन धर्मात धर्मश्रध्देचा संघर्ष विज्ञानाशी होता. त्यामुळे विज्ञानाच्या रोखठोक पुराव्यापुढे धर्मश्रध्देच्या नावाने माघार घ्यावी लागली. धर्मश्रध्देच्या नावाने अन्यायाचे समर्थन करणे व स्वतःचे हितसंबंध जोपासतो या सर्व शोषण करणाऱ्या अंधश्रध्दाच होत्या.

मुलीचे लग्न मासिकपाळी प्राप्त होण्यापूर्वी करावे. स्त्रीयांनी पतीलाच परमेश्वर मानावे चुल आणि मुल हेच आपले कार्यक्षेत्र समजावे विद्या ग्रह करू नये. या सर्व गोष्टी प्रस्थापित समाजात रुढ होत्या तरीपण भारतीय स्त्रीयांना यासर्व गोष्टीचे योग्य इष्ट आणि पवित्र ठरवून आचरण्यात आणल्या ही मानसिक गुलामगिरीचे उत्तम असा नमुना आहे. असे दाभोळकराचे मत आहे.

अंधश्रध्देचे आणखी दुसरे उदाहरण देता येते ते पुढील प्रमाणे. एखादे माणूस हातवारे करू लागले गूढ शाप असे काही बोलू लागला की, त्यांच्या अंगात आले; अंगात आले म्हणजे एखाद्या देवतेचा किंवा भुताखेताचा शरिरात संचार होणे असे समजतात भूत अंगात आल्यास त्यास झपाटणे असे म्हणतात. भगत देवऋषी किंवा ग्रामदेवताचा पुरोहित यांच्या अंगात त्या त्या देवतांचा संचार होतो. इच्छित गोष्ट मिळाल्यावर मी भूतयोनीतून मुक्त होईल असे तो सांगतो.

बहुधा अंगात येणारी दैवते ही शूद्रच असतात मात्र नवरात्रीत अष्टमीच्या दिवशी महालक्ष्मीच्या पुढे घागरी फुकतांना एखादी बाई घुमू लागली की, तिच्या अंगात महालक्ष्मी आली असे म्हणतात. मग तिचे जमलेली मंडळी तिला हळद कूंकु लावून व तिला महालक्ष्मी बनवून आपआपले प्रश्न विचारतात. हे प्रकारसुध्दा अंधश्रध्देत येतात.

जागतिकरणाच्या सुरुवातीच्या काळात श्रध्दांना धक्के बसले आणि त्यातील श्रध्दा-अंधश्रध्दाच आहेत हे मान्य आले. आज मुलीचे लग्न देवाशी लावणे ही प्रथा संपुष्टात आली. गतिमान समाजजीवनामुळे काही अंधश्रध्दा टिकल्या नाहीत. मासिक पाळीत स्त्री अपवित्र अस्पृश्य मानली जात होती. मात्र आधुनिक काळात स्त्री मोठ्या प्रमाणात नोकऱ्या करतात

दर महिन्याला स्त्रियांना अस्पृश्य समजून त्यांना चार दिवसाची नैतिक रजा देणे शक्य नव्हते. त्यामुळे मासिक पाळीत स्त्री अस्पृश्य आहे ही अंधश्रध्दा गळून पडली. तरीही सुशिक्षित स्त्रिया मासिक पाळीत स्वतःला अपवित्र मानतात. देवपूजा व मंगलकार्य यापासून त्या दूर राहतात. माणने ही सुध्दा अंधश्रध्दाच आहे. एक व्यक्ती दुसऱ्या व्यक्तीपेक्षा श्रेष्ठ अथवा कनिष्ठ आहे हे सुध्दा वैज्ञानिक चूक आहे जातीमध्ये रोटीबंदी, स्पर्शबंदी व बेटीबंदी पाळल्या जात होत्या. अलिकडच्या काळात गतिमान मानवी जीवनात रोटीबंदी स्पर्शबंदी पाळणे सर्वत्र अशक्य झाले आहे. बेटीबंदी व जातीयता पाळणे आज तरी सुरु असले तरी एक दिवस ते सुध्दा वैज्ञानिक दृष्टीकोनातून नष्ट होणार आहे.

आजही समाजात अंधश्रध्दा कायम आहे-याविषयी वेध घेण्याचा प्रयत्न नरेद्र दाभोळकर आणि श्याममानव यांनी केला आहे. प्राचीन काळात चांगल्या पिकांवर टोळधाड व लुटारुच्या आक्रमणामुळे माणसे अगतिक होत होती. त्यामुळे ती माणसे अंधश्रध्दाचा आसरा शोधित होती. परंतु ते आज आस्तित्वात नाही. जागतिकरणामुळे समाजातील अर्थगणित बदले आहे. रोजगार उध्वस्त झाला माणसे सैरभैर झाले माणूस परमेश्वराकडे त्यांच्या अवतराकडे वळत हे आपल्या त्यांच्या एकंदरीत वर्तनातून दिसून येते.

### कार्यपध्दती

१) भारतातील रूढ अंधश्रध्दा यांचा मानवीजीवनावर होणारा परिणाम अभ्यासासाठी नरेद्र दाभोळकर अंधश्रध्दा निर्मूलनाच्या कार्यामध्ये अग्रस्थानी असलेले. समाज सुधारक -म.गो.रानडे, यशवंत मनोहर, विजयावाड, पंडित महादेवशास्त्री जोशी, प्रदिप पाटील, दिगंबर आळसी या सारख्या अभ्यासकांच्या साहित्याचा अभ्यास करून भारतातील अंधश्रध्देचा मानवी जीवनावर होणारा परिणाम अभ्यासणे सर्वसामान्य जनतेचा बळी जावू नये म्हणून त्यामागील वैज्ञानिक दृष्टीकोण लोकासमोर मांडणे.

मानवी जीवनावर होणारा परिणाम अभ्यासणे व अंधश्रध्दामुळे सर्वसामान्य माणसाचा बळीजाऊ नये म्हणून व त्यामागील वैज्ञानिक दृष्टीकोण मांडणे.

अंधश्रध्दा कायम असण्याचे दुसरे कारण म्हणजे अस्थिरता-प्राचीन काळात मोठे दुष्काळ पडत. जीवन अस्थिर होई. आजारांची साथी येत. संपूर्ण गावच्या गाव उध्वस्त व्हायचे. कॉलरा नष्ट व्हावा म्हणून मरी आईचा गाढा ओढला जात असे. पाऊस पडावा म्हणून देवाच्या गाभाऱ्यात पाणी कोंडला जाई अशावेळेस माणसे अंधश्रध्देच्या आहारी जाणे स्वाभाविक होते. आलिकडच्या काळात दुष्काळावर मात करता येते. अन्नाची टंचाई जाणवत नाही. तरीही समाजात कमालीची अस्थिरता निर्माण होत आहे. उदा. राजकारण,सिनेमा, क्रिकेट यामध्ये कमालीची अस्थिरता आली आहे. राजकीय सत्ता अचानकपणे संपुष्टात येते. गाजलेले

अभिनैत्याचे चित्रपट धडाधड कोसळतात अव्वल दर्जाचा खेळडूचा फॉर्म हरवितो. या सगळ्या अस्थिरतेतून उत्तर शोधण्यासाठी अंधश्रद्धेचा आधार घेतला जातो.

भ्रष्टाचारातून कमाविलेला पैसा अनैतिक मार्गाचा पाईप होतो. अपराधीपणाची भावना त्या व्यक्तीमध्ये डोकावते उपाय म्हणून तो अंधश्रद्धेच्या उपायाकडे जातो.

अतृप्त कामनाची पूर्ती —आधुनिक जगात उपभोगाच्या अक्षरशः अगणित शक्यता निर्माण झाल्या आहेत. उपभोगवादी संस्कृतीकडे माणूस वळला आहे. आपल्या अतृप्त इच्छा पूर्ण करण्यासाठी व्यक्ती पूजा, व्रतवैकल्ये, कर्मकांडे याकडे वळत असते.

आपल्या देशांत वेगवेगळ्या आजारांची संख्या प्रचंड वाढत चालली आहे. या आजारावरचा खर्च परवडणारा नाही सरकार देखील औषधोपचारातून आपले अंग काढून घेत आहे. अशावेळेस समाजातील माणूस जादूटोणा छूमंतर बावा देवऋषी याकडे तो आचाराला जातो. इथे अंधश्रद्धा फार मोठ्या प्रमाणात असते.

जागतिकरणाच्या परिस्थितीमुळे समाजात अनेक प्रकारचे गंभीर ताणतणाव निर्माण झाले आहे. यातून येणाऱ्या स्त्रीयांचे मन मोडून निघते. यमनाचा कोणी आसरा नसतो अशावेळी सिया, प्रवचने, सत्संग, सहवास, सेवा, माया याचा आधार घेतात. जागतिकरणामध्ये मार्केटिंगला अनन्यसाधारण महत्वाचे आहे. मार्केटिंगसाठी तंत्रज्ञानाची मदत घेतलीजाते तुमचा गुरु साक्षात ब्रम्हाडांतून उतरत आहे हे आभासी नेपथ्य माणसाला विचारशक्ती कुंढीत करते. बाबाची एक ठिकाणाची पूजा दुसऱ्या परद्यावर दाखवली जाते. भक्त लोक त्यात सहभागी होतात. विविध वाहिण्यावर दिवस रात्र बाबा—बुवा, वास्तुशास्त्र, भविष्य यांचा रातीब घातेला जातो. समाजात जागतिकरणामुळे शिक्षणातून चिकित्सक व्यक्ती तयार होण्याऐवजी रोजगारक्षम व्यक्ती घडविली जात आहे. शिक्षणाने डोळसपणा यावा हे अभिप्रेत आहे परंतु व्यक्तीचे शिक्षण हे फक्त रोजगार निर्मितीसाठी चालू आहे. त्यामुळे अचिकित्सक वृत्तीमुळे अंधश्रद्धेचे ते बळी ठरत आहेत.

व्यक्तिला कोणत्या ना कोणत्या स्वरूपात सांस्कृतिकदृष्ट्या समूहात व्यक्त होण्याची गरज असते. पूर्वी ग्रामीण व शहरी भागात संयुक्त कुटुंबपध्दती अस्तित्वात होती. ती आज मात्र नाही. शहरी संस्कृती तर माणसांला दूर लोटणारी आहे. त्यामुळे कोणतीही पूजा, धार्मिक कर्मकांड, महाराज, स्वामी यांच्यासमोर मोठ्या समुदायात लोक सहभागी होऊन आपली सांस्कृतिकदृष्ट्या व्यक्त होणाची गरज भागवितात.

जागतिकरणात, अंधश्रद्धा तशाच कायम आहेत त्यांची इतरहीकारणे आहेत जसे पैसा, सता, प्रसारमाध्यमे, गुंड, यांची दहशत यामुळेही अंधश्रद्धा पध्दतीशीरपणे वाढविली जात आहे. यासाठी व्यावसायीक यंत्रणा उभी केली जात आहे. विज्ञानाच्या भाषेतही फसवणूक केली जात आहे. उदा.चुंबकीय गादीमुळे गादी निर्मात्याने लाखो रुपये कमविले.

जागतिकरणामुळे एक प्रकारची उदासिनता मानसाला येते मग तो अध्यात्म व विज्ञान यांची सांगड घालणाऱ्या तथाकथित बाबा देवी यांचा नांदी लागतो. अंधश्रद्धा पसरविण्यासाठी धार्मिक भाषेचा उपयोग केला जातो. प्रत्येकाच्या मानसिकतेत आत्मा, परमात्मा, परब्रम्हमोक्ष उक्ती या शब्दांचे मायाजाल पसरविले जात आहेत. चमत्कार घडू शकतात यावर हिंदुधर्मियांचा विश्वास आहे. नियती, विधिलिखित, दैव नशिब प्रारब्ध संचित या कल्पनांच्या पगंडा भारतीयांच्या मनावर आहे. या सर्व बाबी धर्माशी संबंधित आहेत. अंधश्रद्धा निर्मुलन केवळ वैज्ञानिक दृष्टीकोनामुळेच संपुष्टात येते असे नाही. वैज्ञानिक दृष्टीकोणामुळे आत्मविश्वास बळकट होईल. मनोव्यापार निर्भय होईल. आज वैज्ञानिक आणि जागतिकरणाचे समर्थक आहे. पण ते अंधश्रद्धेचे वर्तन करतात अंधश्रद्धेपासून मानवी जीवनाची सुटका करून घेण्यासाठी नरेंद्र दाभोळकर पुढील विचार माडतांना तो म्हणतो की, माणूस असण्याचे प्रमुख लक्षण आहे. अतार्किक विचार व त्याप्रमाणे केलेले वर्तन हा व्यक्तीने केलेला स्वतःचा मोठा पराभव ठरेल यांचे भाव हवे. दुसरा विचार व्यक्तकरतांना नरेंद्र दाभोळकर म्हणतात की. अशास्त्रीय पध्दतीने विचार करून वर्तन करणे अयोग्य असले तरी तो स्वतःचा हक्क आहे असे म्हणू शकते. परंतु असे अंधश्रद्धाचे वर्तन ज्यावेळी शोषणाला आदार देते तेथे कायदयाची गरज असते. उघडपणे शोषण करणाऱ्या अंधश्रद्धांच्या विरोधात कायदा करणे अतिशय महत्वाचे आहे. अंधश्रद्धांच्या विरोधात सतत थेट प्रभावी समाज कुटुंब, शाळा, महाविद्यालय, समाजात करावयास हवे. हे प्रबोधन विज्ञानप्रसार नाही यांचे सामाजिक भान हवे. या प्रबोधनात प्रत्यक्ष व अप्रत्यक्ष धर्माची चिकित्सा होते म्हणून या प्रबोधनाला विरोध होतो यांचे भान व मर्यादा समजून घ्यायला हवे.

अवैज्ञानिक विचाराचे संस्कार लहानपणापासून अंतर्मनात खोलवर झालेले असतात. या अंतर्मनात प्रवेश करण्यासाठी केवळ वैचारिक प्रबोधन करीत नाही तर निर्भय विचार करावा लागतो. उदा.अमावस्येच्या रात्री १२ वाजता स्मशानात जाऊन भूत कल्पनेला सुरंग लावावा लागतो. जन्मकुंडल्याची जाहिर होळी करावी. संतोषीमाताच्या पत्रकांची तुकडेकरून पायदळी तुडवावे.

शिक्षणात चिकित्सक व संशोधनात्मक अंग अतिशय कमजोर आहे धर्मात सांगितलेल्या सर्व गोष्टी सर्वश्रेष्ठ मानल्या जाते. विद्यार्थी आपली जात श्रेष्ठ व कनिष्ठ मानतो यश हे परमेस्वरांच्या हाती असते असे मानले जाते. मुहूर्तपुजन, पूर्णजन्म इत्यादी अवैज्ञानिक कल्पना आजच्या शिक्षकांचे आहेत. त्याच कल्पना विद्यार्थ्यांमध्ये निर्माण होतात. आजची कुटुंबवस्थाचे ही पुरुषप्रधान आहे. कुटुंबातील लोकशाहीकरण झाले पाहिजे. कुटुंबातील सर्व व्यक्तीचा विचारांना सन्मान मिळाला पाहिजे. समाजात व्यक्तीचे दैवतीकरण करण्यात आले आहे. संबोधित व्यक्तीच्या अभिमानाची जागा अस्मितेने

अहंकाराने व अधिनिवेशाने घेतली आहे. समाज दिवसेंदिवस संवेदनशील व हिंसक बनत चालत आहे. व्यक्ति विचार व घटना यांचे दैवतीकरण करणारी प्रवृत्ती बदलली पाहिजे.

### **धर्मचिकित्सा—भारतीय समाजाचा इतिहास**

वेदकाळापासून धर्माच्या प्रभावात भारतीय समाजातील लोकांना आपआपल्या वर्णा जातीला परमेश्वरालाच परमध्यय मानले पूर्वकर्माच्या सिध्दांताने प्राप्त स्थितीला पवित्र स्थितीला मानायला शिकविले. चार्वाक, बुध्दाने धार्मिक मूलतत्त्वविरोधी मूलगामी क्रांती केली. त्यांची आंदालने इहवादी दृष्टीकोनातूनच होती. काही मूलतत्त्ववाद्यांनी सिंधु संस्कृतीची मूळ उपटून टाकण्याचे काम केले. विषमता भारतीय समाजात रुजवात झाली. पण हा मूलतत्त्ववाद धर्म, जाती, वर्ण, ईश्वर, अध्यात्म यांचा कडवा पुरस्कार करते तर या देशात इहवाद—बहुजन हिताय—बहुजन सुखाय Revolution आणि Antithesis च्यारुपात कार्यकारीत आलेला आहे. द्राविड, नाग, समता आणि सामाजिकन्याय असे भारतीय इहवादाचे मूळ रूप आहे.

इंग्रजी राजवटीत विज्ञाननिष्ठ दृष्टीकोणाला अतिशय पोषक वातावरण तयार झाले. त्याला शह देण्यासाठी राजकीय स्वातंत्र्यचळवळीला जाणीवपूर्वक खतपाणी दिल्या गेले. मूलतत्त्ववादाचा प्रस्थापनेचे प्रयत्न इतिहासात पुष्यमित्रशूंग शंकराचार्य पेशवाई या मार्गाने सुरु आहे. सत्यशोधक चळवळ, मार्क्सवादी चळवळ यासाख्या अनेक चळवळी या प्रकाशमार्गावरून इहवाद स्वतःला समृद्ध करित निघालेला आहे. भारतीय संविधानात अस्पृशता, जाती, लिंगभेद, वर्ण, यांना आणि पर्यायाने धार्मिक मूलतत्त्ववादात संविधानाने मूठमाती दिलेली आहे. भारतीय सांविधानात Secular आशय देण्याचा प्रयत्न बाबासाहेब आंबेडकरांनी दिला आहे. ५१ व्या कलमानुसार धार्मिक, भाषिक, प्रादेशिक किंवा वर्गीय भेदाच्या पलिकडे जाऊन भारतातील सर्व लोकांमध्ये बंधुभाव वाढीला लावणे, विज्ञानदृष्टीकोन मानवतावाद, सुधारणावाद यांचा विकास करणे यावर या कलमाचा भर आहे. भारतीय सांविधान विज्ञाननिष्ठ आणि सुधारणावादाचा पुरस्कार करणारे हेच संविधान लोकमानसातील धर्म शीणबल होत जावा. संविधान मुद्धा इहवाद मानते. भारतीय संविधान हा Secular संस्कृतीचा जाहीरनामा होय. असे त्यामुळेच म्हणता येते. भारतातील हिंदू, मुस्लिम आणि ख्रिश्चन या तिनही प्रमुख धर्मांचे लोक मनाने वेगवेगळ्या मूलतत्त्वादाशी बांधलेले आहेत. या सर्वांना त्यांच्या धर्माच्या श्रद्धांना विज्ञाननिष्ठ दृष्टीकोणात बांधावे अशी इच्छा संविधान संस्कृतीची आहे. धार्मिक मूलतत्त्ववाद जोपर्यंत समाजात आहे तोपर्यंत सर्वांना एकत्रित बांधता येत नाही. वर्णाचा आर्थिक, संस्कृतीची सामाजिक दारिद्र्याचा अंधश्रद्धाचा लोकसंख्येचा स्फोटाचा, परस्परद्वेषाचा, राष्ट्रीयतेचा अभावाचा या सर्व गोष्टींचा विघातक गोष्टीचा संबंध धार्मिक मूलतत्त्ववादाशी पोचतो या

विघातक गोष्टीची वाढ होत आहे. त्याला कारण आपण विज्ञाननिष्ठ दृष्टीकोणाकडे पाठफिरवली आहे. धर्ममाणसांना भूतकाळाच्या साखळीत बांधतांना धर्माची मापे ठरलेली आहेत. समाजकारण, राजकारण, अर्थकारण, शिक्षण असे काही चालत नाही. निरर्थक मुक्तीपेक्षा अनेक पातळीवर ऐहिक मुक्तिची गरज समाजाला आहे. धर्म स्त्री—पुरुषांना अधिकृत गुलामगिरीचा पुरस्कार करतात.

जागतिकरणाच्या काळात धर्म सर्व घटीतांच्या सर्व प्रकारचा अविष्कारासाठी शब्दशः अब्जावधी रुपयाचा व्यक्साय होतो. लोकांची धर्मभावना जास्तीत जास्त उद्दीपत करून व ती भावना तेवत ठेवून त्याद्वारे सत्तेकडे वाटचाल करावयास मिळावी. असा सोयीचा व सुखाचा राजकीय शॉर्टकट निर्माण झाला आहे. नगरसेवकांचा सरपंचाचा कार्यक्रम मतदारांना तीर्थयात्रा घडविणे हा आहे. राजकीय पुढारी सर्व प्रकारच्या धार्मिक विधी सोहळ्यांना सढळ हाताने मदत करतात धर्मभिमानाला जास्तीत जास्त आणि धर्मविचाराला ओहोटी असे आजच्या महाराष्ट्राचे स्वरूप झालेले आहे. हे घडविण्यासाठी अंधश्रद्धेचा उपयोग केला जात आहे. महाराष्ट्रातील समाजसुधारकांनी समाज मानवकेंद्री केला त्यामध्ये सुधारणा घडवून आणले. परलोकवादी धर्म इहवादी केला ईश्वरकेंद्री धर्म हा मानव केंद्री धर्म केला. आज जागतिकरणाच्या काळात धर्माचे भ्रष्टीकरण साधणीकरण होण्याचे भय वाढत आहे. त्यामुळे विधायक धर्माचिकित्सा हा महत्वाचा मुद्दा मानावयास हवा असे दाभोळकरांचे मत आहे. मानवी समाजजीवनात धर्मश्रद्धेचा लोप झाल्यामुळे स्वार्थीपणा व भ्रष्टाचार वाढला असे सनतनी लोकांचे म्हणणे आहे एकंदर समाजव्यवस्थेचे निमण केलेल्या गुंतागुंतीच्या परिस्थिती जोपासल्या. विसाव्या शतकांच्या शेवटच्या पर्वात काही धार्मिक मूलतत्त्ववादी प्रवृत्ती तर विज्ञाननिष्ठ व समाजवादी आशयाचे व माणुसकीचा प्रतिष्ठपनेच्या हाती देणारे संविधान संस्कृती नाकाराला निघालेले आहे. one man one valu ही क्रांतीकारी तरतूद या अंधश्रद्धेला (मूलतत्त्ववादी प्रवृत्तीला) मोडीत काढते संपुर्ण मानवांच्या मानसशास्त्रातून धर्म आणि ईश्वर हद्दपार केल्याशिवाय इथे सर्वकष मानवी संस्कृतीचा प्रारंभ करता येत नाही हाच विज्ञाननिष्ठ दृष्टीकोणचा ठाम निर्धार आहे. त्याशिवाय भारतीय समाजातील अंधश्रद्धा कमी होणार नाही.

### **समारोप**

एकंदर मानवी जीवनात श्रद्धा अंधश्रद्धा संबंधी बऱ्याच प्रमाणात समज गैरसमज आहेत समाजजीवनात जेथे श्रद्धा संपते तिथे खऱ्याअर्थाने अंधश्रद्धा येते. मानवी जीवात धर्मश्रद्धेचा लोप झाल्याने समाजात भ्रष्टाचार स्वार्थीपणा बोकळला आहे. असे सनातनी प्रवृत्तीना वाटते धर्मबंधने सैल झाल्यामुळे अनितीला धरबंध नाही. हा कार्यकारणभावाला अर्थ राहत नाही. भ्रष्टाचारात बुडालेले लोक परंपरागत धर्मातील

रूढ आचार पाळण्यात सर्वात पुढे असतात. ही खेदजनक वस्तुस्थिती सर्वत्र व सर्व धर्मात दिसते. खऱ्या अर्थाने नैतिक धर्माशी त्यांचे काही देणे घेणे नसते. म्हणून एका बाजूला धर्माचा उदंड उदो उदो त्याचवेळेस दुसरीकडे भ्रष्टाचारत बुडालेला समाज असे चित्र आपल्याला दिसते.

समाजव्यवस्थेने निर्माण केलेल्या गुंतागुंतीच्या परिस्थितीत जोपासलेल्या मनोवृत्तीत आहेत. धर्माचे आधारे व्यक्ति आणि समाज अधिक नितीमान करणे हे ज्यांना करावयाचे असेल त्यांना तसे स्वातंत्र्य भारताच्या घटनेनेच दिले आहे. परंतु प्रत्यक्षातील आचरणाच्या कसोटीवरच त्यांचे मूल्यमापन कठोर करावयास हवे. जागतिकीरणाच्या काळात अंधश्रद्धांशी संघर्ष करून नीतिमान समाजाची निर्मिती व्हावी यासाठी धर्मनिरपेक्षक विज्ञाननिष्ठ, मानवतावादी विचारसरणी व मूल्यभावना त्यांचा प्रसार होऊन समाजाची मान्यता मिळणे हीच आजच्या काळाची आवश्यकता आहे. भारतीय समाजातील अंधश्रद्धाविषयीचा विचार व वैज्ञानिक दृष्टीकोण मी या सदर शोध निबंधात मांडला आहे.

### निष्कर्ष

- १) श्रद्धा (faith) या संकल्पनेतून विश्वास, निष्ठा मनुष्याच्या जीवन त्यासंबंधी समस्या, अर्थ, काम अनुभवजन्य ज्ञानप्रवृत्तीवर जीवन यांचा विचार केल्या जातो.
- २) अंधश्रद्धा या संकल्पनेत मूलतत्त्ववाद धर्म, ईश्वर, परलोक विषमता, आत्मा, परमात्मा या संबंधीचा विचार यामध्ये येतो.
- ३) श्रद्धा हा शब्द धर्म संस्थेशी निगडीत आहे. यामुळे त्याची चर्चा अंधश्रद्धेशी होते.
- ४) अंधश्रद्धा म्हणजे कार्यकारण भावाचा अभाव व शोषणाचा प्रभाव होय. अंधश्रद्धेमुळे शोषण होते. ज्यांचे शोषण होते. तोही या शोषणाला पावित्र मानतो. शोषणाला पावित्र्य बहाल करणारी ही मानसिक गुलामगिरी हे अंधश्रद्धेचे खरे चिंताजनक रूप आहे.
- ५) जागतिकीरणाच्या सुरुवातीच्या काळात श्रद्धांना धक्के बसले आणि त्यातील श्रद्धा —अंधश्रद्धाच आहेत हे मान्य झाले.
- ६) भारतीय समाजातील अंधश्रद्धा निर्मूलनासाठी विज्ञाननिष्ठ दृष्टीकोण ही काळाची गरज झाली आहे.

### संदर्भ ग्रंथसूची

१. संपा.पंडित महादेवशास्त्री जोशी : भारतीय संस्कृतीकोष, अनमोल प्रकाशन, पुणे प्र.खंड
२. विजया वाड : शामा—श्रद्धा : मराठी विश्वकोश खंड १८ प्रकाशन, महाराष्ट्र राज्य मराठी विश्वकोश निर्मिती मंडळ प्रभादेवी, मुंबई. प्र.आ.१५ ऑगस्ट २००९, पृष्ठ १,५,९ ते ६०.

३. यशवंत मनोहर : युगसाक्षी साहित्य संपा —प्रा चंद्रकांत नगराळे, श्रेयस प्रकारान, वरोरा चंद्रपूर प्र.आ.२००१ पृ. ३६५ते ३७०.
४. संपादक, प्रदीप पाटील — अंधश्रद्धा निर्मूलन वार्तापत्र वर्ष दहावे—अंक पहिला —२००० विशाल ऑफसेट प्रिंटर्स, सांगली.
५. दिगंबर म. आळसी : श्रद्धा—अंधश्रद्धा : आत्मोन्नती दै. देशोन्नता —२५ जानेवारी —२०१८ पान न.३.

## बालगृहातील किशोरवयीन मुले—मुलींच्या बौद्धिक गुणांकाचे तुलनात्मक अध्ययन

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### सारांश

या संशोधनाचा उद्देश्य बालगृहातील किशोरवयीन मुले—मुलींच्या बौद्धिक गुणांकाचे तुलनात्मक अध्ययन. या संशोधनामध्ये ५० मुले आणि ५० मुलींची निवड विषयाच्या रूपाने वयोगटाच्या आधारावर करण्यात आली होती त्यामध्ये १२ ते १८ वयोगटातील किशोरवयीन मुला—मुलींची निवड करण्यात आली होती. नमुन्याची निवड करणसाठी उपलब्ध नमुना पध्दती चा उपयोग करून बालगृहातील १०० किशोरवयीन मुले आणि मुलींची निवड करणत आली होती. या संशोधनात अंकांच एकत्रिकरणासाठी संशोधकाने अलेक्झांडर पास अलॉग बुद्धिमापन कसोटी चा वापर करण्यात आला होता. अंकांच्या विश्लेषणाकरीता 'टी' परिक्षणाद्वारे बालगृहातील किशोरवयीन मुले आणि मुलींच्या बौद्धिक गुणांकाची तुलनेचे विश्लेषण करण्यात आले. सांख्यिकीय विश्लेषणावरून असा निष्कर्ष प्राप्त झाला की, बालगृहातील किशोरवयीन मुले—मुलींच्या बौद्धिक गुणांकाची तुलना केली असता महत्वपूर्ण स्तरावर अंतर असल्याचा निष्कर्ष समोर आला. मुलांच्या तुलनेत मुलींमध्ये बौद्धिक गुणांक जास्त असल्याचे दिसून आले.

### प्रस्तावना

राज्यात एकूण १०३० बालगृहे आहेत. राज्य शासन एकतर स्वतःहून किंवा कोणत्याही बालकल्याण संस्थेला मान्यता किंवा प्रमाणपत्र देवून या अधिनियमाच्या कलम ३४ खाली विनिर्दिष्टरीतीने, प्रत्येक जिल्ह्यात किंवा जिल्ह्याच्यागटामध्ये देखभाल व संरक्षणाची गरज असलेल्या मुलांसाठी बालगृहाची उभारणी करण्यात आली आहे. त्यामध्ये राहणारे मुलं हे १८ वर्षांपर्यंतच ठेवण्यात येते आणि प्रत्येक बालगृहामध्ये बालचिकित्सालयाची व्यवस्था करण्यात येते. शिक्षण, आरोग्य, इत्यादीची काळजी घेतली जाते. बालगृहेगार, निराधार आणि आर्थिक परिस्थितीने कमकुवत असलेल्या घराची मुले यांना बालसुधारगृहात ठेवून शैक्षणिक सोई उपलब्ध करून देण्यात येतात. परंतु ह्या सोई ज्या प्रमाणात देण्यात येत आहे त्याची गती ही फार मंद आहे. या गृहात बालकांना दुसऱ्या दिवशी आदेश मिळण्यासाठी मंडळापुढे किंवा समितीपुढे सादर करण्यात येईपर्यंत बालकाला स्विकारण्यात गृहाचा अधिकारी प्राधिकृत व बांधील असतो.

मुलाचे पाय पाळण्यात दिसतात असे आपण म्हणतो, मूल मोठेपणी कसल्या योग्यतेची होईल याचा अंदाज त्याच्या बालपणी येऊ शकतो असा अर्थ म्हणणाऱ्याला अभिप्रेत असतो. अलौकिक कार्य करून दाखविणाऱ्या प्रसिद्ध लोकांच्या बाल जीवनात त्यांच्या भावी अलौकीकतेची सूचक चिन्हे दिसतात. असा पुरावा काही लोकांच्या बाबतीत मिळाला असल्याचे आढळून येते. आद्य श्रीमद् शंकराचार्यांनी वयाच्या केवळ तिसऱ्या वर्षी वेदाध्यनाला प्रारंभ केला व ३०—३२ वर्षांच्या आयुष्यात वैदिक धर्माची पताका भारताच्या सर्व दिशांमध्ये फडकविली. ज्ञानेश्वरांनी वयाच्या सोळाव्या वर्षी गीतेचे महान तत्वज्ञान ज्ञानेश्वरी ग्रंथातून जगाला विशद करून

सांगितले. जॉन स्टुअर्ट मिल वयाच्या तिसऱ्या वर्षी ग्रीक भाषा शिकू शकला व सातव्या वर्षी त्याने प्लेटोच्या तत्वज्ञानाचे अध्ययन केले. तो तत्वज्ञानी, तर्कपंडित व अर्थशास्त्रज्ञ म्हणून प्रसिद्धीस आला. ही उदाहरणे केवळ अलौकीक लोकांची झाली. परंतु सर्वसामान्य तीव्र व मंद बुद्धीच्या लोकांच्या कर्तृत्वाची कल्पनाही त्यांच्या बाल जीवनावरून येते असे बुद्धिमापनाच्या परिणामांवरून आढळून आले आहे.

१९२१ मध्ये टर्मने १००० तीव्र बुद्धीच्या मुलांच्या अभ्यासाला प्रारंभ केला. या मुलांचे बुद्धी गुणांक १३० ते २०० च्या दरम्यान होते. या मुलांच्या जीवनाचा अभ्यास १९५९ पर्यंत करण्यात आला. त्यावरून असे दिसून आले की, बालपणाची त्यांची बौद्धिक पातळी कायम होती. ह्या व्यक्तींचे सामाजिक व शैक्षणिक जीवन त्यांच्या बौद्धिक पातळीला अनुकूल असेच आढळून आले. एकंदरित असे म्हणता येईल की, त्यांच्या बुद्धी परिक्षणावरून त्यांच्या जीवनासंबंधी ज्या अपेक्षा करण्यासारख्या होत्या त्या त्यांनी पूर्ण केल्या होत्या. याचाच अर्थ असा की, बुद्धिमापनातून आढळून येणारी बौद्धिक पातळी बहुतांशी स्थिर असते अर्थात हा पुरावा अप्रत्यक्ष स्वरूपाचा झाला.

बुद्धी परिक्षणावरून असे आढळून येते की, सामान्यतः तीव्र बुद्धीची मुले नेहमीच तीव्र बुद्धीची आढळून येतात व मंद बुद्धीची मुले नेहमी मंद बुद्धीची आढळून येतात. एक वर्षाच्या अंतराने मुलांना बुद्धी परीक्षा देण्यात आल्या तर त्यांच्या बुद्धी गुणांकात काहीच फरक नसल्याचे दिसून आले. उदा. एखाद्या पाच वर्ष मुलाच्या वयाचे मानसिक वयही पाच वर्षांचे असेल तर सहा वर्षांच्या वयात त्याचे मानसिक वयदेखील सहा वर्ष आढळून येण्याची शक्यता जास्त असते. ह्या प्रकारे त्याचा बुद्धी गुणांक वाढत्या वयामुळे न बदलता कायम राहते.

पहिल्या व दुसऱ्या परिक्षणात बराच कालावधी गेला असेल तर बुद्धी गुणांकात थोडाबहुत फरक पडल्याचे आढळून येते. काहींच्या बाबतीत हे फरक अनियमित स्वरूपाचे चढउतार दर्शविणारे असतात. तर कहींचा बुद्धी गुणांक वाढत्या वयानुसार सातत्याने थोडा थोडा वाढत जातो किंवा कमी कमी होत जातो.

बुद्धी गुणांकात कमाने थोडी वाढ होत जाण्याचे एक कारण मुलाला बुद्धी परीक्षांची सवय होत असल्याने त्याला त्या परीक्षांचे तंत्र थोडेसे कळू लागते हे असू शकेल. त्याचप्रमाणे निरनिराळ्या वयोमानाच्या पातळीवर निरनिराळ्या बुद्धी परीक्षांचा उपयोग केला जात असल्यामुळेही बुद्धी गुणांकात थोडाबहुत फरक पडणे आवश्यक आहे.

### कार्यपध्दती

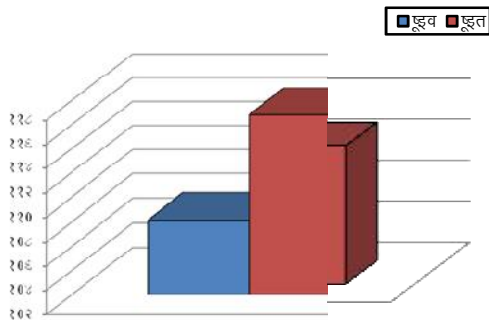
या संशोधनामध्ये ५० मुले आणि ५० मुलींची निवड विषयाच्या रूपाने वयोगटाच्या आधारावर करण्यात आली होती

**सारणी क्र.१: बालगृहातील मुले आणि मुलींची बौद्धिक गुणांकाची तुलना दर्शविणारी सारणी**

Variable	Group	Mean	SD	SE	MD	Ot	df	Tt
बौद्धिक गुणांक	मुले	108.10	20.82	4.25	8.68	2.04	98	1.98
	मुली	116.78	21.72					

(स्वाधिनता मात्रा ९८ व ०.०५ सार्थकता स्तरावरील सारणी टी मूल्य १.९८)

उपरोक्त सारणी क्र-१ मध्ये बालगृहातील मुले आणि मुलींच्या बौद्धिक गुणांकाची तुलना दर्शविलेली आहे, सारणी वरून असे निदर्शनास येते की, मुलांच्या बौद्धिक गुणांकाचे मध्यमान (१०८.१०) एवढे आहे आणि मुलींचे मध्यमान (११६.७८) एवढे आहे. तर मुले आणि मुलींच्या मध्यमानातील अंतर (८.६८) एवढे आहे, मुले आणि मुलींचे गणिती टी मूल्य पाहिले असता (२.०४) एवढे प्राप्त झाले जे स्वाधिनता मात्रा (९८) सारणी 'टी' (१.९८) मुल्यापेक्षा जास्त आहे. वरील सांख्यिकीय विश्लेषणा वरून असा निष्कर्ष निघतो की, बालगृहातील मुले आणि मुलींच्या बौद्धिक गुणांकाच्या मध्यमाना नुसार फरक आहे आणि हा फरक सार्थक फरक आहे.



**आलेख क्र.१: बालगृहातील मुले आणि मुलींची बौद्धिक गुणांकाच्या मध्यमानाची तुलना दर्शविणारा आलेख**

त्यामध्ये १२ ते १८ वयोगटातील किशोरवयीन मुला—मुलींची निवड करण्यात आली होती. नमुन्याची निवड करणसाठी उपलब्ध नमुना पध्दती चा उपयोग करून बालगृहातील १०० किशोरवयीन मुले आणि मुलींची निवड करणत आली होती. या संशोधनात अंकांच एकत्रिकरणासाठी संशोधकाने अलेक्झांडर पास अलॉग बुद्धिमापन कसोटी चा वापर करण्यात आला होता. अंकांच्या विश्लेषणाकरीता 'टी' परिक्षणाद्वारे बालगृहातील किशोरवयीन मुले आणि मुलींच्या बौद्धिक गुणांकाची तुलनेचे विश्लेषण करण्यात आले.

### अंकांचे विश्लेषण

अंकांच्या विश्लेषणाकरीता 'टी' परिक्षणाद्वारे बालगृहातील किशोरवयीन मुले आणि मुलींच्या बौद्धिक गुणांकाची तुलनेचे विश्लेषण करण्यात आले.

### निष्कर्ष व सूचना

सांख्यिकीय विश्लेषणावरून असा निष्कर्ष प्राप्त झाला की, बालगृहातील किशोरवीन मुले—मुलींच्या बौद्धिक गुणांकाची तुलना केली असता महत्वपूर्ण स्तरावर अंतर असल्याचा निष्कर्ष समोर आला. मुलांच्या तुलनेत मुलींमध्ये बौद्धिक गुणांक जास्त असल्याचे दिसून आले. या संशोधनाच्या आधारावर संशोधकर्ता अशा सुचना करतो की, किशोरवीन मुले ही वाढती अशांततेत असतात, याच अवस्थेला आपण संवेगाची अवस्था असेही म्हणतो. भावनावशतः आणि स्वयं केंद्रीत वृत्ती हे या अवस्थेचे विशेष सांगता येते. ही मुले राष्ट्राचे भावी आधार स्तंभ आहेत. त्यांना आपण उद्याच्या उज्वल भवितव्याचे वारसदार समजतो, त्यांची शारीरिक मानसिक व बौद्धिक वाढ बरोबर होत आहे किंवा नाही या गोष्टींवर सतत लक्ष ठेवणे प्रत्येक पालकाचे कर्तव्य आहे. बालकांचे उज्वल भवितव्याबाबत त्यांच्या पालकांना जबाबदार ठरविण्यात येते. मुलांच्या आयुष्यातील पहिली काही वर्षे अत्यंत महत्वाचे असतात, या काळात त्यांच्यावर जे संस्कार घडतात ते त्यांच्या भावी आयुष्यात कायम राहतात. ज्या मुलांवर पहिले पासुनच वाईट संस्कार झाले तर ते निश्चितच पुढे समाजविघातक कृत्ये करतील व गुन्हेगारीस प्रवृत्त होतील. बालगृहातील किशोरवीन मुला—मुलींचा बौद्धिक गुणांक वाढविण्याकरीता मुलांची प्रत्येक महिन्याला बुद्धिमापण चाचणी घेणे किंवा मुलांना कोडी सोडविणकरीता देण्यात यावे. बालगृहातील किशोरवीन मुला—मुलींसाठी खेळ, क्रीडा

व मनोरंजनाची साधने उपलब्ध करून देण्यात यावी ज्यामुळे मुलांचे शारीरिक, मानसिक आणि सामाजिक स्वास्थ्य हे चांगले राहिल. बालगृहातील किशोरवीन मुला—मुलींचे

मानसिक आणि शारीरिक संतुलन राखण्यासाठी व त्यांचे आरोग्य सुदृढ राहावे या करिता त्यांना रोज योगासनाचे धडे देण्यात यावे.

### संदर्भ ग्रंथ सूची

1. आहुजा राम व आहुजा, मुकेश. (१९९८). विवेचनात्मक अपराधशास्त्र, प्रथम संस्करण, नई दिल्ली: रावत पब्लिकेशन. पृ. क्र. ११७.
2. पाठक, पी. डी. (१९९०). शिक्षा मनोविज्ञान, आगरा: विनोद पुस्तक मंदिर.
3. शर्मा, एन. पी. (२००५). शिक्षा में शारीरिक शिक्षा, नई दिल्ली: खेल साहित्य केन्द्र.
4. शर्मा, सुनिता. (२००८). खेलो के मनो—सामाजिक आधार, नई दिल्ली: रजत प्रकाशन.
5. Bostani, Mehdi and Saiiri, Abdulmir (2011). Comparison emotional intelligence and mental health between athletic and non-athletic students. Procedia - Social and Behavioral Sciences.30.
6. Daramola, O. M. et. al. (2010). The Comparison Of Intelligence Quotients Of Atopic And Nonatopic Children In Ibadan, Nigeria. Indian Journal of Dermatology. 55 (3).
7. Kornilova, T. V. et. al. (2009). Subjective Evaluation Of Intelligence And Academic Self –Concept Predict Academic Achievement: Evidence From A Selective Student Population. Learning and Individual Differences. 19 (4).
8. Singh, Navdeep and Singh, Agyajit. (2012). Emotional Intelligence Of The Adolescents In Relation To Their Self-Concept. Indian Journal of Positive Psychology. 3 (2).



## कवी नीलकृष्ण देशपांडे यांच्या 'पापण्यांचे काठ ओले' कवितासंग्रहातील वेदना आणि सौंदर्य

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### प्रस्तावना

यवतमाळ जिल्ह्यातील पण माहूरगडाच्या पायथ्याशी वसलेल्या पोहंडूळ (ता. पुसद) गावचे, मराठी रसिकांना परिचित असलेले नाव म्हणजे कवी नीलकृष्ण देशपांडे. त्यांची कविता जीवनाचे गाणे गाणारी असून वेदनेला सहजपणे स्वीकारून उत्कटपणे आपल्या कवितेत मांडणारी आहे. मुळात शेतीत रमणारा, मातीचे गायन करणारा हा कवी. " विदर्भातील प्रतिभासंपन्न कवी नीलकृष्ण देशपांडे हे नामवंताच्या मालिकेत जाऊन बसले आहेत. विदर्भ साहित्य संमेलनांपासून अखिल भारतीय मराठी साहित्य संमेलनापर्यंत त्यांची कविता रसिकांशी हृदयसंवाद करित आहे." या गौरवपूर्ण शब्दात समीक्षक डॉ. गोविंद देशपांडे यांनी त्यांची करून दिलेली ओळख लक्षणीय आहे.

समृद्ध भावविश्वाचे दर्शन घडविणारा 'दिंडी' हा नीलकृष्ण देशपांडे यांचा ईश्वर प्रकाशन, पोहंडूळने प्रकाशित केलेला पहिला कविता संग्रह. या संग्रहाचे चांगले स्वागत झाले. 'पापण्यांचे काठ ओले' हा ईश्वर प्रकाशनाने प्रकाशित केलेला त्यांचा महत्त्वाचा कविता संग्रह. त्यांच्या कविता सातत्याने महाराष्ट्रातील विविध नियतकालिकांमधून रसिकांच्या भेटीला येत राहिल्या, अजूनही त्यांचे लेखन सुरु आहे. अलिकडेच त्यांचा नवा कवितासंग्रह 'लावण्याचे लालस लेणे' प्रकाशित झाला आहे. परंतु इतके विपुल आणि गुणवत्तापूर्ण कविता लेखन करणारे नीलकृष्ण देशपांडे यांच्या कवितेची समीक्षा मात्र झाली नाही. म्हणून प्रस्तुत शोधनिबंधामध्ये त्यांच्या 'पापण्यांचे काठ ओले' या संग्रहातील कवितांचा विचार करायचा आहे.

### 'पापण्यांचे काठ ओले' मधील वेदना आणि सौंदर्य

'मनोभूमीत अंकुरणाच्या चिरंजीव वेदनेस' कवीने हा संग्रह अर्पण केला आहे. अशाप्रकारे अर्पण पत्रिकेवरूनच या कवितांमधील वेदना, त्यातील सौंदर्य वाचकाला आपल्याकडे आकृष्ट करून वाचनाचे आवाहन करते. 'दुःख चिरंजीव माझे' या पहिल्याच कवितेमध्ये ते लिहितात....

जन्मलो मी एवढ्याचसाठी इथे की

ऋण काही फेडण्याचे राहिले

शाप होता वेदनेचा जो मिळाला

सुख ही मज पेलता येथे न आले (पृ. ५)

आपल्या वाट्याला आलेले आयुष्य जसे आहे तसे स्वीकारून भावनांचा डाव मांडणारी ही कविता, आयुष्य म्हणजे एक शोधयात्रा असून सुख मागे उरत नाही, ही खंत व्यक्त करताना 'मृगजळ' या कवितेत ते म्हणतात

नकोसे जरी हे वेध हे जीवघेणे

उरी वेदनांचे कल्लोळ जागे

फुलासारखे सुख हातात घेता

निखारेच होउन उरतात मागे. (पृ. ८)

ह्या वेदनेचे विविध पैलूही कवी प्रकट करतात, ते मुळातून वाचण्यासारखे आहे. मातृत्वाची 'चाहूल'ही ते अगदी सहजपणाने व्यक्त करतात. हे त्यांच्या प्रतिभेचे वैशिष्ट्य म्हणता येईल. हा सृजनाचा अनुभव मोठा विलोभनीय झाला आहे. 'थांब उद्याचे माऊली, तीर्थ पायाचे घेईतो असा मातृत्वाचा गौरव...' मर्दकरांनी ज्याप्रकारे केला आहे. त्याच तरल उत्कटतेने कवीने मातृत्वाची 'चाहूल' साकारली आहे.

साहीन वेदना आणि

मातृत्व सुखाच्या वेणा

आतुर स्वागतासाठी

प्राणांचा काळीजमेणा (पृ. १२)

मातृत्वसुखासाठी वेदनेला मिठी मारण्याची मातेची आतुरता सहजपणे मांडताना ते लिहितात,

मी जन्मगर्भ नाळेला

बांधून घेतले आता

हे चिरंतनाचे नाते

मी असे उद्याची माता (पृ. १२)

जीवन जगताना पडलेल्या प्रश्नांची उत्तरे शोधण्यासाठी आयुष्य हरवले आहे, असे म्हणून मागे वळून पाहता सारी दारे बंद झाल्याची, उत्तर न मिळाल्याची खंतही व्यक्त करते. तिचे आयुष्यात येणे आणि निघून जाणे, इतके सहज कसे असेल ? पण तिचे प्रेमातले सहज बोलणेही त्याच्या जिह्वारी लागते. तिला आपले शब्द जरी फुलांचे बाण वाटले तरी त्याच्या काळजात ते शब्द विषारी होऊन रुतून बसतात. मग ही ठसठसणारी वेदना तो 'सहज' कवितेत मांडून जातो.

जे जे तुजला सहज वाटले

सहज सोसणे सोपे नसते

आयुष्यातील अशा व्रणांना

अमरत्वाचे लेणे असते (पृ. १६)

कुणीतरी कुणासाठी झुरत असतानाच निसटून जाणाऱ्या क्षणांमधले काहीतरी आठवणीत दडून बसलेले असते. 'अस्तित्व' या कवितेत हळूवारपणे त्यांनी ही सल व्यक्त केली आहे.

आयुष्याचे बांधून तोरण आयुष्याला सजवताना

स्वप्नामधलं आपलं गाव पापणकाठी विरत असतं (पृ. १७)



या वेदनेला आपलेसे केल्यानंतर त्यातून कवितेचा महोत्सवच कवीने साजरा केला आहे, तो केवळ आनंद सागरासाठी आणि हेच या कवितेतील सौंदर्य आहे. कधी हे सारे लखलखणारी वीज असते तर कधी अल्लड अवखळ ओढा असून करुणार्त लकेरीमधील दुःखाला पडलेला काळीजवेढा असतो, हे सांगून 'नाद' कवितेत ते लिहितात,

स्वर तरल चांदणे दैवी  
प्राणात भरुनिया वाहे  
हा नाद असा गाण्याचा

अजरामर अश्रय आहे (पृ. १८)

आपल्या वाट्याला आलेले आयुष्य हे अटळ असले तरीही कधीकधी जगणे नकोसे करून टाकणारी वेदना आपल्या वाट्याला येते, तेव्हा हा कवी 'हैराण जिंदगी' कवितेत म्हणतो,

जगणे कठीण होता मरणे रूतून गेले

हैराण जिंदगीने मन हे विटून गेले (पृ. २३)

सभोवताली लडीवाळ नातीगोती जमली असताना आपल्याला गोत्यात आणणारे आपले सहकारी कुठून आले? असा प्रश्न कवीला पडतो. आपली ख्याली-खुशाली विचारण्यासाठी कधी कुणी येत नाही. परंतु तिरडीस हात देण्यासाठी सगळे नटून-थटून का येतात ? हे वास्तव कवीला अस्वस्थ करते. जीवनातील वेदनेचे रडगाणे न गाता अत्यंत सुंदरतेने तिला साकारणारी ही कविता आहे, याचा प्रत्यय आपल्याला त्यांच्या 'जगणे' या कवितेत येतो. पोटभर कपडे, अंगभर कपडे आणि राहायला घर असणे एवढेच जगण्यासाठी पुरेसे नसते. आई-वडील, बायका-पोरं आणि सगेसोयरे यांचे मायावी वेढे आपल्या जगण्याच्या सभोवताली असले तरी या साऱ्यांच्या पलीकडे 'जगणे' कसे असते, हेही त्यांची कविता सांगून जाते.

जगणे म्हणजे दुसरे काय ?

सुखाशिवाय हसणे, दुःखाशिवाय रडणे

प्रारब्ध प्रवाहातील हयातीचा प्रवास

आयुष्य झुंबरातील दिव्याचे एकाकी जळणे. (पृ. २६)

तुझे आभाळ कोणते आहे ? असा प्रश्न सृष्टीला विचारून दिशा कोणती आहे? हे सांग, म्हणून फुलणाऱ्या ऋतूंची तू दुर्दशा केली असे म्हणून .....

तू कळ्यांचा गंध घेता फूल जखमी जाहले

दुःख व्याकुळ वेदनेची पाकळ्यांची मूक भाषा (पृ. २९)

साकारणारी ही कविता आहे.

जीवन हे वेदनेने भरले असले तरी मनातील किरणांचा शोध घेत असतानाच कवीला सांजवेळच्या करुणेने वेटाळून घेतले असल्याचा प्रत्यय येतो तेव्हा

निर्वात प्रदेशामधुनी

कुणी हाक मारिली आर्त

तेव्हाच मला हे कळले

जगण्याला आहे अर्थ (पृ. ३२)

जगण्याला अर्थ असला तरीही कवीला जाणीव आहे की, हे आयुष्य असे लाभले आहे की, या देहावरच आपली मालकी राहिली नाही. ओढाळ प्रपंचामध्ये अगोचर वेदना भेटते. फुलांचा हव्यास धरला तर काटेच बोचतात. हे युगायुगांचे दुःख म्हणजे चिरंतन वज्रलेप आहे. सुखाला देहाप्रमाणे नश्वरतेचा शाप लाभला आहे. हे कथन लोभसवाणे आहे.

ओठात याचना अन् डोळ्यांची झोळी करून हा व्याकुळ अश्वत्थामा आपल्या भाळीची जखम वाहतो आहे, अशी ही वेदना किती सनातन आहे, याचा इथे प्रत्यय आल्याशिवाय राहत नाही.

जगण्याचा 'खुलासा' कसा करावा, हेच या कवीला कळत नाही. आयुष्याला दिलासा कधी मिळेल हेही कळत नाही. यंत्र मानवाप्रमाणे माणूसही आज यांत्रिक झाला आहे. एकमेकांबद्दल प्रेमभाव उरला नाही. परस्परंवर विश्वास राहिला नाही. प्रत्येकाची जाती-धर्माची चूल वेगळी आहे. माणुसकीचे सरपण त्याच्याखाली जळताना दिसते. दुसऱ्याचा घास हिसकावून घेणारी मानसिकता आज सर्वत्र दिसते. ह्या आजच्या माणसाच्या जगण्याबद्दल कवीचा 'खुलासा' चिंतनीय आहे.

आयुष्याचा जुगार झाला श्रमावीण ये पैसा

फूल कागदी कृत्रिम त्याला सुवास कैसा ?

ओठी सुखाचा घास तरीही उरी उसासा (पृ. ३९)

कवीला जन्मापासून आयुष्याचे व्याकरण कधी कळले नाही, ही खंत ते 'व्याकरण' कवितेतून व्यक्त करतात. आनंदाचे सोहळे इथे कसे साजरे करावे, कारण दुःखाचे पाश भोवती असून वेदनांनी जीव जळतो आहे. तरीही मातीवर पाय रोवून कवीने आभाळाला हाक दिली आहे आणि आसमंताच्या मध्यस्थीने सूर्यकुळांना आमंत्रण दिले आहे. अशाप्रकारे प्रचंड आशावादही मांडणारी ही कविता वेदनेतही जगण्यासाठी आश्वासन देऊन जाते.

'पापण्यांचे काठ ओले' या शीर्षक कवितेमध्ये कवीने 'तुझ्या कंठातले गाणे माझ्या मनात भिनले असून त्या स्वरांच्या आर्ततेने माझ्या पापण्यांचे काठ ओले झाल्याबद्दलची कृतज्ञता प्रकट केली आहे.

सारांश, जगणे कठीण झाले असले तरी आणि माणसे परस्परंशी यांत्रिकपणे परक्यासारखी वागत असली तरी वेदनेचे गाणे गाणारा हा कवी जगण्यातील सौंदर्य अलवारपणे टिपतो, हेच या कवीचे आणि कवितेचे यश आहे.

#### संदर्भ

- 1) देशपांडे डॉ. गोविंद, पापण्यांचे काठ ओले, मलपृष्ठ, ईभ्र प्रकाशन, पोहंडूळ (ता. पुसद), प्रथमावृत्ती २००४
- 2) 'पापण्यांचे काठ ओले, (कविता संग्रह) - नीलकृष्ण देशपांडे, ईभ्र प्रकाशन पोहंडूळ (ता. पुसद), प्रथमावृत्ती २००४

## आधुनिक युगातील मानवतावाद म्हणजेच शिक्षण विचार

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### सारांश

आधुनिक युगाचा विचार केला असता, मानवतावाद कुठे तरी संपत चालला आहे, असे अनेकांचे मत पडते. परंतु प्राचीन काळापासून ते आतापर्यंतच्या संतांनी महात्म्यांनी जे सांगितले ते निश्चितच मानवतावादाचे द्योतक आहे. आधुनिक युगात मानवतावादाचे स्वरूप काही प्रमाणात बदलले आहे असे आपण म्हणू शकतो. मात्र या बदलत्या स्वरूपाचा विचार कोणी व कसा मांडला आहे याचा विचार करणेही क्रमप्राप्त आहे. हाच विचार मांडण्याचा व त्याचा धावता आढावा घेण्याचा प्रयत्न प्रस्तूत शोध निबंध लेखकाचा आहे. सदर आढावा हा मानवतावादी विचारांचा एक आलेख ठरावा या अपेक्षेतून सदर शोधनिबंध लिहण्यात येत आहे.

**मुख्य शब्द :** मानवता, समाज, जाणिव, संत, आधूनिकता, जीवनमूल्य, राष्ट्रसंत तुकडोजी महाराज, संत गाडगे महाराज, म.फुले, चातुर्वर्ण्य, शिक्षण.

### प्रस्तावना

भारत भूमी ही संतमहात्म्यांची भूमी म्हणून जगभरामध्ये प्रसिद्ध आहे. या भूमीवर अनेक संतांनी महात्म्यांनी जन्म घेतला. समाजाच्या उन्नतीसाठी या सर्वांनी तना-मनाने प्रयत्न केला. समाजोन्नतीचा विचार तळागाळापर्यंत पोहोचवला. मात्र नंतर मध्ययुगात चातुर्वर्ण्य समाज व्यवस्थेने उचल खाल्ली. यामुळे समाजातील अनेक घटकांना आपल्या अधिकारापासून वंचित रहावे लागले. याचा परिणाम समाजाच्या विकासावर झाला. थोडक्यात समाजाचा विकास खुंटला. मानवतावादी दृष्टीकोन लयास गेला. मात्र परत एकदा संत परंपरा सुरु झाली आणि या संतांनी चातुर्वर्ण्य समाज व्यवस्थेवर कुठे आघात करित तर कुठे विद्रोहाचा विचार मांडत समाजस्थिती बदलण्याचा यशस्वी प्रयत्न केला.

मधल्या काही वर्षांत परत ही परिस्थिती बदलली. संतांचे प्रयत्न फोल ठरायला लागले. समाजात आहे तसे राहण्याची वृत्ती वाढीस लागली. दैवतादावर हवाला ठेवणे व 'चित्ती असू द्यावे समाधान' ची वृत्ती ठेवण्याकडे कल वाढला. मात्र परत आधुनिक काळात मानवतावादी विचारसरणी मांडणारे जनजाणिव्यांनी युक्त संत महात्मे जन्मास आले. त्यांच्या विचार सरणीने परत एकदा भारतीय जनसामान्यांची विचारधारा ढवळून निघाली. या आधुनिक संत महात्म्यांनी शिक्षणाचा विचार प्रामुख्याने मांडला. जनसामान्य व्यक्ती शिक्षणापासून वंचित राहिल्यामुळेच स्वतःचा विकास साधू शकली नाही. यामुळे त्याचा विकास झाला नाही. म्हणूनच शिक्षणाच्या अनुषंगाने ज्यांनी विचार मांडले त्यांचा एक धावता आढावा या शोधनिबंधाच्या माध्यमातून घेण्याचा मानस आहे.

### पुर्वतिहास

पुर्वी भारत भूमीमध्ये स्त्री-पुरुषांना शिक्षणाचा समान अधिकार होता. प्रत्येक व्यक्ती आपल्या इच्छेनुसार व आवडीनुसार

शिक्षण घेत असे. यातूनच गार्गी, मैत्रेयी, सिता, द्रौपदी, कुंती सारख्या महापंडीता निर्माण झाल्या. सोबतच विविध धर्मातील अनेक पंडीत संत महात्म्यांनी आपल्या ज्ञानाने भारतीय जीवन प्रगत व प्रगल्भ विकसीत केले. मात्र नंतर पुरुषी अहं, विनाकारणचा मी पणा यामुळे स्त्रीयांना व चातुर्वर्ण्य व्यवस्थेतील ब्राह्मण वगळता इतरांना शिक्षणाची द्वारे बंद करण्यात आली. ज्या भारतात पूर्वी सोन्याचा धूर निघत असे, जो भारत 'सुजलाम् सुफलाम्' होता तोच अत्यंत अविकसीत देशांच्या यादीत जाऊन पोहोचला. स्त्रीयांवर अन्याय अत्याचार करायला लागला. मात्र ही परिस्थिती बदलण्याचा विचार करायला कोणाजवळही वेळ नव्हता. म्हणूनच अंधःकारात खिचतपत पडून राहण्याचाच विचार जो तो सहज स्विकारत होता. याचा परिणाम म्हणजे भारत जो अत्यंत विकसीत व प्रगत होता, तोच देश अत्यंत अप्रगत बनला. जाणिव्यांचा विकास होण्याकरिता अनेकांनी केलेले प्रयत्न फोल ठरत होते, कारण या समाजाला शिक्षण नव्हते. समाज अविकसीत राहण्याचे कारण हळूहळू या आधुनिक विचारवंत-समाजसुधारकांच्या लक्षात येत गेले व त्यांनी शिक्षणावर आपले लक्ष केंद्रीत करायला सुरवात केली. यातील काही समाज सुधारकांचा हा धावता आढावा.

### राष्ट्रसंत तुकडोजी महाराज

राष्ट्रसंत तुकडोजी महाराजांनी शिक्षणाचा विचार अत्यंत परखडपणे मांडला आहे. भारत हा खेड्यांचा देश आहे व ग्राम म्हणजेच खेडे. या ग्रामाचा विकास साधायला असेल तर शिक्षणाने परिपूर्ण असणारे ग्रामच स्वविकास साधू शकेल यावर त्यांचा पूर्ण विश्वास होता. आणि म्हणूनच ते आपल्या लेखणीच्या माध्यमातून शिक्षणावर भर देतांना दिसून येतात. ते आपल्या ग्रामगीतेत म्हणतात,

ग्रामोन्नतीचा पाया शिक्षण । उद्याचे राष्ट्र आजचे संतान ।  
यासाठी आदर्श पाहिजेत गुरुजन । राष्ट्रनिर्माते ॥  
या ओळीद्वारे ते सर्वप्रथम शिक्षकांना आपल्या कर्तव्याची जाणिव करून देतात कारण जर शिक्षक योग्य असेल तरच तो सक्षम राष्ट्र निर्माण करू शकतो. कारण विद्यार्थ्यांचे सुप्तगुण ओळखून त्यांचा विकास साधने हे शिक्षकाचेच कर्तव्य आहे. सोबतच त्यांना काय व कसे शिकवावे हे सुध्दा राष्ट्रसंत सांगतांना दिसतात.

मुलांना शिकवाव्या नाना कला । चाफल्य, ध्येया निष्ठादि सफला।

गावची सांभाळू शकेल अपुला । ऐसे द्यावे शिक्षण ॥  
याप्रकारे शिक्षण दिल्याने ग्रामासमवेत राष्ट्राचाही विकास निश्चितपणे होणार असल्याचे मत राष्ट्रसंत देतात. ते स्त्री शिक्षणाचा विचारही प्रभावीपणे मांडतांना दिसतात. राष्ट्रसंत स्त्रीबाबत म्हणतात,

महिलांचे उच्चतम शिक्षण । शिक्षणात असावे जीवनाचे स्थान ।  
जीवनात असावे स्वारस्यपूर्ण । शांती दयादि भावनांचे ॥

या प्रकारे महिलांच्या उन्नतीतूनच राष्ट्राची उन्नती असल्याचे परखड मत राष्ट्रसंत आपल्या लेखणीच्या माध्यमातून मांडतांना दिसतात ते आपल्या विचाराच्या माध्यमातून शिक्षणाचा पाया मजबूत करित असल्याचे आपणास निश्चितपणे जाणवते. आधुनिक युगातील या आधुनिक संताने ग्रामाग्रामासी जागवण्याचा जो गजर केला तो राष्ट्रविकासात अत्यंत अग्रेसर ठरला.

### संत गाडगे बाबा

संत गाडगे बाबा हे कधीही शाळेत गेले नाही. स्वतः निरक्षर असलेल्या या संताने किर्तन हे माध्यम जनजागृती करण्याकरिता वापरले. अत्यंत साधी राहणीमान असणाऱ्या या संताने आपल्या परखड वाणीच्या माध्यमातून सातत्याने जनजागृती केली. 'शिक्षणाशिवाय माणूस धोंडा' असल्याचे ते आपल्या प्रत्येक किर्तनातून आवर्जून सांगत असत. 'ज्याला शिक्षण नाही त्याला खटाच्याला बैल म्हटलं तरी चालेल' असे म्हणत ते मुलांना शिकवण्याची प्रेरणा देत. रुढी, प्रथा परंपरांना सोडा, एकवेळ हातावर भाकर खा पण मुलांना शिक्षण द्या असं ते कळवळ्यान सांगायचे. त्यांच्या त्या सांगण्यामूळे अनेक मुलांचे शिक्षण मार्गी लागल्याचे चित्र आपणास दिसून येते.

### महात्मा ज्योतीराव फुले

महात्मा ज्योतीराव फुलेंचे नाव समोर येताच त्यांच्या शिक्षणाच्या महात्म्या बाबत मांडलेल्या पुढील ओळी आपल्याला आठवतात—

'विद्येविना मति गेली, मतिविना निती गेली ।

नितिविना गती गेली, गतिविना वित्त गेले ।

वित्तविना शूद्र खचले । इतके अनर्थ एका अविद्येने केले ॥

म. ज्योतीरावांच्या काळात या समाजात अज्ञान, रुढी, प्रथा, परंपरांचे पीक आले होते. समाज अंधकारात खिंतपत पडला होता. अशा अवस्थेत सांस्कृतिक माहेरघर समजल्या जाणाऱ्या पुण्यामध्ये पहिली मुलींची शाळा सुरु करण्याचे कार्य म. ज्योतीराव व सावित्रीबाई फुले या दांपत्याने केले. या शाळेत दाखल झालेल्या मुलींना मायेच्या वात्सल्याने नुसाते शिकवलेच नाही तर सांभाळले सुध्दा. त्या काळामध्ये इतर लोकांना पचनी पडणार नाही असे विचार मांडून त्यांनी शिक्षणात आमुलाग्र बदल करण्याचे ठरवले. प्राथमिक शिक्षण सक्तीचे करावे, शिक्षण प्रशिक्षित असावे, आरोग्य, शेती विषयक शिक्षण द्यावे इत्यादी बाबी त्यांनी प्रामुख्याने मांडल्या. म. फुले फक्त बोलके नव्हे तर कर्ते सुधारक असल्याचे त्यांच्या विचारांच्या तथा कर्तृत्वाच्या माध्यमातून आपल्याला दिसून येते. भारतीय जडणघडणीमध्ये ज्यांचा विचार प्रामुख्याने केला जावा अशा विचारवंतात समाजसुधारकात म. ज्योतीराव फुल्यांचे नाव अग्रक्रमाने घ्यावे लागते.

### राजर्षी शाहू महाराज

राजर्षी शाहू महाराजांना उपेक्षित समाजाचा विचार मनापासून करावा वाटत असे. त्यांनी समाजाचा मनःपूर्वक अभ्यास केलेला असल्यामुळेच त्यांची विचारधारा ही समाजाच्या विकासाप्रत होती.

'माझी प्रजा केवळ प्राथमिक शिक्षणाने जरी विद्याविभूषित झाली तरी तिच्या हाती मी स्वराज्य स्वाधीन करेन' असे वक्तव्य शाहू महाराज करित असत. त्यांनी आपल्या विचारसरणीतून मानवतावादच जोपासला असल्याचे आपणास दिसून येईल.

राजर्षी शाहू महाराजही कर्ते सुधारक होते. त्यांनी आपल्या राज्यात प्राथमिक शिक्षण मोफत व सक्तीचे केले होते. त्या काळात शिक्षणासाठी त्यांनी एक लाख रुपयांचा निधी राखून ठेवला होता. शिक्षकांना गुणवत्ता तपासून नौकऱ्या दिल्या. तसेच शिक्षण शेतकऱ्यांच्या मुलामधून तयार व्हावेत म्हणूनही प्रयत्न केले. स्त्री शिक्षणास चालना मिळावी म्हणून कु. एच. लिटल यांची विशेष नियुक्ति त्यांनी केली. वस्तीगृहे निर्माण करून त्यात मुलांना रहायला सांगितले. विविध जातीधर्माच्या मुलांना शिक्षण मिळण्याच्या दृष्टीने विविध वस्तीगृहांची स्थापना केली. स्वतःच्या विधवा सूनूला शिक्षण देऊन त्यांनी सुशिक्षित केले, व समाजासमोर आदर्श निर्माण केला.

### गुरुदेव रवींद्रनाथ टागोर

गुरुदेव रवींद्रनाथ टागोर यांनी शांती निकेतनची स्थापना करून पुनश्च गुरुकुल प्रथा जन्मास घातली. आपल्या आवडीचे शिक्षण घेण्याची सोय या ठिकाणी त्यांनी निर्माण करून दिली. येथे बालकांना आवडीचे व मातृभाषेतूनच शिक्षण दिले जाऊ लागले. मानवतावादी दृष्टीकोनातून जर या घटनेकडे आपण बघितले तर गुरुदेव टागोरांचा शिक्षणातील आधुनिक मानवतावाद आपल्याला जाणवल्याशिवाय राहणार नाही.

आज मानव भौतिक सुखाच्या मागे लागल्यामुळे इतर सर्व विसरला आहे. त्याला जर खऱ्या जाणिव्या हव्या असतील तर ज्ञानाशिवाय पर्याय नसल्याचे विचार गुरुदेव सातत्याने मांडत असत. मुलांना त्यांची विचारशक्ती वापस द्यावी. म्हणजे त्यांचा विकास नैसर्गिक पध्दतीने होईल असे त्यांचे आग्रही प्रतिपादन होते. गुरुदेवांचा विचार आधुनिक मानवतावादाचा जनकच असल्याचे आपल्या दृष्टीस पडते. यातूनच त्यांनी दिलेले तत्वज्ञान आजच्या पिढीकरिता मार्गदर्शक ठरणारे व त्यांची विचारधारा विकसित करणारे आहे असे आपण म्हणू शकतो.

### महात्मा गांधी

ब्रिटीश काळात इंग्रजी शिक्षण सुरु झाले. मात्र त्याचा विचार केल्यावर स्वस्वार्थाकरिता ते सुरु केले असल्याचे आपल्याला निश्चितपणे जाणवल्याशिवाय राहणार नाही. मानवतावादाचा विचार करतांना म. गांधींनी ग्राम विकासाकरिता शिक्षणाचे असणारे महत्व सांगतांना विविध योजना ग्रामाकरिता कार्यान्वित करण्याची सूचना केली. त्यांच्यामते, “ केवळ साक्षरता म्हणजे शिक्षण नव्हे, शिक्षणाचा प्रारंभ देखील नव्हे. आत्मा व मन यांचा परिपूर्ण विकास करून व्यक्तीमधील सर्वोत्कृष्ट गुणांची अभिव्यक्ती करणे, हे शिक्षणाचे खरे ध्येय होय.”

नुसते पुस्तकी ज्ञान घेण्यापेक्षा आपण जर कृती करण्याचा प्रयत्न केला तर त्यातून मिळणारे ज्ञान हे परिपूर्ण व संपूर्ण विकास साधणारे असेल. आणि म्हणूनच उद्योगातून ग्राम स्वयंपूर्ण व्हावे म्हणून व्यक्ती परिपूर्ण व्हावा म्हणून ते मुलेंद्योगी शिक्षणाचा पुरस्कार करित असत.

याप्रकारे महात्मा गांधींनी आपला मानवतावाद शिक्षणाच्या बाबतीत मांडलेला दिसून येतो. मानवतावादाचे विविध स्वरूपाचा अभ्यास करतांना शैक्षणिक दृष्टीकोनाचाही विचार म्हणूनच अग्रक्रमाने करावा लागतो. म. गांधी ग्रामोद्योग, हस्तकला, सामान्य व सुंदर जीवनशैलीचा पुरस्कार करतांना दिसतात. भारत खऱ्या अर्थाने ग्रामातच आहे असे ते आग्रही प्रतिपादन करित असत.

### निष्कर्ष

१) मानवतावादाचा विचार प्राचीन काळापासून सुरु आहे. परंतु त्याचे स्पष्ट आकलन आधुनिक विचारवंतांनी आधुनिक काळात परत एकदा केले असल्याचे जाणवते.

### संदर्भ ग्रंथ

- १) शिक्षण क्षेत्रातील विचारवंत (१९९५) प्रा.मा.ग. पवार नूतन प्रकाशन पुणे.
- २) शैक्षणिक विचारवंत (२००६) डॉ. के. के. घोरमोडे, डॉ. कला घोरमोडे, विद्या प्रकाशन नागपुर
- ३) जागतिक शिक्षण तज्ञ (२०१०) डॉ. सौ. प्रतिभा सुधीर पेंडके, विद्या प्रकाशन नागपुर

२) मानवतावादाचा विचार आज प्रामुख्याने अंगीकारण्याची गरज असल्याचे दिसून येते.

३) मानवतावादात समाजातील विविध पैलू येतात. त्यातील स्त्री-पुरुष समानता, जीवन जाणिव, शिक्षणाचा अधिकार इत्यादी महत्वाचे पैलू आहेत.

४) म. गांधींनी शिक्षणाच्या माध्यमातून मानवतावाद मांडतांना ग्रामविकासावर भर दिलेला दिसून येतो.

५) म. जोतीराव फुले व सावित्रीबाई फुले या दांपत्याने स्त्री शिक्षणाची सुरुवात केली ती याच मानवतावादी दृष्टीकानातून असे म्हणायला हरकत नाही.

६) राजर्षी शाहू महाराजांनी वसतीगृह, शिष्यवृत्ती, मोफत शिक्षण इत्यादी मानवतावादी बाबींचा अंगीकार व पुरस्कार केलेला आपणास दिसतो.

७) राष्ट्रसंत तुकडोजी महाराज व गाडगे महाराज यासारखे संतही या शैक्षणिक चळवळीत सामील झाले. त्यांनीही शिक्षणाचा प्रचार प्रसार आयुष्यभर केला.

८) आधुनिक काळातही मानवतावादी दृष्टीने बघता शिक्षणची चळवळ अधिकाधिक संपन्न करण्याची व अगदी तळागाळापर्यंत ती पोहोचवण्याची गरज असल्याचे आपणास दिसून येईल.

९) आधुनिक काळातील शिक्षण विचार हाच खरा मानवतावाद असल्याचे आज दृष्टीस पडत आहे.

### समारोप

आजच्या युगात मानवतावादाचे स्वरूप बदलत आहे. आज समाजाची फसवणुक करणारे नवनवीन पध्दतीने अन्याय, अत्याचार करित आहेत. आर्थिक, सामाजिक, वैचारिक, शारीरिक व मानसिक शोषण सातत्याने सुरु आहे. आम्ही कितीही प्रकारे विरोध केल्याचा आव आणत असलो तरी कुठे तरी हा विचार चुकत आहे हे तेवढेच निश्चित आहे. म्हणूनच मानवतावादाचे पुनरुज्जीवन करणे आज काळाची गरज आहे व हे सर्व शक्य होणार आहे ते शिक्षणाच्या माध्यमातून म्हणूनच आधुनिक मानवतावादाचा पुरस्कार जर कदायचा असेल तर शिक्षणाशिवाय तरणोपाय नाही हे तेवढेच निश्चित आहे. भारतीय संस्कृतीने शिक्षणाचा विचार पुर्वापार मांडलेला आहेच. त्याला जोड आधुनिक विचारवंतांची लाभली असून परत एकदा नव्याने हा विचार मांडणे काळाची गरज असल्याचे स्पष्ट होते.

## विज्ञान व तंत्रज्ञानाच्या युगात स्त्री शिक्षणात झालेले परिवर्तन एक अध्ययन

शि. वै. भागवतकर

मराठी विभाग, कारंजा लाड

### प्रस्तावना

विज्ञान म्हणजे विशेष ज्ञान किंवा शास्त्र आधुनिक जे पारंपारिक नाही ते स्त्री भारतीय संस्कार व संस्कृतीत सुशिक्षित व संस्कारीत झालेली स्त्री स्वातंत्र्योत्तर काळात स्त्री शिक्षणाचा प्रचार व प्रसार वाढला चुलमूल हे 'रांधवाडा' उष्टीकाढा हा विचार कालबाहय झाला व उंबरठ्याच्या आत वावरणा—या स्त्रीयांनी उंबरठा ओलांडायला, कौटुंबिक गृहव्यवस्थापनास कर्त्या पुरुषासोबत आपलेही योगदान असावे यासाठी त्यांनी आर्थिक प्रयत्नही सुरू केले कुटुंबाच्या अर्थाकरणात नौकरी व व्यवसायाच्या माध्यमाने स्त्रीयाही आपले योगदान नोंदवू लागल्या त्यामुळे परंपरागत संस्कार शिक्षण रूढी परंपरा चालीरीती यांनी स्त्रीयां मुक्तीच्या मार्गाने प्रवास करायला लागल्या.

व्यक्तिस्वातंत्र्याचा पाश्चात्य संस्कृतीचा स्त्रियांच्या व्यक्तिमत्त्वावर झालेला परिणाम विचारात घेणे हे या अध्ययनाचे प्रयोजन आहे, अध्ययनाला प्रारंभ करण्यापूर्वी त्यांची दिशा निश्चित करण्यास उददीष्टे ठरवली आहेत.

### उददीष्टे

१. बदलत्या सामाजिक आर्थिक परिस्थितीचा स्त्रियांवर झालेला परिणाम पाहणे.
२. आधुनिक विचाराचा आधुनिकतेचा पारंपारिक रूढीने ग्रासलेल्या स्त्रीमनावर झालेला परिणाम आभ्यासणे.
३. आत्याधुनिक विज्ञान व तंत्रज्ञान यांचा स्त्रियांच्या व्यक्तिमत्त्वावर प्रभाव यांचे अध्ययन करणे.
४. पारंपारीक स्त्रिया व आधुनिक स्त्रियांचा तौलनिक आभ्यास करणे.

### गृहीत कृत्ये

अध्ययनाला सुरुवात करण्यापूर्वी संभाव्य निष्कर्ष निश्चित करतायावे यासाठी पुढीलप्रमाणे गृहित कृत्ये निश्चित केलीत

१. आधुनिक विज्ञानाचा तंत्रज्ञानाचा स्त्री व्यक्तिमत्त्वावर सकारात्मक व नकारात्मक दोन्ही परिणाम झालेत.
२. पारंपारिकता व आधुनिकता दोन्ही सोबत संघर्ष करता दुहेरी भूमिका निर्माण झाली आहे.
३. आधुनिक विज्ञानामुळे व्यक्तीस्वातंत्र्य ही संकल्पना प्रभावित झाल्याने कौटुंबिकरचना विभक्त झाली आहे.

**मुख्यशब्द** — व्यक्तिमत्व, विचारमंथन, संस्कार, परिवर्तन, तंत्रज्ञान.

### चर्चा व परामर्श

भारत माता या शब्दातच स्त्रीनाम आले असले तरी खरोखरच पुर्वीच्या काळी स्त्रियांनायोग्यते स्थान होते का? असा विचार जर केला तर भारतीय समाजाची जडणघडण प्राचीन

कालखंडानुसार सर्वसमाजजीवनाशी निगडित अनेक घडामोडी घडल्यात, त्यादरम्यान जे स्त्रीजीवन होते ते कश्याप्रकारचे होते हे पाहता प्राचीन कालखंडानुसार पुर्वीच्या काळी वर्णव्यवस्था होती.

वर्णव्यवस्थेनुसार जी आश्रम व्यवस्था ठरवलेली होती त्यात मानवाचे आयुष्य १०० वर्षे गृहीत धरून २५ वर्षांचा टप्पा एक वर्णव्यवस्थेमध्ये गणला जात असे त्यातून प्रामुख्याने ब्रम्हचर्याश्रम, गृहस्थाश्रम, वानप्रस्थाश्रम, वसत्याश्रम, अशी जीवन आश्रम व्यवस्था करण्यात आली यातील जी ब्रम्हचर्याश्रम अवस्था होती. त्यामध्ये केवळ पुरुषच गुरुच्या कुटीमध्ये जाऊन तेथेच उपनयन विधी आटोपून भावी जीवनासाठी उपयुक्त असे शिक्षण घेत असे. तेव्हाच्या काळात हिंदू संस्कारव्यवस्थे प्रमाणे गर्भाधानापासून अंत्येष्टिपर्यंत सोळासंस्कारातच अडकलेल्या स्त्रीला पुरुषापेक्षा दुय्यम दर्जा होता.

नंतरचा जैन धर्माचा बौद्ध धर्माचा प्रसारकाळ, ईस्लाम काळ यां काळातही स्त्रीयाची शैक्षणिक दृष्ट्या जागृकता कमीच होती.

ब्रिटीश कालखंडात मात्र धर्मनिरपेक्षतेवर आधारित नव्याने प्रस्थापित केलेल्या धर्मनिरपेक्ष कायद्याच्या व्यवस्थेमुळे धार्मिक मानसिकतेवर आधारित कायद्यापासून सुटका झाली. विशेषतः स्त्रियांना शिक्षणाची संधी प्राप्त झाली, स्त्रियांवर समता, बंधुत्व सामाजिक न्याय मानवतावाद ई. पाश्चात्य मुल्यांचा प्रभाव पडला. बालविवाह, विधवा विवाहबंदी, स्त्री शुद्रांच्या शिक्षणवरील बंदी ह्या प्रथा नष्ट करण्यास सामाजिक परिवर्तन घडवून चळवळी झाल्या. पूर्वी सतीबंदी कायदा १८२९ हिन्दू विधवा पूनर्विवाह कायदा १८५६ नागरी विवाह कायदा १८६२, बालविवाह बंदी कायदा १९२९ इ. कायदे होते.

स्वातंत्र्योत्तर काळात आधुनिकीकरणाची गती वाढली. भारताची राज्यघटनेतील कलमानुसार स्त्री शिक्षण, समानतेचा अधिकार मिळाला महिलांचे हितसंबंध जोपासण्याच्या दृष्टीने अनेक कायदे करण्यात आले महिलांना आरक्षण देण्यात आले. स्त्रियांची सामाजिक स्थिती ही मध्ययुगीन व स्वातंत्र्यपूर्वकालीन स्त्रियांहून निश्चीतच चांगली झाली.

स्वातंत्र्यप्राप्तीनंतरच्या काळात ग्रामीण स्मुदायातील स्त्रियांचा दर्जा निम्म स्वरूपाचा होता. पितृसत्ताक कुटुंब पध्दती होती, स्त्रियांना शिक्षण घेण्याचा, विवाहासाठी जोडीदार निवडण्याचा अधिकार नव्हता त्यांचे कार्यक्षेत्र चूल व मूल एवढ्यापूरते मर्यादीत होते. मुलगा, मुलगी, असा भेद केला जाई त्यामुळे सर्व कुटुंबाचा विकास ठप्प होता सर्वत्र अंधश्रद्धा चा पगडा

होता, निरक्षरता होती स्त्रीयांना समाजात आपले विचार स्पष्ट मांडता येत नव्हते. शहरीभागातही स्त्रीया तितक्याश्या प्रगत नव्हत्या, कुटुंबातील सर्व भार एकट्या पुरुषावर पडत होता. बहुपत्नीत्व पध्दती असल्याने कुटुंबातील स्त्रीयांना दुययम दर्जा देण्यात आला.

लोकसंख्या वाढ नियंत्रीत करण्यासाठी स्त्रीशिक्षणाचा प्रसार होणे गरजेचे आहे पारंपारिक समाजात स्त्रीयांना शिक्षणाचा हक्क नव्हता त्यांचे लवकरात लवकर विवाह होत असत. आपले कुटुंब हेच आपले सर्वस्व आहे आणि मुलाबाळाचे संगोपण करणे ऐवढेच तिचे क्षेत्र होते. पुर्वीच्या काळातील स्त्रियांचे जिवनमान प्रगट करणारे लेखक उध्व शेळके यांनी त्यांच्या लेखणाद्वारे कथा – कादंब‘—याद्वारे कष्टकरी व शोसक स्त्रियांच्या जीवणाचे प्रामुख्याने दर्शन घडवले.

उदा: माय, धग, अग्निकता, अर्धांगी यासारख्या त्यांच्या लेखनातून स्त्री जीवन वर्णनावरून कळते की, अनेक बिकट प्रसंगाला तोंड देत अत्यंत धैर्याने स्त्रियांचे जीवन व्यतित झालेले आहे. महिलोन्नती व वैवाहिक जीवन यावरील अध्याय आश्चर्य वाटण्याईतके पुरोगामी व प्रागतीक आहे. स्त्रियांनी आपले जीवन व्यवहार कोणत्या प्रकारे चालवावे स्वतंत्र बुंधीराखून आपल्याजीवनाचे सार्थक कसे करावे हे एकनाथांनी उपदेशिले ग्रामगीते मध्ये ही स्त्रीला कोणता सामाजिक दर्जा दयावा वस्तुतः तिची पदवी काय असावी याची चर्चा आली आहे.

हिंदू धर्माला प्राचीन परंपरा आहे आणि त्यातल्या त्यात भारतीय हिंदूस्त्री वर बालपणापासूनच अनेक धार्मिक सुसंस्कार झालेले आढळतात

‘जिच्या हातात पाळण्याची दोरी ती जगाला उध्दारी’ स्त्री मातेची महती सांगतांना हे म्हणता येते की, अशी संस्कारीत स्त्रीमाता अखेर आपल्या मुलांवर उत्कृष्ट स्वरूपाचे धार्मिक संस्कार करू शकते. मातीच्या गोळारूपी बालकाला कुंभाराप्रमाणे घडवण्याची मेहनत घेते व त्याचे सुंदर नागरीकात रूपांतर करते.

आजच्या आधुनिकीकरणामुळे तर स्त्रीला तंत्रज्ञान व विज्ञानाची जोड मिळून ती अनेक असाध्य गोष्टी साध्य करण्यासाठी धडपडते आहे व त्या मातीच्या गोळारूपी बालकाला अधिकाधिक आकर्षक बनवत आहे.

विज्ञानाच्या शोधाचा स्त्रीजातीला अतिशय फायदा झाला ति आधुनिक उपकरणे, साधने वापरून तिच्या कार्यक्षमतेची वाढ करून समाजातील तिचे योगदान वाढवते आहे.

प्रत्येक स्त्रीमध्ये सुप्तावस्थेत एक कलाकार नक्कीच दडलेला असतो, फक्त आपल्यातील हा सुप्तगुण ही कला आणि त्यास पूरक असणा—या क्षमता आवडी—निवडी कुवती इ. ची जाणीव जर स्त्रीला झाली असेल तर, ती आधुनिक युगातील स्पर्धेत टिकण्यास पात्र ठरली आहे.

आधुनिक युगातील तंत्रज्ञानामुळे संगणक, आंतरजाल

या सर्वांचा स्त्रीच्या वाटचालीत मोलाचा वाटा ठरतो आहे. नृत्य, गायन, वादन, मैदानी, खेळ, वीणकाम रंगकाम, पाककला सौंदर्यप्रसाधनाचा वापर, सुशोभिकरण यावर आधारित कितीतरी प्रकारची माहिती त्वरीत प्रत्येक स्त्रीला गुगलद्वारे प्राप्त होते आहे यामुळे स्त्रीयांना आपल्या कला गुणांना चालना मिळते आहे त्या प्रत्येक क्षेत्रात प्रगती करत आहेत.

“व्यष्टी सुंदर है। समष्टी सुंदर है।

त्याग की दिव्यमूर्ती तु नारी।

जिसके होने से सारी सृष्टी सुंदर है।”

स्त्रीच्या अंगी दिव्यत्वाची प्राप्ती होत आहे ती जादूई छडी सारख्या भासणा—या आंतरजाला शिक्षणात प्रत्येक क्षेत्रात गरजेचा भाग ठरलेला आहे. याच्या जोरावर स्त्रीने गगन भारी घेतली आहे.

स्त्रीच्या व्यक्तिमत्तवात उंची वर्ण बांध अनेक घटकांचा समावेश जो होतो तो तिचे बाह्य व्यक्तिमत्व ठरते पण तंत्रज्ञानाच्या वापराने तिचे आंतरबाह्य व्यक्तिमत्व आकर्षक ठरले

छुरचित्रवाणीवरील मालिकादेखील तिच्या सर्वांग परिवर्तनासाठी उपयोगात आले त्या मालिकेतील स्त्रीया ज्याकी शारीरिक आणि मानसिक दृष्ट्या प्रभावी दाखविल्या जातात, त्यांच्यातील आत्मविश्वास आत्माभिमान, समाजातील रूढी परंपरांचे पालन करणे, आत्मवास्तवीकरण अश्याअनेक गोष्टींचा समावेश त्या नटयांचा रूपातून भूमिकेतून दर्शविला जातो, प्रत्येक मालिका पाहणारी स्त्री त्यास प्रभावीत होत आहे.

आजच्या स्त्रीयाप्रत्येक क्षेत्रात अग्रेसर आहेत, त्या शिक्षिका इंजिनियर, वकील विमान चालक, संशोधक अश्या अनेक क्षेत्रात ठामपणे आत्मविश्वासाने उभ्या आहेत.

स्त्री आपल्या आत्मविश्वासाच्या जोरावर स्मितहास्यामुळे सा—या जगात हास्य व प्रकाशाची आभा, आशेचे किरण पसरवत आहे.

स्त्रीच्या जीवनात अनेकवळणे असतात, तिला अनेक प्रकारच्या भूमिका पारपाडाव्या लागतात या सर्व गोष्टीसाठी तंत्रज्ञानाची साथ घेउन ती आपले मनोबल कणखर निश्चय परिस्थितीशी तडजोड करण्याची क्षमता हे व्यक्ति मतत्वातील गुण तेजोमय करत आहे

आंतरव्यक्तिमत्व तसेच बाह्यव्यक्तिमत्वाचे बदल झपाट्याने अधिकाधिक उत्कृष्ट बनत चालले आहे ते केवळ आजकालच्या स्पार्थेरीपी, आधुनिक मशनरी याचा वापर केल्यामुळे ‘गतम न शोच्यम’ असे सुभाषित आहे

भुतकाळात जे घडले जे ऐश्वर्य व सुख दुःख तुम्ही उपभोगले ते आजनाही तर, रोजच्या रोज नवे अनुभव घ्या व त्यातून काही शिका व आपले भविष्य उज्वल बनविण्याचा प्रयत्न करा असे विचारमंथन आधुनिक विचार धारेच्या स्त्रीया करीत आहेत ते केवळ तंत्रज्ञानाच्या प्रगतीमुळे आजची स्त्री

शरीरयष्टीतील चेहरे पट्टीतील व अंगातील चांगले गुण यांच्यावर नेहमी भर देते म्हणजे दोष व कमतरतांकडे आपोआपच दुर्लक्ष होते, दुस-याशी बोलतांना आदरपूर्वक नम्रतेने पण तितक्याच परखडपणे बोलते की जेवढ्या, अडखळत ती स्त्री पूर्वी बोलत असे.

आधुनिक शिक्षणप्रणालीचा स्त्रीला आर्थिक दृष्ट्या मजबूत करण्यासाठी उपयोग झाला ती आर्थिक दृष्ट्या स्वावलंबी झाली घरातील पुरुष आर्थिक मिळकत करतो. पण त्याला हातभार लावणे शिक्षणाचा उपयोग करण्यासाठी स्त्रीया नौकरी व्यवसायाठी बाहेर पडत आहेत. घर व नौकरी या ठिकाणी त्यांना महत्वाचा दुवा ठरला तो विज्ञानाच्या साहाय्याने तयार केलेली अनेकवाहने साधने व उपकरणे जसे मोबाईल, प्रोजेक्टर ई. यांच्या मदतीने स्त्रीयांची मेहनत, वेळ, पैसा, वाचवता आला त्यांच्या प्रगतीला चारचांद लागलेत.

योग्यते शिक्षण आर्थिक स्थिती प्रतिष्ठा व अंगातील गुण लक्षात घेउन एखादा उदयोग उभारणे, शिकवण्या घेणे, कपडे शिवणे, पाळणाघर चालवणे, डबे करणे, लघु व कुटीर उदयोग करणे, यासारखे कामेकरून स्त्रीया स्वावलंबी झाल्या आहेत.

स्त्रीयांमध्ये आधुनिक विचारप्रणालीचा उगमच झाला आहे, तिच्या व्यक्तिमत्त्वाच्या जडणघडणीत महत्वाचा बदल म्हणजे तिच्यातील अवगुण जसे घमेंड, ईर्ष्या, खादाडपणा, आळस, मत्सर, चहाडीकरणे, निंदा, अप्पलपोटेपणा, लबाडी, खोटेपणा, ई. कुरूपता दर्शविण्या-या गोष्टी न दिसता तिच्यामध्ये तेजस्वी व्यक्तिमत्त्वाची छापपाडणारे गुण जसे : व्यवहार कुशलता आत्मविश्वास, शिष्टाचाराचे पालन खोटीशान न दाखवणे निःस्वार्थीपणा, सेवाभाव, बुद्धीमत्ता, रूढीवादाची योग्यती जाण, घमेंडखोरपण यावर मात अश्या अनेक गुण स्त्रीला खंबीरपणे समाजात वावरण्यास प्रवृत्त करत आहेत व स्त्रीयांचा समाजाच्याप्रति जडणघडणी मध्ये मोलाचा वाटा ठरतो आहे.

स्त्रीतिचा सुसंस्कृतपणा तिच्या विचारांतूनच नव्हे तर आचार, विचार, पोषाख व दैनंदिन जीवनातील वर्तनातून व्यक्त करते आहे स्त्री आधुनिक झाली ती पुरुषाच्या बरोबरीने काम करते याचा अर्थ असा नव्हे की, तिने पुरुषांना दुय्यम दर्जा दयावा तर, पुरुषांना योग्य तो आदरभाव व्यक्त करत स्वतःचे जीवनमान उंचवावे स्त्रीयांनी फॅशन करावी ती मर्यादित राहूनच, तोडके, कपडे वापरने, अवाजवी खर्च करणे उदध्टपणा उर्मटपणा याचा आधुनिकतेशी काही एक संबंध नाही.

विसाव्या शतकात मात्र अनेक आधुनिक तंत्रज्ञान निर्माण झाले, तसेच अनेक आधुनिक शिक्षण पध्दतीच्या अवलंबनामुळे एक नवविचार करणारा समाजवर्ग निर्माणझाला १९ व्या शतकात सामाजिक सुधारणेमध्ये महात्मा ज्योतिबा फुलेच्या योगदानामुळे मोठे परिवर्तन झाले त्यानंतर सावित्रीबाई फुले यांनी त्यांना मोलाचे सहकार्य केले.

१९ व्या शतकाच्या उत्तरार्धात २० व्या शतकाच्या पूर्वार्धात झालेल्या शैक्षणिक प्रयोगामुळे नवीन स्त्री निर्माण झाली आज समाजकारण, राजकारण यासारख्या क्षेत्रात स्त्रीयांची आघाडी आहे.

आधुनिक तंत्रयुगातील स्त्री संस्कृतीचा वारसा जपून उत्तुंग भरारी घेत आहे. स्त्री ही भावनाशील नाजूक कनवाळू असते हे पारंपारिक संकेतप्रथम 'वोस्टन क्राफ्ट ने झुगारून दिले स्त्री देखिल पुरुषाप्रमाणे विचारी, विवेकशीलजीव आहे. स्त्रीच्या आत्मभानाची बाजू समोर आली व तिला समान अधिकार मिळाला, आज स्त्री झगडू लागली, तिला शिक्षणाचा हक्क, मतदानाचा हक्क संपत्तीचा हक्क, समानतोचा हक्क मिळून सर्जनशील प्रवास सुरू झाला.

आधुनिक पध्दतीच्या शिक्षणामुळे स्त्रीया वैचारिक चर्चेतून स्वतःला व्यक्तकरू लागल्या त्यांनी आपल्यापुढे सावित्रीबाई शिंदे यासारख्या स्त्रीयांचा आदर्श ठेवला.

अश्या त-हेने विज्ञान व तंत्रज्ञानाच्या मदतीने स्त्री जीवन सुलभ, झाले तिचे व्यक्तिमत्व घडले.

### निष्कर्ष

१ वैज्ञानिक दृष्टिकोन स्विकारल्यावर स्त्रियांचा जीवन विषयक दृष्टिकोन बदलला.

२ आधुनिक तंत्रज्ञानामुळे स्त्रियांनी गृहव्यवस्थापन व कार्यसरलीकरण या दोन्ही बाबतीत सकारात्मक भूमिका स्विकारली.

३ विज्ञान तंत्रज्ञानात झालेली प्रगतीने जी संसाधने उपलब्ध करून दिली त्याचा वापर पारंपारिक व आधुनिक स्त्रियांनी वापर स्विकारला.

४ अत्याधुनिक संसाधनाचा वापर केल्यामुळे स्त्रियांची कार्यक्षमता व तत्परता वाढली.

५ बदलता सामाजिक, आर्थिक परिस्थितीमध्ये विज्ञानात व तंत्रज्ञानात झालेले बदल अप्रिय तरी स्विकारले

६ वैज्ञानिक व तांत्रिक पध्दतीमुळे व्यक्ती स्वातंत्र्याची संकल्पना प्रभावित झाली.

७ वैज्ञानिक व तंत्रज्ञानाच्या युगात स्त्रीयांचा पारंपारिक दृष्टिकोण बदलून आधुनिक युगात त्यांचे व्यक्तिमत्व झळकले.

### संदर्भ ग्रंथ

- १) समाजशास्त्र २०१३ पूर्णे
- २) लोकसंख्या शिक्षण यशवंतराव चव्हाण महाराष्ट्र मुक्त विद्यापीठ, नाशिक, प्रथम प्रकाशन मे २००३

- ३) वनिता कोश उन्मेष प्रकाशन आशा परूळेकर
- ४) युगानुयुगाचे स्त्री दास्यत्व, अनंत तिबिले, प्रकाशन रिया पब्लिकेशन्स नोव्हेंबर २०१२

## शाण्डिल्योपनिषद् प्रत्याहार का समायोजन, मानसिक स्वास्थ्य तथा बलात् जैवधारिता पर प्रभाव(महाविद्यालयीन छात्राओं के संदर्भ में)

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### सारांश

इस अनुसंधान का उद्देश्य महाविद्यालयीन छात्राओं के समायोजन, मानसिक स्वास्थ्य तथा बलात् जैवधारिता पर शाण्डिल्योपनिषद् वर्णित प्रत्याहार के परिणाम का अध्ययन करना तथा आपसी सहसंबंध जानना था। इस अध्ययन का लक्ष्य पुरा करने के लिये १८ से २२ वर्ष आयु समूह की कुल ८० छात्राओं का न्यादर्श के रूप में चयन किया गया। साधारण यादृच्छिक पद्धति से न्यादर्शों का चयन किया गया। न्यादर्शों के समायोजन, मानसिक स्वास्थ्य तथा बलात् जैवधारिता का परीक्षण एवं मापन मानकीकृत बेल्स एडजेस्टमेंट इन्वेंटरी, पॉज़िटिव मेन्टल हेल्थ इन्वेंटरी और वेट स्पायरोमिटर की सहायता से किया गया। प्रत्याहार के प्रभाव का पता लगाने लिये इस अध्ययन में मध्यमान, मानक विचलन, टी परीक्षण एवं सहसंबंध का प्रयोग किया गया। प्राप्त परिणामों से यह देखा गया की महाविद्यालयीन छात्राओं के समायोजन, मानसिक स्वास्थ्य और बलात् जैवधारिता पर प्रत्याहार प्रशिक्षण कार्यक्रम का सार्थक परिणाम होता है।

**संकेत शब्द :** प्रत्याहार, समायोजन, मानसिक स्वास्थ्य, बलात् जैवधारिता

### प्रस्तावना

महाविद्यालयीन छात्रों को विभिन्न समस्याओं से जूझना पड़ता है जैसे सामाजिक, पारिवारिक, संवेगात्मक, शारीरिक और मानसिक स्वास्थ्य संबंधी समस्याएं। महाविद्यालय का वातावरण और अभ्यासक्रम के समायोजन की समस्या भविष्य की चिंता, स्पर्धा में बने रहने की समस्या इन सबके साथ तालमेल बिठाने में कुछ विद्यार्थी सफल होते हैं तो कुछ असफल और परिणामतः विद्यालयों में गुणवत्ता प्राप्त विद्यार्थियों को भी महाविद्यालयीन अभ्यासक्रमों में पिछड़ते हुए देखा गया है। यदि वे उपरोक्त वर्णित समस्याओं से जूझने में समर्थ हो तो संभवतः वे महाविद्यालयीन वातावरण के साथ समायोजन कर पायेंगे तथा अभ्यासक्रम योग्यतापूर्ण ढंग से पूर्ण एवम् भविष्य की समस्याओं से भी जूझने में सक्षम हो पायेंगे।

### प्रत्याहार

योग निद्रा प्रत्याहार की एक विद्या है, जिसमें योजनाबद्ध ढंग से क्रमवार शारीरिक, मानसिक तथा भावात्मक शिथिलीकरण प्राप्त होता है। वस्तुतः योग निद्रा एक तांत्रिक प्रक्रिया न्यास का ही सरलीकृत स्वरूप है। तंत्र में योगी ध्यान के आसन में बैठकर मंत्रोच्चारण करते हुए शरीर के विशिष्ट अंगों के साथ अंग विशेष को फूलों के माध्यम से स्पर्श करते हैं। जटिल—न्यास की इस तांत्रिक विद्या को स्वामी सत्यानंद सरस्वती ने आम लोगों के लिए योग निद्रा के रूप में सरलीकृत कर प्रस्तुत किया है। इस प्रक्रिया के मूल में प्रत्याहार का सिद्धांत छिपा हुआ है।

शाण्डिल्योपनिषद् के प्रथम अध्याय के आठवे खण्ड के अनुसार

अष्टादशसु मर्मस्थानेषु क्रमाद्धारणं प्रत्याहारः ॥१॥

पादाङ्गुष्ठगुल्फजंघाजानूरूपायुमेढ्रनाभिहृदयकण्ठकूपतालुनासाक्षिभ्रूमध्यललाटमूर्ध्नि स्थानानि।

तेषु क्रमादारोहावरोहक्रमेण प्रत्याहरेत् ॥ २॥

अर्थात् अठारह मर्मस्थानों में चित्त को लगाना भी प्रत्याहार है। अठारह मर्मस्थान ये हैं— १) पैर का अंगूठा, २) गुल्फ (एडी), ३) जंघा, ४) जानू, ५) ऊरू, ६) पायु, ७) मेढ्र (शिशन), ८) नाभि, ९) हृदय, १०) कण्ठकूप, ११) कण्ठ, १२) तालु, १३) नासिका, १५) आँख, १६) भ्रूमध्य, १७) ललाट और १८) सिर। इन स्थानों में आरोह तथा अवरोह क्रम से चित्त का धारण करना भी प्रत्याहार है।

### समायोजन

बोरिंग, लैंगफेल्ड व वेल्ड — “समायोजन वह प्रक्रिया है, जिसके द्वारा प्राणी अपनी आवश्यकताओं और इन आवश्यकताओं की पूर्ति को प्रभावित करने वाली परिस्थितियों में सन्तुलन रखता है।”

**पारिवारिक समायोजन:** परिवार की संस्कृति का पालन नम्रता से करना ही पारिवारिक समायोजन है।

**स्वास्थ्य समायोजन:** शारीरिक एवं मानसिक स्वास्थ्य बनाए रखना ही स्वास्थ्य समायोजन है।

**सामाजिक समायोजन:** सामाजिक नीतिमूल्य, सामाजिक नियम एवं आदर्शों का पालन करना ही सामाजिक समायोजन है।



**संवेगात्मक समायोजन :** भावनाओं पर नियंत्रण पाकर दूसरों की भावनाओं का आदर करना ही संवेगात्मक समायोजन है।

**मानसिक स्वास्थ्य :** कुपुस्वामी ने अनुसार— मानसिक स्वास्थ्य का अर्थ है, दैनिक जीवन में भावनाओं, इच्छाओं महत्वाकांक्षाओं और आदर्शों में सन्तुलन रखने की योग्यता। अर्थात् जीवन की वास्तविकताओं का सामना करने और उनको स्वीकार करने की योग्यता।

**जैवधारिता :** निःश्वसन के अवधि की कोई सीमा न रखते हुए, फेफड़ों में पूर्ण श्वास ली हुई अवस्थासे निःश्वसन में निकली हुई वायु (गैस) की मात्रा।

**बलात् जैवधारिता :**

फेफड़ों में पूर्ण श्वास ली हुई अवस्थासे बलपूर्वक अधिकतम निःश्वसन की मात्रा। औसत मूल्य: ३.२ लि. (महिलाओं के लिये)।

### अध्ययन का उद्देश्य

इस अनुसंधान का प्रमुख उद्देश्य महाविद्यालयीन छात्राओं के समायोजन, मानसिक स्वास्थ्य तथा बलात् जैवधारिता पर शाण्डिल्योपनिषद् वर्णित प्रत्याहार के परिणाम का अध्ययन करना तथा आपसी सहसंबंध जानना था।

### अनुसंधान अभिकल्प

इस अध्ययन का लक्ष्य पुरा करने के लिये डिग्री कॉलेज ऑफ फिजिकल एज्युकेशन अमरावती की १८ से २२ वर्ष आयु समूह की कुल ८० छात्राओं का साधारण यादृच्छिक पद्धति से न्यादर्श के रूप में चयन किया गया। चयनित छात्राओंका पूर्व परीक्षण कर आँकड़े प्राप्त किये गये (रॉ स्कोअर)। प्राप्त आँकड़ों के आधार पर टी—स्कोअर का प्रयोग कर कम्पोजिट स्कोअर प्राप्त किया गया। कम्पोजिट स्कोअर के आधार पर छात्राओं को एक समान (होमोजनीयस ग्रुप) दो समूहों में विभाजित किया गया। उनमें से एक को प्रायोगिक तथा दूसरे को नियंत्रित समूह माना गया। प्रत्येक समूह में ४० छात्राएं थीं। केवल प्रायोगिक समूह को ३ माह का मर्यादित प्रशिक्षण दिया गया। प्रशिक्षण पूर्ण होने पर फिरसे दोनों समूहों का पश्चात् परीक्षण कर आँकड़े प्राप्त किये गये।

इस अध्ययन में मानसशास्त्रीय चर समायोजन (पारिवारिक, स्वास्थ्य, सामाजिक और संवेगात्मक समायोजन), मानसिक स्वास्थ्य तथा शरीर विज्ञान सम्बन्धित चर: बलात् जैवधारिता का प्रयोग किया गया। न्यादर्शों के समायोजन, मानसिक स्वास्थ्य तथा बलात् जैवधारिता का परीक्षण एवं मापन मानकीकृत डॉ.आर.के. ओझा (१९६८), मुरादाबाद के द्वारा निर्मित बेल्स एडजेस्टमेंट इन्वेंटरी फॉर कॉलेज स्टुडेंट्स का भारतीय रूपांतरन (हिंदी संस्करण), डा. आगाशे तथा डा. आर. डी. हेलोडे (१९९०), रायपुर द्वारा निर्मित पॉइंटिन्ट

मेन्टल हेल्थ इन्वेंटरी (हिंदी संस्करण) और वेट स्पायरोमिटर की सहायता से किया गया।

### अध्ययन में प्रयुक्त सांख्यिकी

इस अध्ययन में प्रमुख रूप से मध्यमान, मानक विचलन, टी परीक्षण एवं सहसंबंध का प्रयोग किया गया तथा संपूर्ण तथ्यों का विश्लेषण करने हेतु स्टैटिस्टिकल पॅकेज फॉर सोशल सायसेस (एस.पी.एस.एस.)२१ वाँ वर्जन का प्रयोग किया गया।

मध्यमान अंतर पद्धति द्वारा प्राप्त टी—अनुपात और एफ—अनुपात की जाँच करने के लिए सार्थकता का स्तर ०.०५ के विश्वसनीयता स्तर पर निश्चित किया गया।

### सारणी—१

**नियंत्रित एवं प्रायोगिक समूह के एकत्रित समायोजन स्तर का पश्चात् परीक्षण का मध्यमान, मानक विचलन, मध्यमान अंतर तथा टी—मूल्य दर्शानेवाली सारणी**

सूह	मध्यमान	मानक विचलन	मध्यमान अंतर	मानक त्रुटी	टी गणना मूल्य
नियंत्रित छ१=४०	५८.९०	११.५४९	१६. ४५०	२.२६६	७.२५९'
प्रायोगिक छ२=४०	४२. ४५०	८.४८८			

०.०५ विश्वसनीयता स्तर पर सार्थक है। एक सूत्र सारणीबद्ध टी  $0.05(70) = 1.6646$  स्वतंत्रता के अंश (छ१ + छ२ - २) = ७८ है।

### निर्वचन

उक्त सारणी में नियंत्रित एवं प्रायोगिक समूह के एकत्रित समायोजन स्तर का पश्चात् परीक्षण का मध्यमान क्रमशः ५८.९०, ४२.४५० है और उनका मध्यमान अंतर १६.४५० पाया गया।

सांख्यिकीय विश्लेषणके उपरान्त स्वतंत्रता के अंश ३९ पर ०.०५ विश्वसनीयता स्तर का टी गणना मूल्य ७.२५९ प्राप्त हुआ जो कि एक सूत्र वाले परीक्षण के लिए सूचीबद्ध टी ०.०५(३९) का मूल्य १.६८५ से अधिक है। अर्थात् की नियंत्रित एवं प्रायोगिक समूह की महाविद्यालयीन छात्राओं के एकत्रित समायोजन स्तर के पश्चात् परीक्षण में सार्थक मध्यमान अंतर पाया गया।

### सारणी—२

**नियंत्रित एवं प्रायोगिक समूह के मानसिक स्वास्थ्य स्तर का पश्चात् परीक्षण का मध्यमान, मानक विचलन, मध्यमान अंतर तथा टी—मूल्य दर्शानेवाली सारणी**

सूह	मध्यमान	मानक विचलन	मध्यमान अंतर	मानक त्रुटी	टी गणना मूल्य
नियंत्रित छ१=४०	२१. ३७५	३.५७८	४.८७५	०.८३९	५.८१४'
प्रायोगिक छ२=४०	२६. २५०	३.९१४			

0.05 विश्वसनीयता स्तर पर सार्थक है। एक  
सूत्र सारणीबद्ध टी 0.05(96) = 1.6686 स्वतंत्रता के  
अंश (छ १ + छ २ - २) = 96 है।

### निर्वचन

उक्त सारणी में नियंत्रित एवं प्रायोगिक समूह के मानसिक स्वास्थ्य स्तर का पश्चात् परीक्षण का मध्यमान क्रमशः २१.३७५, २६.२५० है और उनका मध्यमान अंतर ४.८७५ पाया गया। सांख्यिकीय विश्लेषणके उपरांत स्वतंत्रता के अंश ३९ पर ०.०५ विश्वसनीयता स्तर का टी गणना मूल्य ५.८१४ प्राप्त हुआ जो कि एक सूत्र वाले परीक्षण के लिए सूचीबद्ध टी ०.०५(३९) का मूल्य १.६८५ से अधिक है। अर्थात् नियंत्रित एवं प्रायोगिक समूह की महाविद्यालयीन छात्राओं के मानसिक स्वास्थ्य स्तर के पश्चात् परीक्षण में सार्थक मध्यमान अंतर है।

### सारणी-३

**नियंत्रित एवं प्रायोगिक समूह के बलात् जैवधारिता स्तर का पश्चात् परीक्षण का मध्यमान, मानक विचलन, मध्यमान अंतर तथा टी-मूल्य दशनिवाली सारणी**

समूह	मध्यमान	मानक विचलन	मध्यमान अंतर	मानक त्रुटी	टी गणना मूल्य
नियंत्रित छ १=४०	२.४५५	०.२८३	०.४०३	०.०६०	६.७०८
प्रायोगिक छ २=४०	२.८५८	०.२५३०			

0.05 विश्वसनीयता स्तर पर सार्थक है। एक  
सूत्र सारणीबद्ध टी 0.05(96) = 1.6686 स्वतंत्रता के  
अंश (छ १ + छ २ - २) = 96 है।

### निर्वचन

उक्त सारणी में नियंत्रित एवं प्रायोगिक समूह के बलात् जैवधारिता स्तर का पश्चात् परीक्षण का मध्यमान क्रमशः २.४५५, २.८५८ है और उनका मध्यमान अंतर ०.४०३ पाया गया। सांख्यिकीय विश्लेषणके उपरांत स्वतंत्रता के अंश ३९ पर ०.०५ विश्वसनीयता स्तर का टी गणना मूल्य ६.७०८ प्राप्त हुआ जो कि एक सूत्र वाले परीक्षण के लिए सूचीबद्ध टी ०.०५(३९) का मूल्य १.६८५ से अधिक है। अर्थात् नियंत्रित एवं प्रायोगिक समूह की महाविद्यालयीन छात्राओं के बलात् जैवधारिता स्तर के पश्चात् परीक्षण में सार्थक मध्यमान अंतर पाया गया।

### सहसंबंधों का निर्वचन (विवरण)

सभी सहसंबंध गुणक जिनका पी-मूल्य ०.०५ से कम है वे ५ प्रतिशत के स्तर पर सार्थक है, उन्हे एक तारांकित (\*) निशान के साथ दर्शाया गया है और जिनका पी-मूल्य १ से

कम है वे १ प्रतिशत के स्तर पर सार्थक है, उन्हे दो तारांकित (\*\*) निशान के साथ दर्शाया गया है।

### सारणी-४

**प्रायोगिक समूह के पूर्व तथा पश्चात् परीक्षण में सहसंबंध दशनिवाली सारणी**

		मानसिक स्वास्थ्य (पूर्व)	मानसिक स्वास्थ्य (पश्चात्)	समायोजन (पूर्व)	समायोजन (पश्चात्)	बलात् जैवधारिता (पूर्व)	बलात् जैवधारिता (पश्चात्)
मानसिक स्वास्थ्य (पूर्व)	सहसंबंध	१	०.९०२**	-०.२८४	-०.२०७	-०.१३४	-०.३०४
	सार्थकता		०.०००	०.०७६	०.२००	०.४०९	०.०५७
मानसिक स्वास्थ्य (पश्चात्)	सहसंबंध		१	-१.४०	-१.२४	-१.८४	-३.२६*
	सार्थकता			३.९०	४.४६	२.५६	०.४०
समायोजन (पूर्व)	सहसंबंध			१	०.९३५	१.११	१.२३५
	सार्थकता				०.०००	४.९४	१.४५
समायोजन (पश्चात्)	सहसंबंध				१	१.४४	१.२२
	सार्थकता					३.७५	१.८९
बलात् जैवधारिता (पूर्व)	सहसंबंध					१	७.७३**
	सार्थकता						०.००
बलात् जैवधारिता (पश्चात्)	सहसंबंध						१
	सार्थकता						

### सहसंबंध का निर्वचन

सारणी क्र. ४.२३ से ज्ञात होता है कि—

१. प्रायोगिक समूह के मानसिक स्वास्थ्य पूर्व परीक्षण का मानसिक स्वास्थ्य पश्चात् परीक्षण के साथ १ प्रतिशत स्तर पर सार्थक सहसंबंध पाया गया।
२. प्रायोगिक समूह के समायोजन पूर्व परीक्षण का समायोजन पश्चात् परीक्षण के साथ १ प्रतिशत स्तर पर सार्थक सहसंबंध पाया गया।
३. प्रायोगिक समूह के बलात् जैवधारिता पूर्व परीक्षण का बलात् जैवधारिता पश्चात् परीक्षण के साथ १ प्रतिशत स्तर पर सार्थक सहसंबंध पाया गया।

### परिणामों की चर्चा

सांख्यिकीय विश्लेषण से प्राप्त परिणामों से यह ज्ञात होता है कि प्रायोगिक समूह के छात्राओं के मानसिक स्वास्थ्य, समायोजन तथा बलात् जैवधारिता में प्रत्याहार प्रशिक्षण कार्यक्रम से महत्वपूर्ण वृद्धि पायी गयी। सांख्यिकीय विश्लेषण से यह भी ज्ञात होता है कि नियंत्रित समूह के मात्र मानसिक स्वास्थ्य में अल्प वृद्धि पायी गयी है शेष दो घटक समायोजन और बलात् जैवधारिता में कोई महत्वपूर्ण अंतर नहीं पाया गया।

इसका एकमात्र संभावित कारण है— प्रायोगिक समूह को अनुशासनबद्ध तरीके से प्रत्याहार प्रशिक्षण दिया गया। प्रत्याहार प्रशिक्षण यह शरीर और मन दोनों ही पर कार्य करता है। जैसे कोई कार्य करना हो तो पहले मन में विचार आना जरूरी है, मन में आये विचार पर बुद्धि निर्णय लेती है—‘करना है या नहीं’, फिर निर्णय के बरहुकूम अहंकार

कार्य करता है और मस्तिष्क को प्रेरणा मिलती है। मस्तिष्क के केन्द्र गतिशील होकर उस विचार के लिए आवश्यक कर्मेन्द्रिय, ज्ञानेन्द्रियों को संवेदना पहुंचाते हैं और वे गतिशील होकर वह कार्य संपादित होता है। अतः किसी भी कार्य सिद्धि के लिए पहले विचार का होना जरूरी है और विचार मन—चित्त भूमि में तरंग रूप से आते हैं। विचार पूर्व संस्कारों से और वर्तमान परिस्थिति के अनुरूप उत्पन्न हो सकते हैं। विचारों का संस्कार भी बनाया जा सकता है, संकल्प के रूप में।

इससे यह स्पष्ट होता है कि प्रत्याहार प्रशिक्षण मानसिक स्वास्थ्य, समायोजन और बलात् जैवधारिता को बढ़ाने का प्रभावशाली तरीका है।

### **सैद्धांतिक दृष्टिसे**

संत ज्ञानेश्वर जी ने 'पसायदान' में सारे संसार के लिये माँगा है कि— 'जो जे वाँच्छिल तो ते लाहो। प्राणिजात'॥ अर्थात् जो जो कुछ जिस किसी को चाहिये वह उन्हे मिले। (गरज सरो वैद्य मरो) यह प्रत्याहार ही है क्योंकि हम किसी के पास क्यों जाते हैं ? कुछ पाने के लिये ! यही ऊर्जाका आदान प्रदान है। क्रिया—प्रतिक्रिया है। महान भौतिक विज्ञानी न्यूटन अपने गति के तीसरे सिद्धान्त में यही बात कहते हैं— 'हर क्रिया उतने ही प्रतिबल की प्रतिक्रिया को उत्पन्न करती है।' अर्थात् हर कार्य फलित होता है, या जो जैसा करेगा वैसा भरेगा। यह सब क्रिया— प्रतिक्रिया को सूचित करते हैं। और यह तब तक चलता रहता है जब तक चाहनेवाला 'वह' पा नहीं लेता। कर्म सिद्धांत यही क्रिया—प्रतिक्रिया श्रृंखला को खंडित करने की बात करता है। और यही बात भगवान श्रीकृष्ण महाभारत में कहते हैं— कर्मण्येवाधिकारस्ये मा फलेषु कदाचन्। अर्थात् कर्म कर फल की आशा मत कर। पसायदान के माध्यम से संत ज्ञानेश्वर जी सूक्ष्म रूप से यही जता रहे हैं कि आपको जो कुछ चाहिये वही सब कुछ आप दूसरों के लिए माँगे (जो जे वाँच्छिल तो ते लाहो प्राणिजात) और यह तभी संभव है जब आप दूसरों को पूरी तरह से बिन शर्त क्षमा कर दें ! यही प्रत्याहार है और तबही आप दूसरों से मानसिक स्तर पर विलग अर्थात् अपनी इन्द्रियों के विषयों से मुक्त हो सकते हैं और परिणामतः आप अपनी ऊर्जा को खर्च होने से बचा सकते हैं और जहाँ चाहिये वहाँ वह ऊर्जा एक दिशा में खर्च कर अपना कार्य सिद्ध कर सकते हैं।

यही बात जोसेफ मर्फी अपनी किताब दि पॉवर ऑफ सबकॉन्शस माईड में लिखते हैं कि— 'आपको बिनशर्त क्षमा देनी है'।

हम छोटे बच्चों के सभी अपराधों को क्षमा करते हैं, क्यों ?, अर्थात् यह सब प्रतिक्रियाओं से बचने के लिए, प्रतिक्रियाओं से बचना ही प्रत्याहार है।

हर कार्य सिद्धि के लिए ऊर्जा चाहिये और वह हममें होती है। हमारे शरीर के दैनिक कार्य—मानसिक कार्य हम उसी ऊर्जा (जीवनी शक्ति या प्राणीक प्रवाह) के माध्यम से पूर्ण करते हैं। हम हमारी अधिकतम ऊर्जा हमारी मानसिक गतिविधियों में खर्च कर देते हैं। अत्यधिक ऊर्जा तो हम हमारी नकारात्मक भावनाओं में खर्च कर देते हैं और फिर बची हुई अल्प ऊर्जा से सकारात्मक (ब्लमंजपअमूवता) कार्य सिद्धि का यत्न हम करते हैं और असफलता हाथ लगती है या दीर्घावधि में वह कार्य सिद्ध होता है। यदि हम हमारी ऊर्जा को एक दिशा में खर्च करें तो वह कार्य जल्द सिद्ध होता है।

अर्थात् विभिन्न दिशाओं में चित्त के लगने से ऊर्जा का क्षय और प्रत्याहार से ऊर्जा का संचय संभव है जो कि अंतरंग योग की शुरुआत है इसीलिये महर्षि पतंजलिने अष्टांग में प्रत्याहार को बहिरंग योग के अंतिम चरण के रूप में रखा है। क्योंकि अंतरंग साधनाएँ (धारणा, ध्यान, समाधि) बिना प्रत्याहार किये संभव ही नहीं। सारा खेल ऊर्जा का है उसका प्रयोग चाहे जैसा कर लीजिये। उसी ऊर्जा का प्रयोग आप सकारात्मक, नकारात्मक या विध्वंसात्मक आदि कार्य सिद्धि के लिए कर सकते हैं बस आपके पास पर्याप्त ऊर्जा हो। और उसी ऊर्जा का संचय हम प्रत्याहार के माध्यम से जीवन में हमारी नकारात्मक संवेगों पर खर्च होने वाली ऊर्जा को बचा कर याने उनसे परावृत्त होकर कर सकते हैं। नकारात्मक भावनाओं के कारण ही हम जीवन में समायोजन करने में सक्षम नहीं होते, हमारे मानसिक स्वास्थ्य में कमी आती है और धीरे—धीरे शारीरिक अस्वस्थता की ओर हम अग्रसर होते हैं। इस अध्ययन से यह सिद्ध हो जाता है कि प्रत्याहार जो हमें हमारे जीवन में समायोजन, मानसिक स्वास्थ्य तथा बलात् जैवधारिता जैसे चरों का समाधान है, वही सफलता की कुँजी है।

### **निष्कर्ष**

सीमाओं के आधीन रहकर प्रस्तुत अध्ययन में प्राप्त परिणामों के आधार पर निम्नलिखित निष्कर्ष निकाले गये हैं:—

१. प्रायोगिक समूह के पारिवारिक समायोजन में तीन माह का मर्यादित प्रत्याहार प्रशिक्षण कार्यक्रम का सार्थक परिणाम पाया गया, जबकि नियंत्रित समूह के पारिवारिक समायोजन में सार्थकहीन परिणाम देखा गया।

२. स्वास्थ्य समायोजन में प्रायोगिक समूह में तीन माह के मर्यादित प्रत्याहार प्रशिक्षण कार्यक्रम का सार्थक परिणाम देखा गया, जबकि नियंत्रित समूह में स्वास्थ्य समायोजन में परिणाम सार्थकहीन था।

३. तीन माह के मर्यादित प्रत्याहार प्रशिक्षण कार्यक्रम का प्रायोगिक समूह के सामाजिक समायोजन में सार्थक परिणाम पाया गया। लेकिन नियंत्रित समूह के सामाजिक समायोजन में परिणाम सार्थकहीन था।

४. प्रायोगिक समूह के संवेगात्मक समायोजन में तीन माह के मर्यादित प्रत्याहार प्रशिक्षण कार्यक्रम का सार्थक परिणाम पाया गया, जबकि नियंत्रित समूह के संवेगात्मक समायोजन में सार्थकहीन परिणाम देखा गया।

५. प्रायोगिक समूह के समायोजन में तीन माह के मर्यादित प्रत्याहार प्रशिक्षण कार्यक्रम का परिणाम सकारात्मक देखा गया, जबकि नियंत्रित समूह के समायोजन में कोई सकारात्मक परिणाम नहीं देखा गया।

६. प्रायोगिक समूह के मानसिक स्वास्थ्य में तीन माह के प्रत्याहार प्रशिक्षण कार्यक्रम का परिणाम सार्थक पाया गया। साथ ही साथ नियंत्रित समूह के मानसिक स्वास्थ्य में भी सार्थक परिणाम देखा गया। लेकिन नियंत्रित समूह की तुलना में प्रायोगिक समूह के मानसिक स्वास्थ्य में अधिक वृद्धि पायी गयी।

७. प्रायोगिक समूह के बलात् जैवधारिता में तीन माह के मर्यादित प्रत्याहार प्रशिक्षण कार्यक्रम का सार्थक परिणाम पाया गया, जबकि नियंत्रित समूह के बलात् जैवधारिता में सार्थकहीन परिणाम देखा गया।

८. मानसिक स्वास्थ्य, समायोजन और बलात् जैवधारिता में आपसी सहसंबंध पाया गया। उपरोक्त निष्कर्षों के आधार पर हम यह कह सकते हैं कि शाण्डील्योपनिषद् वर्णित प्रत्याहार का प्रशिक्षण महाविद्यालयीन छात्राओं के मानसिक स्वास्थ्य में वृद्धि करता है, उनमें विभिन्न परिस्थितियों में समायोजन करने की क्षमता प्रदान करता है तथा उनके बलात् जैवधारिता के वृद्धिगंत करने में भी सक्षम है।

### संदर्भ सूची

1. पंडित ए. महादेव शास्त्री (१९८३), "दि योग उपनिषद्-स्", दि अडयार लायब्ररी अँड रिसर्च सेन्टर, अडयार, मद्रास २०, इंडिया
2. महर्षि, महेश योगी १९८०, "भगवद् गीता," एज ऑफ एनलाईटमेन्ट पब्लिकेशन, जबलपुर
3. मर्फी, जोसेफ, "आपके अवचेतन मन की शक्ति" मंजूल पब्लिशिंग हाउस प्रायव्हेट लिमिटेड, दुसरा माला, उषा प्रिंट कॉम्प्लेक्स ४२ मालविय नगर, भोपाल-४०२००३- भारत आईएसबीएनरू ९७५-८१-८३२२-०८९-७
4. मालथी, ए और दामोदरन, ए. "स्ट्रेस ड्यु टु एकड्राम इन मेडिकल स्टुडेंट्स-रोल ऑफ योग", जनरल फिजियोलॉजी फार्माकोलॉजी, १९९, ४३(२)
5. मिनेटा, ह्यू. एवं सोलार्ज, एम. (२००८), "विश्वविद्यालयी स्तर विद्यार्थियों में छात्रों एवं छात्राओं के मानसिक स्वास्थ्य का अध्ययन", डब्ल्यु डब्ल्यु डब्ल्यु. एनबीइआर ओआरजी/पेपर/डब्ल्यु ७५८५ पीडीएफ
6. वर्मा, अरूणा (२००९), "विभिन्न माध्यमिक विद्यालयों के विद्यार्थियों के व्यक्तित्व, मूल्यों एवं संवेगात्मक परिपक्वता पर पाठ्य सहगामी क्रियाओं के प्रभाव का अध्ययन", पीएच.डी. उच्च अध्ययन शिक्षा संस्थान गांधी विद्या मन्दिर, सरदारशहर
7. विनोद, एस.डी., विनोद, आर.एस. और खिरे, उषा (१९८८) "इफेक्ट ऑफ कॉम्प्रेहेंसिव ट्रेनिंग इन अष्टांग योग ऑन रिएक्शन टाइम, अँज ए मेजर ऑफ जनरल इन्टेलिजन्स, इन रिलेशन टु एज, सेक्स, अँड सोशियो-इकोनॉमिक स्टेटस", योग मीमांसा, वौल्यूम३३, क्र.१ अप्रैल १९९८, कैवल्यधाम, लोनावला
8. विष्णुप्रसादशर्मणा (१९७०), "सांख्य-कारिका", चौखम्भा संस्कृत सीरीज आफिस, गोपाल मंदिर गली, पो.आ.चौखम्भा, पो. बा.८, वाराणसी-१ भारत, (द्वितीय संस्करण)
9. वेदालंकार रघुवीर (१९९१), "उपनिषदों में योग-विद्या", के. सी. पब्लिशर्स, ४४८, रिंग रोड, आजादपूर, फ्लॉई ओवर, दिल्ली- ११००३३, प्रथम संस्करण।
10. सरस्वती, स्वामी सत्यानन्द (२००५), "योगनिद्रा", योग पब्लिकेशन्स ट्रस्ट, गंगादर्शन, मुंगेर, बिहार, भारत, आईएसबीएन:८१-८५७८७-५३-०, तृतीय संस्करण।
11. साळुंखे, सर्जेराव (१९९६), "समाजशास्त्रातील मूलभूत संकल्पना", नरेन्द्र प्रकाशन, बुधवारपेठ, पुणे।
12. सिंह, डॉ. लाभ, तिवारी, डॉ. गोविन्द, "असामान्य मनोविज्ञान", विनोद पुस्तक मंदिर, रांगेय राघव मार्ग, आगरा २: आईएसबीएन: ८१.७४५७.०६६.७
13. एचटीटीपी://डब्ल्युडब्ल्युडब्ल्यु.दि-ईमोशन्स.कॉम/ आर्टीकल्स-कार्ला वेलेंसिया. एचटीएमएल।
14. एचटीटीपी://डब्ल्युडब्ल्युडब्ल्यु.बीआरआइएनएमएसी.सीओ.युके/स्पायरोमीटर.एचटीएम।
15. क्रेग, गैरी, "ई एफ टी मैनुअल," छठवाँ संस्करण, डब्ल्युडब्ल्युडब्ल्यु.गागाब्लिस.नेट।

## साहित्यातून पर्यावरण दर्शन : कविता

प्रि.व. देशमुख

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### सारांश

मानवाचे निसर्गाशी असणारे नाते घट्ट आहे. तेवढेच जर मानवाने पर्यावरणाशी नाते जोपासले तर निश्चितच मानवाचा विकास साधल्या जाणार आहे. पण या महत्वपूर्ण बाबीकडे नेमका मानव दुर्लक्ष करतो. यामुळे पर्यावरणाचा न्हास होत आहे. आज या गोष्टीकडे समाजाचे दुर्लक्ष असले तरी साहित्यिकांचे मात्र दुर्लक्ष नाही. याबाबीकडे संतापासून आधुनिक साहित्यिकापर्यंत प्रत्येकाने कसे लक्ष दिले याचा विचार या शोधनिबंधात मांडण्याचा प्रयत्न सदर शोधनिबंधकाचा आहे.

**मुख्य शब्द :** पर्यावरण, निसर्ग, मानव, संत, साहित्य, साहित्यिक, वृक्ष, वसुंधरा.

### प्रस्तावना

मानवी मन नेहमीच निसर्गाकडे आकर्षित होते. निसर्ग म्हणजे एक सुंदर चित्र ! चैत्र ते फाल्गुन मराठी महिण्याची सुंदर वीण ऋतुचक्रातून सुंदर भावविश्व आणि चैतन्य देते, जगायला शिकविते, अर्थात पर्यावरणाला जपायला सांगते. आज पर्यावरण मनाला नव्हे तर सर्व सृष्टीला वास्तवांचे चटके देणारे आहे. या पर्यावरणाची आपले प्राचीन काळापासून असलेले नाते साहित्यातून अभिव्यक्त होते. लोकगीत, जात्यावरच्या ओव्या, कथा, कादंबरी, नाटक इत्यादी साहित्य प्रकारातून निसर्ग आणि मानव यांचे असलेले घट्ट नाते दिसून येते. अंगाईगीत, बडबडगीत विविध कवितेतून कवीने सृष्टीचा सुंदर साज इथे मांडला आहे. 'साहित्यातून पर्यावरण दर्शन : कविता' या विषयातून पर्यावरण संरक्षण काळाची गरज आहे. याहीपेक्षा आपल्या पूर्वजांनी संत मुनींनी, साहित्यिकांनी आणि पर्यावरण प्रेमींनी केलेले कार्य तसेच मराठी कवितेतून आलेला निसर्ग विविध कवितेतून अर्थात साहित्यातून पर्यावरणाचे घट्ट नाते कसे मांडले, ते दर्शवणे हा उद्देश आहे.

### मराठी कवितेत पर्यावरण दर्शन

संत तुकाराम महाराजांच्या शब्दात निसर्गाचे नाते प्रगटते,

“ वृक्षवल्ली आम्हा सोयरे वनचरे ।

पक्षीही सुस्वरे आळविती ॥

सुंदर पहाटेच दर्शनही तेवढ्याच सुंदरतेने राष्ट्रसंत तुकडोजी महाराज यांनी 'ग्रामगीता मध्ये' निसर्गाचे सुंदर रूप मांडते.

“अरुणोदयाची सुवर्णप्रभा । दिसे लावण्या शोभा ।

निसर्ग वाढवी शांतिप्रतिभा । पावती योगी ॥

आपण वृक्षावल्ली, पर्यावरण याला सखा, मित्र, संवगडी म्हणून मानतो. पण आज मानव पर्यावरणातून दूर चाललेला आहे.

ऋतुचक्राचा हा खेळ, ढासळते पर्यावरण अनेक संकटाला घेऊन येत आहे. पृथ्वी अर्थात वसुंधरा आज विविध प्रदूषणाने

संकटाने वेढलेली आहे. जलप्रदूषण, वायुप्रदूषण, ध्वनी प्रदूषण इत्यादीमुळे होणारी हानी विविध समस्यांना घेऊन येते. वर्षाऋतूचे आगमण त्या पावसाचे स्वागत करायला सज्ज असलेले मानवी मन चातकासारखा मृग नक्षत्राच्या पावसाची वाट पाहते. कधी अतिवृष्टीने खचतो तर मृगनक्षत्र कोरडे जाताच आयुष्यात दुःख, चिरवेदना घेऊन येते अशावेळी साधभोळ मन, 'धोंडी काढते' 'धोंडी धोंडी पाणी येऊ दे.....' पण निसर्गही ढासळत्या पर्यावरणाला बळी पडतो. हवालदिल झालेला शेतकरी वर्षागीते यातून पावसाची संवाद साधतांना,

“ये बापा ये, पावसा ये  
तुह्या चरणाची पूजा मांडू दे  
ये बापा ये  
भुई तापली माती सुकली  
मिरगाची सावली नाचत येऊ दे  
ये बापा ये.....”

आर्त मनाची साद ऐकून धावत येणारा पाऊसही पूर्वी होता पण तो रुसतो ढासळत्या पर्यावरणाने डोंगरदऱ्या हिरव्यागार झाडावेलीने नटलेल्या होत्या तर पावसाच्या पाण्याने नदीलाही येणारे अनेक आनंद देऊन जायचा हे सुंदर पावसाच आगमन मनाला चैतन्य देतो.

“पावसाची सर, आली घरावर

भिजलं माहं देवघर

पावसाची सर, बिन्दाबनावर

अंबुताची धार देहावर.....”

वर्षाऋतूचे लोकजीवनात असलेले महत्व इथे दिसते अगदी वेळेवर पाऊस येण त्यासाठी भेगाळल्या भूईकडे पाहून पावसाच्या काळ्या ढगाची वाट पाहणारे आपण ! आज पाणी टंचाईचा प्रश्न आपल्याला ऐन पावसाळ्यात भिषण दुष्काळाने व्यथित करतो.

अंगाई गीतातून 'चिऊ-काऊ' चा घास भरवित अनेक कवितेतून अगदी बालपणीच आपल निसर्ग, झाडवेली, पशूपक्षी, नदी, पहाड, डोंगरदऱ्या इत्यादी सोबत नाते जुळते,

मग तरीही आपण या पर्यावरणाचा तोल ढासळू का देतो ?  
आदिवासी लोकगिते—नृत्यातून संगीताच्या चालीवर मेघराजाच  
अस्तित्व प्रगट करणारे ! वास्तवाला वाघाच्या तालावर  
थिरकणारी ती पावलं,

“कहाणी ऐक रं गुनवंता — गुनवंता  
गुनवंता—गुनवंता—गुनवंता—भगवंता ॥  
मेघराजा, कोपलास कां रे — कोपलास का ?  
आमच्यावरी रुसलास कां र — रुसलास का ?  
तुड्याविना रं..... पळालं पाणी  
वनराजा हा आनिक राणी  
गात नाही रं गान कुणी  
दीन झालीया त्येची वाणी

पोर रडती अन् बायका अन् बायका अन् बायका मेघराजा,  
कोपलास कां रं — कोपलास का ? वास्तवदर्शन अस्वस्थ  
करणारे आहे. ‘कृत्रिम पाऊस ही पाडण्याचा प्रयत्न केला पण  
तो किती परवाडणारं आणि तो खर्च झोपणारा नक्कीच नाही  
शेवटी कृत्रिमता वसुंधरेला हिरवा साज देऊ शकत नाही हे  
सत्य आहे.

याच समवेत भिल्लगिते, भिल्लनृत्यातून निसर्गाचे देखणे रूप  
मनाला स्पर्श करून जाते,

“हिरवळ खाली, भवती झाडी,  
आभाळाची वर निळसर माडी  
पोरं तर पगा समदीं उघडी

आठ दिशांची हाय पाखर — हाय पाखर — कशी चौफेर  
पाना —फुलांची झाकुनी अंग  
हिरवीगार रान आमच्या संग  
सपनामंदी होऊनी दंग

### निसर्ग कवितेतील पर्यावरण

पृथ्वी ही निसर्गाने बहरलेली आहे. निसर्ग हा मानवाला सादर  
घालतो. पर्यावरणाचे संतुलन साधारणे असेल तर निसर्गाची  
मैत्री करावी लागेल.

“पृथ्वीवर नंदनवन फुलवुया  
चला, आपण संकल्प करू या  
आपली सृष्टी चैतन्याने सजवू या  
अन् पृथ्वीवर जीवन फुलवू या”

निसर्ग हा आई प्रमाणे प्रेमाची ऊब देणारा । रौद्र रूप धारण  
करणारा निसर्ग । पृथ्वीवर नांदणार जीवन म्हणजेच निसर्ग या  
विश्वाचा अफाट पसाऱ्याला जे जे स्वयं निर्मित आहे जे  
मानवाने निर्माण केलेले नाही. उंच डोंगर, दऱ्या, पहाडरांजी,  
वृक्षवेली, रंगीबेरंगी पाखरं, पशूसृष्टी, जलाशय, नदी, सरोवर,  
सागर, कडयाकडयावरून कोसळणारा अविरत धबधबा,  
आकाशातील सप्तरंग, वाऱ्याची झुळूक, नदीचा पाण्यात  
पडलेलं आकाशाच प्रतिबिंब, पाखराची किलबिल इत्यादी  
चैतन्यात वसुंधरांचे सुंदर रूप केवळ कथा, कांदबरी आणि  
कवितेच राहिल का ?

साहित्यिकांनी पर्यावरणाचा तोल सांभाळणाऱ्या या चैतन्याला  
आपल्या कवितेतून सुंदररित्या साकारले. परंतु आपल्या  
पूर्वजांनी आपल्याला सोपवलेला निसर्गाचा समतोल आपल्या  
सांभाळता आला नाही की आपण ते फारस मनावर घेतलं  
नाही. दुदैवच आपले म्हणूनच प्रश्न पडतो की पुढची  
लिहिणारी साहित्यिकाची पिढी या निसर्गावर कशी लिहील.  
जेव्हा पर्यावरणाने सृष्टीच उध्वस्त होईल.  
खेडे, शेत—शिवार, भौगोलिक वैशिष्ट्यपूर्णता यामुळे ग्रामीण  
कवितेचे निसर्गाशी असलेले नाते स्वाभाविकपणे निर्माण होते.  
निसर्ग वर्णनाचे अनेक अविष्कार सहजपणे येतो, कवी ग. ह.  
ठोकळ यांच्या ‘जात्यावरलं गाणं’ यातून आपले नाते  
आकाशाची जोडतात.

“झुंजुमुंज झालं, सुकदेव वर आला  
पहाटचं वारं कसं झोंबत अंगाला”

वाऱ्याची गोड गाणी, भावस्पर्शी वाऱ्याची झुळूक, उगवतीचा  
शुक्र, किर्न वनराई, तारा इत्यादीतून पर्यावरणाशी जुळलेली  
नात्याचे दर्शन घडविते. कवितेतून—गीताकडे हा कवी ना. धे.  
महानोर यांच्या कवितेतील शब्द मनावर रंगाच गोंदण करते.

“ओळ जांभळया मेघाची नाहे नदीच्या पाण्यात  
वाट झुंजुमुंजु होते पीक मावेना शेतात  
लक्ष पाखरांचे थवे खेळ मांडती पाण्यात  
गळे नभ असावध खेडे पाण्यात बुडून  
लांबणीच्या तारांवर चिंबचिंब थेंब ऊन”

स्वच्छ पावसाळी हवा, निसर्गाचे सप्तरंग पर्यावरणाचा समतोल  
सांगणारे होते.

### ग्रामीण जीवनात पर्यावरणाचे स्थान

पर्यावरणाविषयी (१९९२) जून मध्ये ‘वसुंधरा शिखर  
परिषद’(ऱ्ळब्क) १२ दिवस ब्राझिलमधल्या रिओडी जीनेरा या  
शहरात घेण्यात आली. यात १५६ राष्ट्रांनी भाग घेऊन या  
परिषदेत पर्यावरण विचार आणि नैसर्गिक साधनसंपत्ती  
यांच्यातील संतुलनावर भर देण्यात आला. तसेच मानव  
पर्यावरण संबंधातील मुद्यावर चर्चा करण्यात आली. उदा.

- १) उपलब्ध साधन संपत्तीचा वापर व पध्दती.
- २) पृथ्वी हवामानविषयक परिवर्तन
- ३) जीवजंतूंच्या अस्तित्वाचा प्रश्न
- ४) प्रदूषण नियंत्रणाचे प्रभावी मार्ग
- ५) पृथ्वी संरक्षण निधीची (म्च) उभारणीतून राष्ट्रांसाठी  
परस्परीक तंत्रज्ञानाची  
सुलभ देवाण घेवाण.
- ६) पर्यावरणाबरोबरच विश्वबंधूत्वाची भावना रुजविणे.
- ७) विकसित राष्ट्रांनी जास्त जबाबदारी घेणे.
- ८) वैज्ञानिक चाचण्या, अणुबॉम्बनिर्मिती, प्रलयकारी अस्त्राचा  
वापर या विषयी  
नियंत्रके व उपाययोजना इत्यादी.

पर्यावरणाचे संवर्धन करण्याकरिता शाळा, महाविद्यालयातून पर्यावरण व मानवी नाते जपणारे पर्यावरण शिक्षणाचे धडे देऊन जनजागृतमी केली जात आहे. कवी ग. दी. मांडगूळकर यांच्या कवितेत पावसाला साद आणि नृत्यातून पावसाचे रूप सामोरं येते,

“ नाच रे मोरा, आंब्याच्या वनात ” तणमोर, मोर सुंदर नृत्य करतो. हा मोर आपल्यालाच नव्हे. तर सर्वानाच वेड लावणारा पक्ष्याचा राजा मोर निसर्गाच्या सुंदर रूपाला बालविश्वाला सुंदर भेट देणारे । निसर्गाशी नाते जुळविणाऱ्या कविता पर्यावरणाविषयी सुचित करते.

वृक्ष संभार या लेखात कवी गोपाल निळकंठ दांडेवर असा उल्लेख करतात. त्यावेळी श्रीराम दण्ड कारण्यात प्रवेशात तेव्हा त्यांना जे दिसले, “इथे अश्वकर्ण, ककुंभ, बिल्व, तिंदूक, पाटक, बादरी, खरिद, इत्यादी महावृक्षाची नुसती दाटी झालेली आहे. झिलझिल अशा शब्दात करणाऱ्या कीटकांच्या समुदायांनी ते युक्त आहे. यात नाना प्रकारची श्वापदे नुसती दाटली आहेत. दारुण शब्द करणारे मासपक्षी, सिंह, व्याघ्र, वराह, गंज, इत्यादी पशूच्या संचारामुळे नाना महावृक्ष उन्मळून पडले आहेत”

समृद्ध अशी वनसंपत्ती झपाट्याने न्हास होत आहे. निसर्गाच्या बहिणाबाई चौधरीने तर निसर्गाला देव मानून कष्ट करणाऱ्या धरित्रीचा जन्म सोहळा मांडला.

“बीज टटोर भुईत । सर्व कोंब आले वन्हे

गहयरल शेत जसं । अंगावरती शहारे

ऊन वाऱ्याशी खेयता । एका —एका कोंबातून

परगरले देन पानं । जसे हात जोडिसन

बीज रुजणं, अंकुरण, बहरणं आणि मोहरणे यातून निसर्ग

फुलतो.

आज कोरडा दुष्काळ, ओला दुष्काळ, मदापूर, भूकंप सुनामी, भयानक, वादळ इ. विविध घटनांनी मानव उध्वस्त होत आहे. महाराष्ट्रातील समृद्ध वने ओसाड होऊ लागली.

निसर्गातील चंद्र, सूर्य, तारे, आभाळ

गीतकार नाना (विजय फडणवीस) यांच्या विठ्ठला देई दर्शन’ या कवितेत.

“माझ्या पंढरीतून निघालो तुझ्या पंढरीला ।

एखादी भीमा चंद्रभागा गावाकडे धाड

पालखीत बसूम दे त्या ज्वारी बाजरीला ।

तुझ्या रिंगणाचा घोडा किती डौलदार

माझी गाय बैल झाली भुकेनं बेजार

तुका नामाची बी पोट गेली खपाटीला”

जीवनाच वास्तव बदलत्या ऋतुचक्राने उध्वस्त करते.

### सृष्टी व पर्यावरण विषयक लोकसमजुत

सृष्टीविषयक नाते उलगडून टाकणारे आहे. उदा. घोडा, गाढव, सिंह, वाघ, कुत्रा, गाय, म्हैस, बैल, बकरी, बोकड, हत्ती, मांजर, लांडगा, कोल्हा, कोकीळ, पोपट, चिमणी, कावळा, साप, मांसा इत्यादी पशुपक्षी पाणी यांचाही पर्यावरणाशी नाते सांगणाऱ्या लोकसमजुती तसेच मनुष्य आणि प्राणी भूकंप, महापूर, प्रलय, दुष्काळ, झाडीचा पाऊस, झाडे, फुले, बिया, कंद, खडक, खडे, दगड, माती, पाणी, हिरे, माणके, सोने, लोखंड, सूर्योदय, पौर्णिमा, अमावस्या, चतुर्थी, ग्रहणे, धुमकेतू, तारे, दिशा—वेळा, नांगरणी, पेरणी, कापणी, मळणी इत्यादी मधून प्राचीन काळापासून जुळलेले मन पर्यावरणाचे महत्व दर्शविणारे आहे.

### निष्कर्ष

- 1) मराठी साहित्य हे मानवी मनाची आरसा आहे.
- 2) निसर्गातील विविधरूपे कवितेतून प्रगटतात तसेच पर्यावरणाचे दर्शन घडवतात.
- 3) रंग, गंध, स्पर्श व दृक संवेदना अभिव्यक्त होतात त्या पर्यावरणाशी संलग्नता असल्यानेच.
- 4) निसर्गातील चित्रमयता वास्तव दर्शविते.
- 5) मानवी जीवन व निसर्ग यांचे नाते व्यक्त करते.
- 6) सर्जनशिलता, नवनिर्मिती इत्यादीमधून पर्यावरणाची बदलती रूपे दिसून येतात.
- 7) पक्षी, प्राणीसृष्टीचे दर्शन पर्यावरणाच्या माध्यमातून घडते.

### समारोप

‘साहित्यातून पर्यावरण दर्शन : कविता’ मराठी यांचे नाते प्रकट करतांना अनेक प्रतिक, प्रतिमामधून ते अभिव्यक्त केले. पर्यावरण निसर्गाच्या विविध रूपातून येते. लोकगित, अंगाईगीत, बालगीते, निसर्गकविता, प्रेमकविता, सामाजिक कविता इत्यादी मधून आलेली तरल भावविश्व पर्यावरणाशी असलेले नाते सूचित करते, याचा प्रयत्न येतो, बालविश्वात प्रवेश केलेली पाखराची बोली, पक्षाचे रंग, निसर्ग रंग, सूर्योदय ते मावळतीचे रंग मनाला वेड लावणारे /पर्यावरणाला खऱ्या अर्थाने कवीमनाने आपल्या कवितेतून सुंदर दर्शन घडविले.

### संदर्भग्रंथ सूची

1. प्रकाशन—विश्व हिंदू परिषद— ‘संत तुकाराम गाथा’ प्रकाशक चंद्रकांत ठाकर — विश्व हिंदू परिषद, नागपूर
2. राष्ट्रसंत तुकडोजी महाराज — ‘ग्रामगीता’ महाराष्ट्र राज्य पाठयपुस्तक निर्मिती व अभ्यासक्रम मंडळ पुणे, ४, प्रथमावृत्ती १९५५
3. संपादक — प्रा. भैरव गुरव — ‘जिन्नाघ’ मराठी ग्रामीण कविता, हिरण्यकेशी प्रकाशन, पुणे, प्रथमावृत्ती १९९४
4. कुसुमाग्रज ‘समिधा— कुसुमाग्रज’, कॉन्टिनेन्टल प्रकाशन, पुणे द्वितीयावृत्ती, १९७९

## इतिहास लेखनात विज्ञान व तंत्रज्ञानाचा उपयोग एक अभ्यास

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### सारांश

इतिहास विषय सर्व सामाजिक शास्त्रांचा पाया मानला जातो. त्यामुळे सामाजिक शास्त्रामध्ये सदर विषयाचे स्थान महत्वपूर्ण असून सामाजिक शास्त्राचा शिरोमणी म्हणून महत्व आहे. असे असले तरी इतिहास विषयाचा अभ्यास विषय हा भूतकाळ मानला जातो. परिणामी सदर विषयाचा आणि विज्ञान तंत्रज्ञानामधील प्रगतीचा संबंध काय ? असा प्रश्न इतिहासाची ओळख नसणाऱ्यांकडून उपस्थित होणे शक्य आहे. पण इतिहास विषय भूतकालिन काळाशी संबंधीत असला तरी तो अभ्यास विषयाचा मुख्य घटक मानवाने सर्वच क्षेत्रात नेत्रदिपक प्रगती कशी साधली हे तपासून पाहून पुढील पिढीला आखणी त्यात सूधारणा साधता येतील का ? म्हणजेच सदर विषयामध्ये मानवी सोबतच मानवी मूल्यांचा आकलनाचे विचार होतो. तसेच सदर प्रगती कृष्णी कशी आणि केव्हा साधली याची शास्त्र शुध्द मांडणी करण्याचे कार्य सदर विषयाद्वारे केले जाते. भूतकाळ आणि वर्तमानकाळ यांना जोडणारा महत्वपूर्ण दूवा म्हणून आणि भविष्यकाळाला मार्गदर्शन करणारा दिपक म्हणून सदर विषयाचे महत्व मानवी जीवनामध्ये अनन्यसाधारण असे महत्व असल्यामुळे सदर विषयाचा आणि विज्ञान तंत्रज्ञानातील प्रगतीचा कसा संबंध प्रस्थापित होतो हे स्पष्ट करण्याच्या उद्देशाने सदर शोधनिबंध लेखनाचा प्रयत्न आहे.

**मुख्य शब्द :** इतिहास, विज्ञान, तंत्रज्ञान, शास्त्रज्ञ, स्मरणशक्ती, वर्तमान, भूतकाळ, समाज पुरातत्वविद्या, कार्बनडेटिंग.

### प्रस्तावना

इतिहास त्रिकलाबाधीत असा अभ्यास करणारा विषय मानला जातो. इतिहासाचे क्षेत्र अत्यंत विस्तीर्ण असून ते जगाच्या भू-पृष्ठाइतके अमर्याद आहे. अशा विषयाची व्याख्या करण्यापूर्वी इंग्रजी भाषेतील History या शब्दाचे मूळ ग्रीक भाषेमध्ये मिळते. ग्रीक भाषेत हा शब्द learning, शिकणे या अर्थाने वापरलेला आहे. ग्रीक तत्वज्ञ शास्त्रज्ञ ऑरिस्टॉटल यांनी इतिहासाचा अर्थ नैसर्गिक घटनांचा शास्त्रशुध्द अभ्यास करणारा विषय असा सांगितला आहे. अशा घटनांचा अनुक्रम मागे पुढे झालेला असला तरी चालेल. काळाच्या ओघात मानवी समाजाच्या एकंदर विचारसरणीमध्ये बदल होत गेले आणि नव्या शास्त्राचा शोध लागल. इंग्रजीमध्ये ज्याला Science म्हणतात त्याला लॅटिनमध्ये Scientia म्हणतात. इतिहास या शब्दाचा दुसरा उल्लेख जर्मन भाषेतील Geschichte या शब्दाने करतात. Geschichte चा अर्थ काय घडले ? थोडक्यात इतिहासाचा संबंध गतकाळात घडलेल्या घटनांशी असतो. तो याच शाब्दिक अर्थाने होत. मानवाचा गतकाळ एकत्रीत करणे अत्यंत कठीण असते. समाजातील अत्यंत बुद्धीमान लोकांनासुध्दा स्मरणशक्तीच्या जोरावर त्यांच्याच जीवनातील घटना पुन्हा लोकांसमोर जशाच्या तशा मांडता येत नाहीत. कारण मानवी जीवन, घटना, व्यक्ती, विचार व इतर अनेक घटनांनी इतके गुंतागुंतीचे असते की, ते समाजापुढे जसेच्या तसे मांडणे कठीण असते. इतिहासाचा वर्ण्य विषय हा असाच गतकाळाशी निगडित असतो. म्हणून यासंधीसुध्दा भाष्य करणे लिहिणे किंवा अन्वयार्थ लावणे अतिशय अवघड असते.

### इतिहासाची व्याख्या

इनसायक्लोपिडीया मध्ये इतिहास म्हणजे घटनांशी जंत्री किंवा खुद घटना अशा अर्थाने हा शब्द वापरतात. इतिहास या शब्दाशी निगडित दोन अर्थ मानलेले आहेत. एक चौकशी करणे आणि दोन एखाद्या वस्तुस्थितीसंबंधी काही विधान करणे हे होते. जॅकोब बर्कहार्ट यांचे मते इतिहास म्हणजे पुढल्या युगातील लोकांना मागील युगातील लोकांनी केलेल्या उल्लेखनीय घटना म्हणजे इतिहास. फ्रान्सीस बेकन हा इंग्रजी विद्वान म्हणतो की, मानवाला शहाणा बनविणारी विद्यशाखा म्हणजे इतिहास होय. प्रो. फिंडले च्या मते, इतिहास म्हणजे अनेक घटनांमध्ये सुसंगती लावून त्यांचा परस्परसंबंध प्रस्थापित करणारी विद्याशाखा म्हणजे इतिहास होय. प्रो. इ. एच. कार हा इतिहासकार म्हणतो, इतिहास म्हणजे वर्तमानकाळ व भूतकाळ यामधील कधीही न संपणारा संवाद होय. प्रो. नेव्हिस या अमेरिकन इतिहासकारांच्या मते, इतिहास म्हणजे भूतकाळाला वर्तमानकाळाशी जोडणारा पूल आहे व तो भविष्यकाळाचा मार्गदर्शक आहे. यांच्यामते, इतिहास म्हणजे मानवाच्या हातातील कंदील आहे. तो मानवाच्या प्रत्येक पावलावर प्रकाश टाकत असतो. आणि भूतकाळ व वर्तमानकाळ यांच्यातील अंधार भरून काढण्याचे काम करतो. या प्रकाशाच्या आधारावर मानवाला भविष्यकाळाची चाहूल घेता येते.



वरील व्याख्यांवरून इतिहास म्हणजे काय ? हे थोडक्यात लक्षात येण्यास मदत झाली असावी.

### **इतिहासाचे स्वरूप**

मानव हा समाजप्रिय /समुहशिल प्राणी असल्यामुळे त्यांच्या बुद्धीचा विकास इतर प्राण्यांपेक्षा जास्त झाला असावा. त्यामुळेच त्याला वर्तमानकाळ समजतो. भविष्यकाळाची चाहूल घेता येते व या दोन प्रक्रियांच्यामुळे त्याच्या ठिकाणी भूतकाळासंबंधी उत्सुकता निर्माण होते. इतिहासासंबंधी मानवी प्रगतीबरोबर अनेक कल्पना अस्तित्वात आल्याव त्यामध्ये बदल होत गेले. मानव व राष्ट्र यांच्यातील परस्परसंबंध हे सतत बदलत असतात. आणि हे बदल परिणामकारक असतात. फार पूर्वी इतिहासासंबंधी वेगळ्या वेगळ्या कल्पना होत्या. इतिहासाचे स्वरूप सुद्धा मर्यादित होते. एखादा राजा ज्याने केलेल्या लढाया, जिंकलेले प्रदेश, त्यांची प्रेमप्रकरणे याहून त्यांचे स्वरूप भिन्न नव्हते. इ. स. च्या पंधराव्या शतकाच्या सुमारास युरोपमध्ये पुनरुज्जीवनाच्या प्रक्रियेला प्रारंभ झाला. अंधश्रद्धेवर बुद्धीवादने विजय मिळविला. व्यक्तीनिष्ठतेपेक्षा वस्तुनिष्ठतेला महत्व प्राप्त झाले. प्रत्येक क्षेत्रात बुद्धीप्रमाण्य निर्माण झाले. इ. स. च्या अठराव्या शतकात युरोपात औद्योगिक क्रांती झाली. त्या क्रांतीचा परिणाम म्हणून जीवनाच्या प्रत्येक अंगावर फार मोठा परिणाम घडून आला. सर्व शास्त्रे व कला यांचा नव्याने अभ्यास सुरु झाला. इ. स. १७८९ ला घडून आलेल्या फ्रेंच राज्यक्रांतीनंतर एखादी कर्तबगार व्यक्ती सुद्धा स्वतःच्या कर्तत्वाने मोठ्या पदावर जाऊ शकते हे पहिल्या प्रथम सिद्ध झाले. यामुळे पूर्वीच्या काळी राज व धर्म या दोनच बाबींच्या भोवती इतिहास फिरत होता. ती प्रक्रिया मागे पडून राजापेक्षा सामान्य माणसाला महत्व आहे. सामान्य मनुष्य व समाज हे इतिहासाचे प्रमुख घटक बनलेत. परिणामी इ. स. नाच्या एकोणवीसाव्या शतकाच्या सुरुवातीपासूनच इतिहासाकडे पाहण्याच्या भूमिकेमध्ये बदल घडून आला. इतिहासकारांनी गतकाळाविषयी अति प्रेम ही दाखविण्याचे कारण नाही किंवा विनाकारण कठोर टिकाही करण्याचे कारण नाही. भूतकाळाचे चांगले ज्ञान प्राप्त करून त्याचा वर्तमानकाळावर काय परिणाम होतो याचा अभ्यास करण्याची पध्दत सुरु झाली. अशा पध्दतीमधून वेगवेगळे दृष्टीकोन अस्तित्वात आले. संशोधकांनी तीन बाबींवर भर द्यावा असे मानले जाऊ लागले त्या तीन बाबी अशा.

- १) सत्याचा शोध घेतला पाहिजे.
- २) गतकाळात ज्या ज्या घटना घडल्या त्या त्या जशाच्या तशा लोकांच्या पुढे मांडल्या पाहिजेत.
- ३) प्राप्त झालेल्या घटनांचा अन्वयार्थ त्यांचे स्पष्टीकरण केले पाहिजे व त्या घटना समाजापुढे आकर्षक भाषेत मांडल्या पाहिजेत.

### **इतिहास शात्र की कला**

इतिहास लेखन क्षेत्रामध्येच इ. स. नाच्या विसाव्या शतकाच्या अगदीच प्रारंभी म्हणजेच इ.स. १९०३ पासून इतिहास शास्त्र की कला वाद निर्माण झाला. गेल्या शतकभरात या विषयावर बरीच साधक बाधक चर्चा झाली. दोन्ही पक्षांनी आपापली बाजू जोरकसपणे मांडली पण हळूहळू हा वाद संपुष्टात येऊन इतिहास हे एक सामाजिक शास्त्र आहे ही गोष्ट सर्वांनीच मान्य केली आहे. इतिहासाला शास्त्राचा दर्जा प्राप्त झाल्यामुळे स्वाभाविकच इतर शास्त्रामध्ये जसे नियम असतात तसे नियम काळाच्या ओघात इतिहासामध्ये निर्माण झाले. कोणतेही शास्त्र नियमाशिवाय असत नाही. त्याचप्रमाणे इतिहासात सुद्धा नियम आहेत. कोणत्याही शात्राचा विकास अल्पपणे होऊ शकत नाही. त्याच्या मदतीला इतर शास्त्रेही असावी लागतात. या सार्वत्रिक नियमाप्रमाणे इतिहासाला सहाय्यकारी ठरणारी अनेक शास्त्रे काळाच्या ओघात निर्माण झाली त्यामुळे इतिहास संशोधकाला योग्य दिशा प्राप्त झाली.

### **पुरातत्वविद्या**

पुरातत्व संशोधन इतिहासाच्या संशोधनास उपयुक्त ठरते हे काळाच्या कसोटीवर सिद्ध झालेले आहे. पुरातत्व या शब्दापूर्वी पुराणवस्तू संशोधन अशी लंबलचक संज्ञा वापरली जात असे. विद्यापीठे व भारत सरकार यांनी पुरातत्व या संज्ञेची निश्चिती केली असल्यामुळे ती आता सर्वमान्य आहे. डॉ. ढवळीकर म्हणतात, पुरातत्वविद्या म्हणजे प्राचीन अवशेषांचा अभ्यास होय ? पुरातत्व विद्येचे मुख्य उद्दिष्ट मानवी जीवनाचा अभ्यास हा असल्यामुळे इतिहास काळातील सामान्य माणसाच्या जीवनाचे चित्र उभे करण्याकरिता पुरातत्व विद्येचे सहाय्य घ्यावे लागते. इतिहासाचा जसा कागदपत्रांशी संबंध असतो तसाच भू-गर्भामध्ये दडलेल्या अनेक संस्कृतीच्या अवशेषांशीही संबंध असतो. यालाच इतिहासाचे भौतिक साधन असे म्हणतात.

इतिहास लेखन करित असतांना लिखित व अलिखित संदर्भ साधनांचा वापर करावा लागतो. अलिखित संदर्भ साधनातील सर्वात महत्वाचे साधन म्हणजे पुरातत्व विद्या होय. पुरातत्व खात्यांतर्गत ठिकठिकाणी केल्या गेलेल्या उत्खननामध्ये जे ऐतिहासिक पुराव उपलब्ध झालेत. त्याचे विश्लेषण करित असतांना तसेच त्याचा कालावधी निश्चित करित असतांना विज्ञानामधील कार्बन डेटिंग चौदा नावाची कामापक पध्दती १९७९ पासून वापरून तत्कालीन काळ कोणता हे निश्चित करणे सोपे जाते. विज्ञानातील शोधामुळे व प्रगतीमुळे इतिहास लेखनामध्ये अचूकता येण्यास मदत होते. सोबतच विज्ञान आणि तंत्रज्ञानामधील प्रगतीमुळे उदा. संगणक आणि संगणकामधील उपलब्ध असणाऱ्या अनेक सोईमुळे इतिहास लेखनास गती येऊन ऐतिहासिक साधन सामग्री जतन करून ठेवण्यास महत्वपूर्ण मदत होते. महत्वपूर्ण दस्तऐवज यांचे

फोटोग्राफ घेऊन फोटो रुपाने जतन करता येणे शक्य होते तसेच रसायनशास्त्रातील अनेक रसायनाच्या शोधामुळे आणि उपयोग माहिती झालेले असल्यामुळे अनेक ऐतिहासिक अवशेष जशाच्या तशाच स्वरूपात जतन करून ठेवणे शक्य होते.

### **कार्बन डॅटींग १४ पध्दती**

काळनिश्चितीकरण पध्दती कालमापन करण्याची निश्चित व नेमकेपणाने माहिती पुरविणारी पध्दती इ. स. १९७९ पासून सुरु झाली असून या पध्दतीमध्ये ५७३० वर्षापूर्वीची कालगणना निश्चितपणे करणे शक्य होते. सजीव वस्तु केव्हा मृत झाली हे या पध्दतीमुळे निश्चित करण्यात येते. उदा. उत्खननात आढळलेल्या लाकडी खेळण्यावरून ती लाकडी खेळणी कोणत्या काळात कोणत्या शतकात आणि कोणत्या दशकात बनविली असावी हे वरील पध्दतीद्वारे निश्चित करणे शक्य होते. सोबतच उत्खनामध्ये आढळून आलेल्या मानवी तसेच प्राण्याच्या सांगाडयावरून हाडांवरून त्यांचा मृत्यू केव्हा झाला त्यांनी ऑक्सीजन घेणे कधी बंद केले हे कळण्यास आणि त्यावरून त्यांचा काळ निश्चित करण्यास महत्वपूर्ण मदत होते. यावरून सदर उत्खननामध्ये आढळलेल्या इतर निर्जीव वस्तुंचा वापर त्या काळातील ते लोक करित होते. आपली उपजिवीका ते कशी करित होते हे उत्खननात आढळलेल्या पुरातत्वीय पुराव्यावरून स्पष्ट होण्यास मदत होते. मानवी हाडांचे सांगाडयाच्या रुपी अवशेष आणि काष्ठसंघीय खेळणीचे अवशेष यांचा समकाळ सिध्द झाल्यास त्यांची खेळणीत जी असेल त्यावरून त्यांचा मनोरंजनाचा प्रकार कोणता होता हे स्पष्ट होते.

उत्खननात आढळून आलेल्या गृह अवशेषावरून, त्याकरिता वापरण्यात आलेल्या लाकडी उपकरणांवरून त्या वस्तूचनेचा कालावधी निश्चित करण्याकरिता सदर वैज्ञानिक पध्दती उपयुक्त ठरते. तसेच तत्कालीन समाज, लोक आपला व्यवसाय कशा पध्दतीने करित होते हे त्यांच्या आसपास मिळालेल्या उत्खननातील अवशेषांवरून कळण्यास मदत होते. त्यांच्या व्यवसायाबद्दल अनुमान काढणे सोईचे जाते. व्यवसायावरून त्यांच्या खानपाणाबद्दल माहिती मिळण्यास मदत होते. वरील सर्व अनुमान कार्बन डॅटींग १४ या पध्दतीच्या वापराने विश्वसनीय ठरतात. म्हणून इतिहास संशोधनामध्ये सदर पध्दतीचा वापर अत्यंत उपयुक्त ठरतो.

वैज्ञानिक प्रगतीमुळेच माहिती तंत्रज्ञानाचा विकास साधला गेला. या माहिती तंत्रज्ञानामधील प्रगतीमुळे इतिहास लेखनांकरिता लागणारी माहिती सामग्री संकलीत करणे आणि साठवून ठेवणे सोईचे झाले शक्य झाले. सोबतच इतिहास विषयाचे अध्ययनासोबतच अध्यापन करण्यास सुध्दा माहिती तंत्रज्ञानाचा उपयोग केल्यास अपेक्षित उद्दिष्ट गाठण्यात यश प्राप्त होण्यास मदत होते.

माहिती तंत्रज्ञानाच्या साधनांमध्येच रेडीओ, दुरदर्शन, व्हिडीओ, ओ. एच. पी., एल. सी. डी., दूरध्वनी, स्मार्ट फोन आणि उपगृहावर आधारित सेवा व सुविधा संगणक व त्यासंबंधीत हार्डवेअर आणि सॉफ्टवेअर इत्यादी बाबींचा समावेश होतो.

मानव हा एक बुध्दीमान प्राणी आहे. त्यामुळेच तो सातत्याने आपल्या सभोवतालच्या विश्वाच्या व्यवहारांमधून ज्ञान मिळविण्याचा प्रयत्न करित असतो. लिखित साहित्य आणि अलिखित म्हणजेच हक—श्राव्ये साधने अशी ज्ञानाची दोन प्रमुख माध्यम आहेत. ज्ञानाकरिता ग्रंथालये ही दोन्ही प्रकारची ज्ञान साधने संकलीत करून जिज्ञासु वाचकांना त्यांच्या गरजेनुसार ती उपलब्ध करून देण्याचा प्रयत्न करतात उपरोक्त साधनांवरच आजच्या आधुनिक काळात माहिती प्राप्त करण्याकरिता इंटरनेट, इंट्रोनेट, आणि एक्स्ट्रानेट या नव्या संकल्पना संगणकाच्या क्षेत्रातून आलेल्या आहेत.

माहिती तंत्रज्ञानामधील खालील साधनांचा आपण इतिहास लेखनाकरिता आणि इतिहास विषय शिकविण्याकरिता वापर करू शकतो.

### **वर्ड प्रोसेसर**

वर्ड प्रोसेसर मधील डेटा कुशलतने हाताळण्याच्या क्षमतेला आपण इतिहास शिकण्याकरिता तसेच लेखाकरिता उत्तमरित्या वापरू शकतो. उदा. अपूर्ण वाक्य पूर्ण करण्यास माहितीला क्रमानुसार लावण्यास आपण वर्ड प्रोसेसचा वापर करू शकतो. एखाद्या माहिती इंपिंग च्या सहाय्याने वेगवेगळ्या भागात विभागणी करू शकतो.

### **एक्सेल**

एक्सेल चा वापर केवळ आकडेवारीच्या गणितीय संकलनासाठीच न करता त्याचा वापर इतिहासातील काही गोष्टी शिकण्याकरिता वापर इतिहासातील काही गोष्टी शिकण्याकरिता देखिल आपण करू शकतो. यामध्ये आपण ऐतिहासिक माहिती गोळा करून त्यावर सखोल अभ्यास करून प्राप्त माहिती आलेखाद्वारे काढून स्पष्ट करू शकतो.

### **डि. टी. पी.**

डि. टी. पी. मधील पब्लीर नावाचा प्रोग्राम हा इतिहासातील काही बाबी मांडण्याच्या दृष्टीकोनाने अत्यंत महत्वाचा आहे. डी. टी. पी. मध्ये आपण गोळा केलेल्या माहितीवर पेज भोवती मांडून संकलीत व संपादित करू शकतो.

### **डेटाबेस**

डेटाबेस प्रोग्राम्स चा वापर आपण ऐतिहासिक माहितीला संकलीत व संपादित करण्याकरिता करू शकतो.

### **सादरीकरणाचे सॉफ्टवेअर**

पावर पॉइन्ट प्रेझेन्टेशन या सॉफ्टवेअरचा वापर करून उत्खननामध्ये मिळालेले साहित्य शिक्षक विद्यार्थ्यांना दाखवू

शकतो. यामुळे उत्खननात मिळालेल्या साहित्याची पुराव्याची झिझ होणार नाही. सोबतच महत्वाचे पुरावे नष्ट होणार नाही, गहाळ होणार नाही.

याशिवाय सदर सॉफ्टवेअरमुळे चित्र सदृष सादरीकरण करून शिक्षण प्रक्रियेला प्रभावी बनविता येते.

### इंटरनेट

इंटरनेट म्हणजे जगातील लाखो संगणकाचे परस्परांना जोडलेले जाळे आहे. इंटरनेट हा एक माहितीचा प्रचंड मोठे असलेले ग्रंथालय आहे. जगभरातील सभासद त्यावर उपलब्ध माहितीचा आनंद घेऊ शकतात. चित्रे, अक्षररूपी आलेख, ग्राफीक्स इत्यादी माहिती सभासदांना योग्य ती देवून आपल्या संगणकावर मिळविता येते.

इतिहास संशोधनामध्ये इंटरनेटचा सर्वात अधिक उपयोग होतो. इतिहास संशोधकाला पुरावे म्हणून आवश्यक लागणारे पिरॉडिकल्स ट्रेड मॅगझीन व इतर अद्यावत माहिती इंटरनेटवर सहज उपलब्ध आहे. इंटरनेटवर ऑन लाईन सर्व्हिसद्वारे संशोधक आपल्या विषयातील तज्ज्ञांशी प्रश्न उत्तराद्वारे संवाद साधून ते आपल्या प्रश्नांचे निरसन करू शकतात.

### संदर्भ ग्रंथ सूची

- १) गायकवाड, डॉ. सरदेसाई, हनमाणे, इतिहास लेखनशास्त्र, फडके प्रकाशन कोल्हापूर तृतीयावृत्ती २००१.
- २) डॉ. गाठाळ साहेबराव, इतिहास लेखनशास्त्र, कैलास पब्लिकेशन, औरंगाबाद प्रथमावृत्ती जुलै १९९९
- ३) Radiocarbon dating-wikipedia <https://en.m.wikipedia.org/wiki/Radiocarbon>
- 4) poole Lynn , Gray, Johnson Poole, 1961, Carbon-14, and other. science methods that date the past [https://books google. co.in](https://books.google.co.in).
- 5) Taylor R. F., Martin.J., Aitken 1997- Chrometric Dating in Archaeology [https://books google.co.in](https://books.google.co.in)

### समारोप

वरील प्रकारे इतिहासव संशोधन लेखन अध्ययन व अध्यापन करण्याकरिता वैज्ञानिक प्रगत माहिती तंत्रज्ञानाच्या साधनांचा वापर केल्यामुळे संशोधन, लेखनास सोबत इतिहास विषयाचे अध्ययन अध्यापन करण्याच्या प्रक्रियेत वेग प्राप्त होतो. कालमान निश्चित करण्यास मदत होऊन कालमानाच्या संदर्भात विश्वासनीयता प्राप्त होते. संशोधक विद्यार्थी आणि मार्गदर्शक यांना परस्परांशी वारंवार संपर्क साधने सोईचे होते. त्यांचा वेळ, काळ, पैसा आणि श्रम वाचविता येणे शक्य होते.

### निष्कर्ष

- १) इतिहासाचा व विज्ञानाचा फार जवळचा संबंध आहे.
- २) इतिहासाचे संशोधन करण्याकरिता विज्ञानाची मदत महत्वपूर्ण ठरते.
- ३) इतिहासात भारतात विज्ञान प्रगत होते.
- ४) इतिहास व विज्ञान एकमेकांसमवेतच विकसीत होऊ शकतात.

## जागतीक तापमानवाढ आणि आंतरराष्ट्रीय राजकारण Global Warming & International Politics

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### प्रस्तावना

जलवायू परिवर्तन, मानवी जीवनाचे अस्तित्व आणि विकासाशी निगडित एक अत्यंत गंभीर समस्या आहे. हया समस्येचा मानवी जीवनावर विपरित परिणाम होत आहे. सोबतच नैसर्गिक आपत्ती जसे पूर, अवकर्षण, समुद्री वादळ इ. मध्ये वाढ होत आहे. जलवायू परिवर्तनाचा शेतीवर गंभीर परिणाम होत असून शेती उत्पादनात घट होत आहे. फलस्वरूप शेतकऱ्यांना आर्थिक संकटाशी झुंज द्यावी लागत आहे. जलवायू परिवर्तनाचे जागतिक दुष्परिणाम पाहता, काळाची गरज लक्षात घेता, हया समस्येचा निपटारा करण्यासाठी एका नियोजित आणि दिर्घकालीन रणनीतिची आवश्यकता आहे. कारण विकासाच्या अनियोजित प्रक्रियेने पर्यावरणीय अपकर्षण वाढत आहे. नैसर्गिक साधनांच्या अंधाधुंद वापराने निसर्गजन्य संकटे मानवा समक्ष उभे ठाकली आहेत पृथ्वीच्या तापमानात वाढ झाल्याने ग्लोरीथर वितळत आहेत आनेने मध्ये छिद्रे पडल्याने त्याची सुर्यकिरणे रोखण्याची क्षमता घटत आहे. निसर्ग –हासाकडे वाटचाल करीत आहे. एकंदरीत जागतिक तापमानात वाढ होऊन जलवायू परिवर्तनाची समस्या जगापुढे एक ज्वलंत समस्या म्हणून उभी ठाकली आहे अशा हया समस्येच्या उत्पत्तीकारणांचा शोध घेणे. तिचे उत्तरदायित्व कोणाकडे ? तिचे परिणाम कोणते ? तिचा निपटारा का आवश्यक आहे ? तिच्या निपटा—याचे प्रयत्न आंतरराष्ट्रीय क्षेत्रात होत आहे का ? अशा हया प्रश्नांच्या उत्तराचा शोध घेणे प्रस्तुत लघुशोध निबंधाचा उद्देश आहे.

### १. जागतिक तापमान वाढ : अर्थ व वाढ

सर्व साधारणपणे असे म्हटले जाते की, जागतिक तापमानात वाढ म्हणजे जमिनीच्या सरासरी तापमानात वाढ होय. ज्यायोगे जलवायू परिवर्तन घडून येते. तापमान वाढीचा अर्थ जमीन, वायूमंडळ आणि समुद्राच्या तापमानात वाढ. जमिनिचे ग्लेशियर वितळत असल्याकरणे तिच्या तापमानात वाढ होत आहे. ज्यायोगे समुद्रालगत मोठया उंचावर असलेल्या काही देशांचे अस्तित्व धोक्यात येत आहे. उत्तर ध्रुव व दक्षिणेतील अट महा द्विपांमध्ये बर्फ वितळण्याचा वेग अधिक आहे. परिणामस्वरूप व समुद्राच्या पाण्यात वाढ होत आहे. जगाच्या विविध भागात मोठया प्रमाणात वादळाचे प्रमाण वाढत आहे. बदलत्या तापमानामुळे काही जीव जंतुचे अस्तित्व धोक्यात येत आहे ; मानवी जीवनही धोक्यात येत आहे. जलवायू परिवर्तनाचे शेती उत्पादनात घट होत आहे

फलस्वरूप अन्नधान्याची समस्या निर्माण होत आहे. अशा हया सर्व आपत्तीस जागतीक तापमानात झालेल्या वाढीच्या कारणाने निर्माण झालेले जलवायू परिवर्तन हे आहे.

पूर्वी जागतिक तापमानामध्ये वाढ ही नैसर्गिक कारणांनी होत असे. जसे सुर्याशी संबंधित बदल आणि ज्वालामुखीचा उद्रेक इ. अशा हया तापमान वाढीची गती अगदी मंद असायची परंतु, औद्योगिक क्रांती नंतर मनुष्य निर्मित कारखाने, कोळश्याद्वारे विज निर्माण करणारे थर्मल प्लांट, मालवाहक वाहने, दळणवळणांची साधने आणि एयरकंडिशनांनी कार्बन डाय ऑक्साईड सारख्या गॅस मोठया प्रमाणात वायूमंडळ (हवेत) मिसळल्या जात असल्यामुळे जागतिक तापमानात मोठया प्रमाणात वाढ झाली आहे. परिणामतः जमिनीचे वातावरण प्रभावित होण्यास प्रारंभ झाला आहे.

२० व्या शतकात जगात राज्यांच्या संख्यंत वाढ झाली. प्रत्येक राज्य आपला सामाजिक, आर्थिक विकास करण्याकरीता औद्योगिकरणाची प्रक्रिया स्विकारू लागले. त्यामुळे जमिनीच्या तापमान वाढीचा दर अधिकच वाढला. २० व्या शतकाच्या अंतिम दशकापर्यंत पोहोचेपर्यंत जमिनीच्या तापमानात वेगाने वाढ झाली कारण हवेत ग्रीन हाऊस गॅस कार्बन डायऑक्साईड, मीथेन, नाईट्रोआक्साईड च्या प्रमाणात वाढ झाली. हवेत ग्रीन हाऊसचा प्रभाव मोठया प्रमाणात दिसू लागला ; जागतिक तापमान वाढीची स्थिती पुढे झाली. २१ व्या शतकात पोहचते पोहचते ग्रीन हाऊसचा प्रभाव कमी करण्याचा प्रयत्न होऊ लागला तरीदेखिल जागतिक तापमान वाढीची स्थिती फार भयावह आहे आणि आज देखिल ती कायम आहे.

ग्रीन हाऊस गॅस अर्थात कार्बन डाय ऑक्साईड, कार्बन मनो ऑक्साईड तथा अशा प्रकारच्या गॅसचा जमाव हवेत भयावह स्वरूपात गडद छत्रीप्रमाणे पसरत व वाढत आहे. या कारणाने जमिनीतून निर्माण होणारे तापमान पसरण्यास अडसर निर्माण होत आहे परिणाम स्वरूप जमिन, हवा आणि समुद्राच्या तापमानात वाढ होत आहे.

तापमानात वाढ जलवायू परिवर्तनाचे एक मोठे कारण मानले जाते. प्रभावित देशांमध्ये नैसर्गिक आपत्ती सोबतच अन्न धान्यांच्या समस्येला तोंड द्यावे लागत आहे. जागतिक तापमान वाढीच्या कारणाने समुद्राच्या पाण्याचा स्तर वाढत आहे. बर्फ वेगाने वितळत आहे. पाऊस आपला स्वभाव बदलत आहे. दुष्काळ, महापूर, वनवा इ. घटनांमध्ये दिवसेंदिवस वाढ होत आहे. जग जागतिक तापमान वाढीच्या कारणाने जलवायू परिवर्तनाच्या आव्हानांचा सामना करीत आहे.

## २. जागतीक तापमान वाढीचे तत्व ?

### अ) औद्योगिकरणाचा विस्तार :-

कार्बन डाय आक्साईड तथा अन्य ग्रीन हाऊस गॅसमध्ये वाढीच्या मागे जे तत्व अधिक जबाबदार आहे ते म्हणजे औद्योगिकरणाचा मोठा विस्तार आणि कारखाने, उर्जा निर्मिती प्लॉट, दळणवळणांची साधने एयरकंडीशनांद्वारे हवेत सोडली जाणारी ग्रीन हाऊस गॅस विशेषता कार्बन डाय आक्साईडचे मोठे प्रमाण.

### ब) शहरीकरणाची प्रक्रिया :-

शहरीकरणाच्या प्रक्रियेमुळे जमिनीच्या तापमानात वाढ होत आहे. जंगले तथा हिरवेगार मैदानांची जागा सिमेंट काँक्रीट रस्ते व इमारती घेत आहे. त्यास काँक्रीट जंगले म्हटले जाते. त्यांची निर्मिती जमिनीचे तापमान वाढण्यास कारणीभूत ठरत आहे. वृक्ष तसेच हिरवळ कार्बन डाय आक्साईड शोषून घेण्याचे कार्य करते आणि जेव्हा वने आणि हिरवळीचे क्षेत्र कमी होते तेव्हा हवेत कार्बन डायआक्साईडची मागा वाढीस लागते. लोकसंख्यावाढ व मानसाची बदलती जीवनशैली देखिल अशा ह्या स्थितीला जबाबदार आहे.

### क) विकसीत देशांचे योगदान :-

विकसीत देशातील औद्योगिकरण व बेसुमार तंत्रज्ञानाचा वापर करतांनी तापमान वाढीत त्यांचे फार योगदान आहे. वातावरणातील प्रदुषण आणि तापमानात वाढीस त्यांचे मोठेमोठे कारखाने, उर्जाघरे आणि दळणवळणांची यंत्रे की जे पेट्रोल आणि डिझेल मोठया प्रमाणात वापर करतात, जबाबदार आहे. जागतिक तापमानाची वाढ रोखण्याबाबत हे देश जागरूक आहे. परंतु ग्रीन हाऊस गॅसचे उत्पादन करीत आहे. ज्यायोगे जागतिक तापमानात वेगाने वाढ होत आहे. हवेत मोठया प्रमाणात कार्बन डायआक्साईड पसरत आहे.

### ड) विकसनशील देशांचे योगदान -

विकसनशील देश औद्योगिकरणाच्या प्रक्रियेत मग्न आहेत. कारण लोकांकरीता वस्तु व सेवांचे उत्पादन करण्यासाठी औद्योगिकरण हे एक साधन आहे. हे देश या करीता पारंपारिक तंत्रज्ञानाचा वापर करीत आहे. त्यांच्याकडे ना शहर तंत्रज्ञाना ना तंत्रज्ञान विकसीत करण्याची क्षमता. जलवायू परिवर्तनाने त्यांचे नुकसान होत आहे. ते शुद्ध तंत्रज्ञानाचा वापर करण्यास इच्छूकही आहे. परंतु विकसीत देश त्यांना असे तंत्रज्ञान देण्यास पूर्णपणे तयार नाहीत. कारण ते अशा तंत्रज्ञानाला ना विकू इच्छित आहे ना मदत ना अनुदानाच्या रूपात देऊ इच्छित आहे. अशा ह्या संबंधात विकसीत व विकसनशील देशांमध्ये जलवायू राजकारण अथवा जागतिक तापमानात वाढीचे राजकारण व्यवहारात आहे.

अशा सर्व प्रमुख तत्वांच्या कारणाने जागतिक तापमानात वाढ झाली आहे. वाढ होत आहे आणि भविष्यात देखिल असेच होत राहिल असे दृष्टीस पडत आहे.

## ३. जागतिक तापमानात वाढ आणि जलवायू परिवर्तनावर नियंत्रणाकरीता प्रयत्न :-

UNO मार्फत करण्यात येत आहे. UNO च्या सदस्य राष्ट्रांनी एक करार ९ मे १९९२ रोजी केला. UNO फ्रेमवर्क conversation असे नाव दिल्या गेले. ज्या सदस्य राष्ट्रांनी ह्या करारावर सहया केल्या त्यांना conference of the parties(COP) म असे म्हटल्या जावू लागले. अशा ह्या देशांची पहिली बैठक बर्लिनला (१९९५), दुसरी जिन्हेव्हा (१९९८) तर तिसरी क्वोटो (१९९९) येथे भरली होती. ह्या परिषदेमध्ये ग्रीन हाऊस गॅसचे उत्पादन कमी करण्याची जबाबदारी निर्धारित केली गेली. कार्बन डायआक्साईड कमी करण्याचा निर्णय घेण्यात आला. सहावी परिषद हेग (२०००) भरविण्यात आली. यात वने आणि शेतीखालील जमिनीमध्ये कार्बन डम्प तयार करावे. ज्यायोगे हवेत कार्बनचा केला व कमी होईल. असा प्रस्ताव अमेरिकेने दिला. आठवी परिषद नवी दिल्ली (२००२) येथे संपन्न झाली. यात जलवायू परिवर्तनाचा प्रभाव कमी करणारे तंत्रज्ञान विकसनशील देशांना हस्तांतर करण्यात यावे. अशी घोषणा करण्यात आली. २० वी परिषद (२०१४) पेरूची राजधानी लोयत्या शहरात भरली. यात चीन, भारत व ब्राझील सहित अन्य विकसनशील देश कार्बन उत्सर्जनात कपात करण्यात सहमत झाले.

### निष्कर्ष

जागतिक तापमान वृद्धीचे कारण जो जलवायू परिवर्तन आहे. त्याचे मोठे नुकसान सर्व देश सोसत आहेत. अशा ह्या समस्येचा सामना करण्याची आवश्यकता सर्व देशांची आहे. ह्या संदर्भात आंतरराष्ट्रीय ताळमेळ आणि सहयोग वाढविण्यासाठी प्रयत्न होत आहे. परंतु काही मुद्याबाबत मतभेद असल्या कारणाने ठोस निर्णयापर्यंत पोहचणे शक्य झाले नाही. जागतिक तापमान वाढीमुळे पृथ्वीचा भौगोलिक व्यवहार प्रभावित झाला आहे. अधिकाधिक गरमी वाढत आहे, अधिकाधिक थंडी पडत आहे. अधिकाधिक पाऊस पडत आहे, अधिकाधिक महापूर आणि वादळ येत आहे. तर काही दुष्काळाने होरपडत आहे. निसर्ग लहरी बनत आहे. नैसर्गिक आपत्तीची स्थिती वारंवार निर्माण होत आहे. निसर्ग मानवाला स्पष्ट संदेश आहे की, मानवी कारणांनी जागतिक तापमानात वाढ होत आहे. त्याला थांबविले पाहिजे. जलवायू परिवर्तनाने निर्माण झालेल्या संकटांपासून वाचविण्यासाठी प्रयत्न केले पाहिजे. जागतिक तापमानात वाढ आणि जलवायू परिवर्तनाचा मुद्दा आज आंतरराष्ट्रीय संबंधाचा प्रमुख लक्ष केंद्र बनायला पाहिजे. अशा ह्या कारणाने निर्माण झालेल्या आव्हानांचा सामना केल्याशिवाय आंतरराष्ट्रीय समुदाय सर्व पक्षीय चिरकालीन विकासाचे उद्देश प्राप्त करण्यास यशस्वी होवू शकणार नाही.

**संदर्भ ग्रंथ**

१. Edward, David Arms Central in International politics, Vakils, Bombay
२. फाडिया, बि.एल. अंतर्राष्ट्रीय राजनितिके सिद्धांत, साहित्य भवन पब्लिकेशन, आगरा, २००४
३. फाडिया, बि.एल.समकालीन राजनितिके मुद्दे, साहित्य भवन पब्लिकेशन, आगरा
४. घई, यू.आर. अन्तर्राष्ट्रीय राजनीति, न्यू एकेडेमिक पब्लिशिंग कम्पनी, जालन्धर, २०१४
५. गोपालकृष्णन के.वी., विज्ञान और प्रौद्योगिकी मानव जातिपर प्रभाव, राष्ट्रीय पुस्तक न्यास, नवी दिल्ली, २०१४
६. जैन पुखराज और आलोक कुमार, समकालिन राजनीति के प्रमुख मुद्दे, एस.बी.पी.डी. पब्लिकेशन, आगरा
७. सिंहल एस.सी. अन्तर्राष्ट्रीय सम्बन्ध, लक्ष्मी नारायण अग्रवाल, आगरा २०१७  
घटनाचक्र – जनवरी – फरवरी, २०१५



## मराठी भाषा विषयाच्या अध्यापनात मल्टिमिडीया तंत्रज्ञानाचा व इतर नाविन्यपूर्ण साधनांचा उपयोग : एक संशोधनात्मक दृष्टिक्षेप

**रू.न. कऱ्हाडे**

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### प्रस्तावना

मातृभाषा, स्वभाषा म्हणजे माणसाला स्वतःच्या संस्कृतीशी घट्टपणे जाडणारी नाळच होय. त्यामुळे आपल्या मातृभाषेपासून दूर जाणे म्हणजे स्वतःच्या सुसंस्कृतीपासून दूर जाणे अथवा आपल्या अस्मितेपासून दूर जाणे होय. उदा. भारतीय संस्कृतीमधील, 'नमस्कार' ही संकल्पना व त्यामागील भवना 'folding hands', किंवा 'Salutation' अशा इंग्रजी शब्दांतून व्यक्त होणे शक्य नाही. म्हणूनच कुठल्याही समाजाच्या संस्कृती—अस्मितेची जोपासना, रक्षण व संवर्धन, त्या समाजाच्या स्वतःच्या मातृभाषेतूनच होऊ शकते. असे असले तरी मराठी भाषा विषयाच्या अध्यापनात आजच्या आधुनिक काळाच्या संदर्भाने माहिती तंत्रज्ञान, मल्टिमिडीया तंत्रज्ञानाचा आवर्जून वापर करून मराठी विषयाच्या अध्यापनात वेगळ्याप्रकारची नाविन्यपूर्णता आणता येते, असे आपणास ठामपणे म्हणता येईल.

शिक्षण व अध्यापन म्हणजे विद्यार्थ्यांच्या मन—मेंदूला एक नवा प्रकाश प्राप्त करून देण्याचे माध्यम आहे. हा शिक्षणाचा उजेड माणसाच्या जीवनाला योग्य दिशा देत असते. शिक्षण देणे म्हणजे निव्वळ साक्षर करणे नव्हे, परंतु चांगले ज्ञान संपन्न होऊन स्वतःची योग्यता निर्माण करणे, योग्य विचारसंपन्न होणे होय. जर आपल्या जीवनामध्ये सकारात्मक परिवर्तन घडवायचे असलं तर नाविन्यपूर्णता आणि नवनिर्माण क्षमता विकसित करणे अनिवार्य आहे. अशा नाविन्यपूर्णतेचे नवनिर्मितीचे विविधांगी फायदे शिक्षक—प्राध्यापक व विद्यार्थ्यांना होऊ शकतात. शिक्षण हा माणसाच्या जीवनातील अनमोल असा महत्वपूर्ण दागिना आहे, त्याच्या सभ्य वर्तनाचा प्रारंभविंदू आहे. शिक्षण हे केवळ पुस्तकी ज्ञान नसून निरंतर प्रक्रिया आहे. म्हणून शिक्षक हे विद्यार्थ्यांमध्ये अभिरूची निर्माण करण्यास सक्षम असले पाहिजे. शिक्षण विद्यार्थ्यांना जबरिचे अथवा लादले गेले असल्याचे वाटले नाही पाहिजे. शिक्षण प्रसन्न वातावरणात अगदी सहज खेळीमेळीने दिले गेले पाहिजे तेव्हाच विद्यार्थ्यांना त्यात मनापासून रस—आवड निर्माण होईल. शिक्षण हे एकप्रकारे चांगले सुसंस्कृत व सुशिक्षित माणूस म्हणून जगण्यासाठी लागणारी शक्तीसौष्ठवताच आहे. त्यामुळे पारंपारिक शिक्षण पध्दती सोबतच मल्टिमिडीया सारख्या आधुनिक तंत्रज्ञानाच्या माध्यमातून, नाविन्यपूर्णने शिक्षण देणे आजच्या युगात अत्यंत गरजेचे आहे. असे म्हटल्यास अतिशयोक्ती ठरणार नाही.

### मल्टिमिडीया तंत्रज्ञानाचा मराठीच्या अध्यापनात अपयोग

आजच्या आधुनिक काळात संगणक आणि महाजाल (Internet) ही ज्ञान, विज्ञान, माहिती, शिक्षण, अभ्यास आणि संप्रेषण—संज्ञापनाची अत्यंत महत्त्वाची माध्यमे झाली आहेत. येत्या दशकात ही मल्टिमिडीया तंत्रज्ञानात्मक साधने इतर सर्व प्रकारच्या दळणवळणाच्या माध्यमांना मागे टाकतील. असं म्हटल्यास वावगे ठरणार नाही. या सर्व उपलब्ध मल्टिमिडीया तंत्रज्ञानाचा मराठी भाषेच्या अध्यापनात वापर करणे फार सोपे आणि सोयीस्कर आहे. फक्त आपण या तंत्रज्ञानात्मक साधनाचा उपयोग करून घेण्याची सकारात्मक मानसिकता स्वतःमध्ये निर्माण करणे अत्यावश्यक आहे. कुठल्याही मानवी समाजाची प्रगती ती त्याच्या स्वभाषेतील ललित साहित्याप्रमाणेच जगात वेळोवेळी सातत्याने उदयास येत असलेले नवनवीन मल्टिमिडीया (बहुमाध्यमी) तंत्रज्ञानात्मक साधने, ज्ञान व संकल्पना आपल्यात सामावून घेण्यासाठी अधिकाधिक चांगल्याप्रकारे सक्षम होत राहणाऱ्या भाषासामर्थ्यावरही अवलंबून असते. म्हणूनच आजच्या जागतिकीकरण, औद्योगिकीकरणाच्या काळात आपल्या मराठी भाषाविषयाच्या अध्यापनात मल्टिमिडीया (बहुमाध्यमी) तंत्रज्ञानाचा अधिकाधिक वापर करून सातत्याने अपडेट राहून विद्यार्थ्यांना अनंत माहितीचा महाखजिना आपण प्राप्त करून देऊ शकतो.

आधुनिक मल्टिमिडीया (बहुमाध्यमी) तंत्रज्ञान हे अनेकप्रकारच्या डीजिटल मिडीयाच्या एकत्रित समन्वयाने निर्माण झालेले तंत्रज्ञान आहे. जसे—टेक्स्ट, प्रतिमा (Images), दृक—श्राव्य (Audio-Video), पॉवर पॉईंट, ग्राफिक्स, मायक्रोमिडीया, मुव्ही मेकर यासारख्या विविध माध्यमातून आपण विद्यार्थ्यांना नाविन्यपूर्ण माहितीचा भांडारच उपलब्ध करून देऊ शकतो. पारंपारिक शिक्षण अध्यापन पध्दतीबरोबरच या बहुमाध्यमी तंत्रज्ञानाचा उपयोग करून आपला वर्कलोड बऱ्याच प्रमाणात सुकर करून घेता येऊ शकतो. बऱ्याच शैक्षणिक संस्था या मल्टिमिडीया तंत्रज्ञानाचा उपयोग करून देशातील विविध समस्यांवर आधारित शिक्षणाकडे वळताना दिसतात. अशा शैक्षणिक संस्थेतून शिक्षण घेऊन बाहेर पडलेले विद्यार्थी अपडेट नॉलेज असलेले आणि समस्या सोडविण्यासाठी सक्षम असलेले विद्यार्थी म्हणून ओळखले जाऊ शकतात. अतिशय बारकाईने व विश्लेषणात्मक विचाराने अशा अनेक समस्या

सोडविण्याच्यादृष्टीने मल्टिमिडीया तंत्रज्ञानाची प्रचंड प्रमाणात मदत होऊ शकते.

विज्ञान—तंत्रज्ञान, मल्टिमिडीया (बहुमाध्यमी) तंत्रज्ञान यांचा विपुल प्रमाणात वापर करून नाविन्यपूर्णतेने मराठी भाषेचे अध्यापन आपण करू शकतो. अशा मल्टिमिडीया तंत्रभाषेच्या माध्यमाने विद्यार्थ्यांना विविध प्रकल्प देऊन त्यांच्या कौशल्यांना बहुआयाम प्राप्त करून देण्यास निश्चितच सहकार्य करता येते, असे म्हटल्यास अतिशयोक्ती होणार नाही. शिक्षण ही निरंतर प्रक्रिया आहे. ज्ञानसाठा अनंत आहे. तो आपापल्यापरीने आपण आत्मसात करून आपले व्यक्तिमत्त्व उजळू शकतो, उन्नत करू शकतो. पुस्तकातील ज्ञानाला मल्टिमिडीयाची योग्य अशी जोड देऊन अधिक प्रमाणात नाविन्यपूर्ण आणि आधुनिक करता येऊ शकते. या आधुनिक तंत्रज्ञानाचा वापर करून शिक्षकाला त्याच्याजवळ आलेले ज्ञान

वेगवेगळ्या पध्दतीने विद्यार्थ्यांपर्यंत पोहचवता येते. आपल्या भाषा विषयाच्या अध्यापनात शिक्षकाने मल्टिमिडीया तंत्रज्ञानाचा योग्य वापर केल्यास विद्यार्थ्यांना समजण्यासाठी अधिक सोपे जाते. त्यामुळे विद्यार्थी जास्त सकारात्मकतेने ज्ञानसंपन्न होऊ शकतात. विद्यार्थ्यांची अवधानक्षमता सुध्दा जास्त प्रमाणात वाढू शकते. याप्रकारे मल्टिमिडीयाद्वारे मिळविलेले ज्ञान विद्यार्थ्यांच्या मनात जास्त काळ टिकून राहण्यास मदत होते. त्याचप्रमाणे आधुनिक तंत्रज्ञान, मल्टिमिडीया तंत्रज्ञान यांच्या पुरेपूर व योग्य वापराचा फायदा असा आहे की, आपल्या विद्यार्थ्यांमध्ये एकमेकांना सहकार्य करण्याची कौशल्य विकसित होण्यास हातभार लागतो. कारण हे ज्ञान—तंत्रज्ञान आधी त्या विद्यार्थ्यांला नितपणे समजलेले, त्याने मनापासून अभिरुचीने संपन्न केलेले असते.

● **मल्टिमिडीया (बहुमाध्यमी) तंत्रज्ञानाची विविध साधने—**

अ.क्र	साधने (Tools)	पध्दती (Methods)	रूपक (Metaphor)
१	MS-Power Point Presentation (ppt.), आलेख (Graphics), फ्लॅशस्लाईड	संगणकाच्या सहाय्याने दृक—श्राव्य माध्यमाचा वापर करून आलेख पध्दतीने. जसे — graphics, sound & video	स्लाईडच्या स्वरूपात (Slide Based)
२	Micro media- MS PowerPoint, Astound Graphics & Flash Slide Show Software फ्लॅश ऑर्थोरवेबर, विन्डोज, मुव्ही मेकर (चित्रिकरण), विन्डो, मायक्रोमिडीया डायरेक्टर	चिन्हस्वरूप आणि चित्रस्वरूप चित्रिकरणाच्या संकल्पना प्रदर्शित करण्याच्या पध्दतीने. जसे — Casts, Sound, Pictures and scores	चिन्ह स्वरूप (Icon Based) व चित्रस्वरूप (Movie Based)
३	Adobe Acrobat Reader	Word documants च्या सहाय्याने — Adobe Acrobat Reader 5 Many popular Multimedia elements like graphics, sound & charts	पुस्तक स्वरूपात (Book Based)
४	Google Classroom with help of Gmail	Online Text, Assignments, Que.- Answer Method, Marking-credit for all students, who have Android Mobile or Computer	Soft copy (Text Based)

**भाषाविषयाच्या अध्यापनाची इतर नाविन्यपूर्ण साधने—**

**१. मन नकाशा (Mind Map)**

मन नकाशा (Mind Map) या नाविन्यपूर्ण साधनाचा शोध ६०च्या दशकात 'टोनी बुझान' (Tony Buzan) यांनी लावला. या साधनाचा उपयोग विद्यार्थ्यांना की-वर्ड्स आणि प्रतिमा यांच्याद्वारे नोट्स काढण्यासाठी सहकार्य होते. त्याचप्रमाणे मन नकाशा हे शिक्षकालासुध्दा विविध महत्त्वपूर्ण संकल्पना समजावून सांगण्यासाठी उपयोग होऊ शकतो. मन नकाशा हे साधन विद्यार्थ्यांना पटकन माहिती समजणे, लक्षात ठेवणे व आठवण्यासाठी महत्त्वपूर्ण ठरते. कारण यामध्ये दृश्य निर्माण क्षमता आहे. मन नकाशा हे माहितीचे पटकन पुनरावलोकन (Review) करण्यासाठी अत्यंत सोपे व उपयुक्त साधन आहे. मनात साठवून ठेवलेली माहिती पटकन ताजी (Refresh) करण्यासाठी उपयोगीचे साधन आहे तसेच

स्मरण, आठवणीसाठी जास्त प्रभावशाली साधन आहे, असे प्रत्ययास येते. कारण यामध्ये दृश्यात्मक संवेदनात्मक साधनांचा वापर होतो. चित्र, संगीत, रंग, स्पर्श, गंध हे माहिती समजून घेण्यासाठी उपयुक्त ठरतात. त्यामुळे ही माहिती जास्तीत—जास्त काळ मनात रेंगाळत राहते. भाषा अध्ययन अथवा अध्यापन पध्दतीमध्ये Graphs, charts यांचा उपयोग केल्यास माहिती ज्ञान लवकर समजण्यास अधिक सोपे जाते. त्यामुळेच विषय शिक्षकांनी चित्रमय संकल्पनांचा वापर विद्यार्थ्यांसाठी करावा.

या सर्व बाबी मन नकाशाच्या संदर्भात खालीलप्रमाणे तीन प्रकारे प्रभाव पाडू शकतात.

I. मन नकाशामुळे माहिती समजण्यासाठी क्षमता निर्माण होणे.



II. भाषा विषयाच्या अध्यापनात PowerPoint Presentation (ppt.) चा वापर करून विद्यार्थ्यांना प्रभावीपणे शिकविता येणे.

III. विद्यार्थी—शिक्षकांमध्ये नाविन्यपूर्ण वैचारिकक्षमता विकसित होणे.<sup>1</sup>

### २. विनोदपूर्णतेने अध्यापन (Teaching with Sense of Humour)—

विनोद (Humour) हा अत्यंत प्रभावी शिक्षणाचे माध्यम होय. विनोदी अध्यापन हे शिक्षक आणि विद्यार्थी यांच्यामध्ये सशक्त नाते निर्माण करण्यास सहाय्यभूत ठरते. योग्य वेळी विनोदपूर्ण अध्यापनातून तणावमुक्त होणे, अभ्यासात जास्तीत—जास्त रूची निर्माण होणे अशा क्षमता विकसित होतांना दिसतात. यामुळे विद्यार्थ्यांमध्ये शिक्षण आणि संवाद यासंदर्भातील वातावरणनिर्मिती होते. वर्गामध्ये अभ्यासक्रमाला अनुसरून प्रासंगिक विनोदनिर्मितीमुळे विद्यार्थी ताजेतवाने होऊन अभ्यासात चांगल्याप्रकारे लक्ष देऊ शकतात. त्यामुळे चांगले नोट्स (टिपणे) काढण्याविषयीची सवय विकसित होते. शिक्षकाने अध्यापनाच्यावेळे अतिशयोक्ती (exaggeration), थांबणे (pauses) आणि समयसुचकता (Timing) यासारख्या गोष्टींकडे विशेष लक्ष दिले पाहिजे, तरच विनोदी अध्यापन अधिकाधिक प्रभावी ठरते. विनोदी अध्यापन हे तात्पुरते दुःख दूर करीत नाही तर अध्ययन—अध्यापन यासंदर्भाने अतिशय महत्वपूर्ण घटक ठरतो, असेही आपणास म्हणता येते.

### ३. आधी सारांश नंतर प्रास्ताविक ('Z' to 'A' Approach)—

शिक्षकाने जो विषय—पाठ—कविता शिकवायचा आहे, त्याची मध्यवर्ती कल्पना आधी स्पष्ट करून त्याची प्रस्तावना अथवा परिणाम नंतर सांगावे. यालाच 'Z' to 'A' Approach पध्दती म्हणतात.

या अॅप्रोच पध्दतीच्या खालील काही शक्ती संभवतात—

- I. माहितीची अथवा विषयाची मध्यवर्ती कल्पना त्या विषयासंदर्भातील संकल्पना (Concept) पूर्णपणे स्पष्ट करते.
- II. विद्यार्थ्यांमध्ये वास्तव संकल्पनेत रूची वाढण्यास मदत होते.
- III. विद्यार्थ्यांच्या मनामध्ये निर्माण झालेली ही संकल्पना जास्तीत—जास्त काळ टिकवून ठेवण्यास कारणीभूत ठरते.

### ४. Mnemonics Words— शब्दांच्या अंगाने (Word Approach)—

शिक्षकाने अध्यापन करताना वेगवेगळ्या समानार्थी शब्दांचा भरपूर प्रमाणात वापर करून शिकवावे. त्यामुळे विद्यार्थ्यांच्या शब्दसाठ्यामध्ये नव—नव्या शब्दांची अधिक भर पडण्यास मदत होते. त्याचप्रमाणे विद्यार्थ्यांना शब्दसाठा वाढविण्यासाठी भाषा विषयाच्या शिक्षकाने अधिकाधिक प्रयत्नाने प्रेरित केले पाहिजे. त्यामुळे विद्यार्थ्यांना सांगण्यासाठी शिक्षक सुध्दा

नव—नवीन शब्दांचा शोध घेतील आणि त्यांचाही शब्दसाठा आणखी विपुल प्रमाणात समृद्ध होईल, असेही म्हणता येते.

### ५. नाट्यमयतेने व दृश्यात्मक विवरण अध्यापन (Role Playing and Scenrio Analysis based Teaching)—

भाषा विषयाच्या शिक्षकाने विद्यार्थ्यांना आपल्या विषय अथवा एखादा मुद्दा पटवून देताना त्या मुद्द्यांच्या अनुषंगाने नाट्यात्मकता, नाट्यमयता आणली तर ते विद्यार्थ्यांच्या लवकर लक्षात येऊन जास्त काळ स्मरणात राहण्यास मदत होते पुस्तकी ज्ञानाला थोड्या वेगळ्या कलाटिनेने नाट्यमयता आवून विद्यार्थ्यांपर्यंत पोहचवले तर तो विषय मुद्दा चांगल्या प्रकारे समजण्यास वेळ लागणार नाही. अशा या नाट्यमयते बरोबरच दृश्यात्मकताही आपोआपच विद्यार्थ्यांच्या स्मरण शक्तीला जास्त ताण पडणार नाही. कोणताही मुद्दा अगदी सहजतेने जास्तीत—जास्त काळ लक्षात ठेवण्यास मदत होईल. नाट्यत्मकता—नाट्यमयता व दृश्यात्मकता यामुळे विशिष्ट हावभाव, आवाजातील आरोह—अवरोह, शब्दांवरील आघात डोळ्याचे हावभाव, चढउतार, हातांचे विशिष्ट हावभाव यामुळे विद्यार्थ्यांना शिकविला गेलेला विषय पटकन लक्षात येतो असेही आपणास म्हणता येते.

### ६. सहयोगी अध्यापन पध्दती

‘मराठी भाषा विषयाचा विद्यार्थी हा सर्वगुणलक्ष्यी होण्यासाठी, त्या विद्यार्थ्यांमध्ये सभेवातालच्या वातावरणाचे समग्र भान रूजविले गेले पाहिजे. त्या विद्यार्थ्यांच्या ठिकाणी असणाऱ्या कुशाग्र बुद्धी, विचार, तर्क, कल्पना, विश्लेषण, आकलन, उपयोजन, रसग्रहण यांच्या अंतःशक्तीचा विकास साधणारे अध्यापन प्रसंग निर्माण करणे हे मराठी भाषा विषयाच्या अध्यापकापुढील खरे आव्हान आहे’<sup>4</sup>. यासाठी सहयोगी अध्यापन पध्दती जास्त प्रभावी ठरताना दिसते.

सहयोगी अध्यापन पध्दतीमध्ये वर्गातील शिक्षक व विद्यार्थ्यांचे संबंध हे अध्ययनशील समाजातील जाणत्या विकसनशील घटकांचे संबंध असतात. हा सहयोगी अध्यापन व्यवहार त्या—त्या काळातील बौद्धिक जाणिवांचा एक मूर्त व्यवहार असतो. स्वाभाविकच येथे शिक्षक व विद्यार्थ्यांतील नाते हे परस्परसंवादी असलेले दिसून येते. अशा सहयोगी अध्यापनात माहितीचे वितरण होत नसते, तर ज्ञानाची नवनिर्मिती होत असते. त्यामुळे या सहयोगी ज्ञानप्रक्रियेत शिक्षकाची भूमिका ही संमत्रकाची भूमिका असते. ‘हा सहयोगी अध्यापन व्यवहार म्हणजे आपल्या व्यक्तित्वातील अपुरेपणा आणि अनुभवातील न्युनता कमतरता यावर मात करण्याचे माध्यम आहे. किंबहुना ही आदानप्रदान प्रक्रिया ही स्वतःला मुक्त करण्याची प्रक्रिया आहे. या प्रक्रियेत शिक्षकाची विद्यार्थ्यांबरोबर सहअध्यायी होण्याचीही तयारी असायला लागते. यातूनच विद्यार्थी—शिक्षक यांच्यात बौद्धिक देवेघेवीचे नाते निर्माण होते’<sup>5</sup>. याला ‘सहयोगी अध्यापनपध्दती’ असे नामकरण डॉ.रमेश वारखेडे यांनी सांगितले आहे.

### समारोप

मल्टिमिडीयामुळे विद्यार्थी, शिक्षक व इतर स्टाॅफ यांच्यामध्ये शिक्षण आणि काम करण्याविषयीची भावना वाढीस लागून त्यात नाट्यमय परिवर्तन घडून येताना दिसते. या मल्टिमिडीया तंत्रज्ञानामुळे वर्गातील शिक्षणाच्या पध्दतीत आणि अनुभवात प्रचंड बदल घडून आल्याचे दिसून येते. क्लासरूममध्ये कॅमेरा वायर्स, फोटोग्राफीक व्हाईट बोर्ड, पॉवर पॉइंट प्रेझेंटेशन, दृक-श्राव्य माध्यमाच्या वापरातून विद्यार्थ्यांना चांगलेच प्रभावित करून त्यांची शिक्षणाविषयीची अभिरूची जास्त प्रमाणात वाढविता येते. असे प्रभावित झालेल्या विद्यार्थ्यांना डिजीटल फाईल, ईमेजेस चांगल्याप्रकारे प्रदर्शित करता येते. टॅबलेट, पीसी किंवा लॅपटॉप, संगणकावर आपण आपले नोट्स, टिपणे थेटपणे विद्यार्थ्यांपर्यंत पोहचवता येतात. तंत्रज्ञानाने शिक्षण-शिकणे या प्रक्रियेत प्रचंड बदल घडवून आणला आहे. आता Google Classroom सारखे जी-मेल चे नवे क्लासरूम आपल्याला आज ऑनलाईन उपलब्ध

आहेत. त्यावर आपल्या विषयाचे नोट्स डाउनलोड करून विद्यार्थ्यांपर्यंत पोहचवणे सोपे जाते. त्यासाठी विद्यार्थीसुध्दा ऑनलाईन मोबाईल वर जोडलेले असणे आवश्यक आहे. त्यामुळे फिडबॅक घेणेही सोपे जाईल.

शिक्षण अध्यापन आणि शिकणे या प्रक्रियेत पूर्णपणे वगळी नाविन्यता मल्टिमिडीया तंत्रज्ञानामुळे निर्माण झाली आहे. पारंपारिक शिक्षण व्यवस्थेत मल्टिमिडीया तंत्रज्ञानामुळे प्रचंड बदल, परिवर्तन घडून आलेला प्रत्ययास येतो. Student Oriented Teaching Learning Process या नव्या मल्टिमिडीया तंत्रज्ञानामुळे शिक्षकापेक्षा विद्यार्थ्यांची भूमिका शिक्षण-शिकणे या प्रक्रियेमध्ये अत्यंत महत्त्वाची झालेली आहे. आजच्या काळात या मल्टिमिडीयामुळे 'पेपरलेस व पेनलेस' वर्गाची निर्मिती झालेली दिसून येते. त्यामुळे शिक्षणाचा दर्जा टिकवायचा असेल तर पारंपारिक शिक्षणपध्दती सोबत मल्टिमिडीया तंत्रज्ञानाचा वापर करणे अनिवार्य आहे, असेही आपणास म्हणता येईल.

### संदर्भ ग्रंथ

1. Dr. Damodharan V.S ACCA, AICWA : 'Innovative Methods of and Mr. Rengrajan V. AICWA, Teaching'
2. Angnew P.W. Kellerman, : J (1996) Multimedia in the classroom, Boston A.S & Meyer, Allyn and Bacon
3. Hotstetter F.T : (1995) Multimedia Litracry, NewYork : MC Graw-Hill
4. डॉ केतकी मोडक, संतोष शेणई : उपयोजित मराठी, डॉ गं.ना.जोगळेकर, कृतज्ञताग्रंथ, पद्मगंधा प्रकाशन, पुणे, २०१२ पृ.२४
5. डॉ. रमेश वरखेडे : 'साहित्यविमर्श', साकेत प्रकाशन औरंगाबाद, २०१४,पृ. ९३,९४

## तरूणाईचे नवे विचारच देशाला नवी उंची गाठुन देतील

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### प्रस्तावना

कोणत्याही देशाचा विकास हा त्या देशातील असलेले तरूण तडफदार युवकच साकार करू शकतात. स्वामी विवेकानंद म्हणतात तरूणानो उठा, जागे व्हा तो पर्यंत थांबू नका जो पर्यंत तुम्हाला यश मिळत नाही. डॉ. बाबसाहेब आंबेडकरांनी सुध्दा तरूणांना जागे व्हा म्हटले आहे. याचा अर्थ म्हणजे तरूण जर जागे झाला तरचं त्यजच्या समाजाचा व खऱ्या अर्थाने देशाचा विकास झाल्याशिवाय राहणार नाही.

म्हणुन माझ्या मते तरूणाईचे नवे विचारच देशाला नवी उंची गाठुन देतील. तरूण मुलांवर आई-वडीलांचा विश्वास असायला पाहिजे दुसऱ्याने काहीही सांगितले तरी स्वतः डोळ्यांनी त्याची शहानिशा करूनच पुढचा निर्णय घ्यावा.

या आधारावर जगात घडलेली एक घटना सांगतो:- सुमारे १६० वर्षांपूर्वीची एक सत्यघटना म्हणजे आपल्या जगात कधीही अंधार असु नये यासाठी ज्याने विजेच्या दिव्याचा शोध लावला त्या व्यक्तीची ही कहाणी आहे त्यांचे नांव होते थॉमस अल्वा एडिसन एडिसनचा जन्म ११ फेब्रु. १८४७ रोजी अमेरिकेत झाला. थोडे मोठे झाल्यावर ते शाळेत जाऊ लागले. एकदा ते शाळेतुन येतांना हातात एक लिफाफा घेऊन आले. शिक्षकाने त्यांच्या आईला देण्यासाठी तो दिला होता. एडिसनची आई नॅन्सी मॅन्यु यांनी तो लिफाफा उघडला व त्यात जे लिहिले होते ते वाचुन तिला एकदम रडु आले.

आई रडायला काय झाले असे एडिसने विचारले मुलाला प्रेमाने गोजारत आई म्हणाली तुमचा मुलगा खुप हुशार आहे, हुन्नरी आहे. आमची शाळा खुप लहान आहे वती त्याच्या लायकीची नाही असे शिक्षकांनी लिहिले आहे. त्यानंतर एडिसन अनेक वर्षे शाळेत गेले नाहीत. आईने त्यांना घरीच शिकविले व त्या आईच्या शिकवण्याच्या बळावरच पुढे त्यांनी विजेच्या दिव्याचा शोध लावला, फोनोग्राम बनविला मुक्की कॅमेरे तयार केले. त्यांनी अशा शंभराहुन अधिक नवनवीन वस्तु तयार केल्यास तोपर्यंत त्यांची आई ईहलोकी गेल्या होत्या.

एक दिवस जुन्या वस्तुंची उचलठेव करतांना एडिसनला आपल्या लॉबरीत तो लिफाफा मिळाला जो पुर्वी त्यांना शाळेतुन मिळाला होता. त्यांनी तो वाचला आणि त्यांना अश्रु आवरले नाहीत. कारण त्या चिट्ठीत खंर तर असे लिहिले होते की, तुमचा मुलगा बौद्धिक दृष्ट्या अगदीच कमजोर आहे. त्याला आम्ही शाळेत ठेवु शकत नाही. त्याला शाळेतुन काढुन टाकले आहे. आईच्या आठवणीने एडिसन

यांचा गळा दाटुन आला. शाळेच्या मुख्यध्यापकांनी ज्या मुलाला मंदबुद्धी म्हटले होते त्याच मुलाला आईने जगातील एक महान वैज्ञानिक म्हणुन आकार दिला होता.

म्हणुन प्रत्येक आई-वडीलाने समजुन घ्यावे की त्यांचा मार्ग त्यांनाच शोधु. द्यात्र त्यांच्या विचारांना चालना द्या कल्पनांन मुर्त रूप देण्यासाठी त्यांना बळ द्या. मुख्या म्हणजे त्यांच्यावर पुर्ण भरवसा ठेवा आपण आपल्या नव्या पिढ्यांना योग्य मार्गावर नेण्यात यशस्वी झालो तर भारत विश्वगुरू होणार हे नक्कीच !

तरूण पिढी ही आपली सर्वात मोठी शक्ती आहे. असे स्वामी विवेकानंदानी फार पुर्वीचे सांगितले आहे. त्यांचे हे कथन पुर्वी जेवढे सत्य होते त्याहुनी आज अधिक समर्पक आहे. कारण भारताची सुमारे ६५ टक्के लोकसंख्या ३५ वर्षाहुन कमी वयाची आहे. सन २०२० पर्यंत आपण जगातील सर्वात तरूण देश ठरू असे दिसते.

सन २०१४ मध्ये राष्ट्रीय युवा धोरण जाहीर करतांना सरकारने म्हटले होते की, युवापिढीच्या क्षमता ओळखणे त्यानुसार त्यांना संधी उपलब्ध करून देणे आणि त्या माध्यमातुन त्यांना जगात योग्य स्थान मिळवुन देणे हा या धोरणाचा मुख्य उद्देश आहे.

पण युवाशक्तीच्या बाबतीत आपला समाजात सध्या योग्य मार्गाने जात आहे का ? हा खरा प्रश्न आहे दिशा ठिक आहे, पण गती कमी आहे, असे मला वाटते आपल्या युवाशक्तीने भरपूर प्रतिभा दाखविल्या आहेत. परंतु अनेक नानाविध कारणांनी प्रतिभा असुनही संधी उपलब्ध होत नव्हती. ज्यांनी संधी मिळते ते आपल्या आवडीनुसार रस्ता निवडु शक्त नाहीत, कारण आई-वडीलांची त्यांच्याविषयी वेगळीच महत्वाकांक्षा असते यामुळे लाखे मुले पदवी घेवुन बाहेर पडतात. पण पुढे काय, हा प्रश्न त्यांच्या पुढे आवासुन उभा असतो.

जगातील विकसित देशांमध्ये यांच्या नेमकी उलट स्थिती आहे. तेथे माध्यमिक शाळेच्या स्तरावरच मुलांचा कल काय आहे व ते कशात सर्वोत्तम ठरू शकतात योच योग्य मुल्यामापन केले जाते. त्यानुसार त्यांचे पुढचे शिक्षण होते.

मला असे वाटते की, संधी उपलब्ध करून देण्याचे सर्व प्रयत्न सरकारच्या पातळीवर व्हायला हवेत पण कुंटुबांनीही यात महत्वाची भुमिका बजावयाला हवी. मुलांना चांगली चित्रे काढता येतात तर अशांना चित्रकार बनु द्यावे. कोणाला खेळात आवड असेल तर डॉक्टर बनण्याऐवजी तो खेळाडु बनेल परंतु आई- वडील म्हणतात याने डॉक्टर इंजिनियरच व्हावे. तर हे शक्य होणार नाही.

शालेय पुस्तकांच्या बाहेर जाऊन काही तरी नवे जाणुन घेण्याची त्याला इच्छा व्हावी यासाठी आपण काही करत नाही. भारतीय कुठंबांनी हे केले तर आपणही जास्तीत जास्त मुलांना प्रतिभावंत करू शकु.न्युझिलंडच्या जिर्याराहक मार्क इंग्लीशने कृत्रीम पाय बसुवुन जगातील उंच शिखर माऊंट एव्हरेस्ट सर केलेत.

तुम्हीही आपल्या मुलांना अअसेच चमकवा नवचारांना प्रोस्तहान द्या तरचं नवा पहाड गाठता येईल.म्हणुन जाता जाता असे म्हणता येईल की **उडणाच्या पाखरांना परतीचे तमा नसावी, नजरेत सदा नवी दिशा असावी । घटयाचे काय बांधता येईल केव्ही । क्षितिजा पलीकडे झेप घेण्याची जिद्द असावी** ॥





**PART V**  
**ABSTRACTS**

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## ARE WE HEADING TOWARDS GLOBAL COOLING?

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### ABSTRACT

Global warming is an average increase in the earth's temperature due to greenhouse gases (GHGs) as a result of both natural and human activities. In common usage "Global Warming" often refers to the warming that can occur as a result of increased emissions of GHG's from human activities e.g. CO<sub>2</sub>, Ozone, Nitrous oxide, methane, Water vapour and flourinated flurocarbons gases which act like a greenhouse around atmosphere and increasing the temperatures. First theory of global warming came in 1824 by French Mathemetician - Jean Baptiste Joseph Fourier who discovered that the earth temp. was slowly increasing. In the last 19th century Fourier theory was lablled the "Green house effect" (Earth atmosphere traps solar radiation and reflects it back to the earth) by noble Laureate Svante Arrhenius. Climate varies in time; from season-to-season, year-to-year and decade-to-decade. Thus the climate change is now an established fact but because of several contradictory reports in this regard, has led us to believe that **are we now heading towards Global Cooling?** If it so happens, it will be an unprecedented incident in the history of human beings. The details have been discussed in this paper.

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**Keywords :** Climate change, global cooling.

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## A GECKO SKIN MICRO AND NANO STRUCTURE: A LOW ADHESION, SUPERHYDROPHOBIC, ANTI-WETTING, SELF-CLEANING, ANTIBACTERIAL, BIOCOMPATIBLE SURFACE

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### ABSTRACT

Animals that cling to walls and walk on ceilings owe this ability to micro and nano scale attachment elements. The highest adhesion forces are encountered in geckos. A gecko is the heaviest animal that can 'stand' on a ceiling, with its feet over its head. Hence geckos, and specifically their feet, have attracted significant attention in recent times with the focus centered on their remarkable adhesion properties. The skin of the geckoes consists of dome shaped scales arranged in a hexagonal patterning. The scales comprise of spinules, from several hundred nanometres to several microns in length, with sub-micron spacing and a small radius of curvature. This micro and nano structure of the skin exhibited ultralow adhesion with contaminating particles. The topography also provides a superhydrophobic, anti-wetting barrier which can be self clean by the action of low velocity rolling or impacting droplets of various size ranges from microns to several millimetres. Water droplets which are sufficiently small can easily access valleys between the scales for efficient self-cleaning and due to their dimensions can self-propel off the surface enhancing their mobility and cleaning effect. The exposed gecko skin surface has an antibacterial action and also well noted eukaryotic cell compatibility with human stem cells. The multifunctional features of the gecko skin provided a potential natural template for man-made applications where specific control of liquid, solid and biological contacts is required.

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**Keywords:** gecko, micro-structure, nano-structure, skin, surface

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## NOVEL METHOD FOR THE SYNTHESIS OF COPPER OXIDE NANOPARTICLES (CUONPS) USING SUGARCANE JUICE

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### ABSTRACT

*The synthesis, characterization and application of green synthesized nano materials have become an important part of nanotechnology in recent years. In the present study, we have synthesized CuONPs from sugarcane juice. The synthesised CuONPs were detected visually and by UV-Visible spectrophotometer which showed the absorbance peak at 625 nm. Particle size was determined by NTA and TEM, and stability by Zeta potential value. FTIR analysis confirms the presence of carboxylic acid and carbohydrate groups capping. XRD pattern gives the miller indices correspond to the FCC structure. The CuONPs showed effective antifungal activity against Aspergillus niger (MTCC 4325), Fusarium oxysporum (MTCC 1755) and Alternaria alternata (MTCC 7202). The synthesis of CuONPs by using sugarcane juice was found to be easy, rapid, cost effective and eco-friendly.*

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**Keywords:** Sugarcane juice; Nanoparticle Tracking and Analysis (NTA); FTIR; XRD; Zeta potential; TEM

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## DIFFERENTIAL INHIBITION OF HELICOVERPA PROTEASES BY PROTEASE INHIBITORS OF VIGNA SPECIES

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### ABSTRACT

*Plant Protease inhibitors (PIs) are the mostly studied class of plant defense proteins. They are abundantly present in seeds and storage tissues represents up to 10% of the total protein (Casaretto and Corcuera 1995). PIs carry out physiological changes by inhibiting the gut proteinase of the insect pest, thus adversely affecting protein digestion. The insect resorts the overproduction of proteases to compensate for the inhibited activity leading to deficiency of essential amino acids. This exerts additional physiological stress resulting in inhibition of growth. It also affects vital metabolic processes including proteolytic activation of enzymes, molting and water balance. The genus Helicoverpa includes the Old World species Helicoverpa armigera, Hubner (lepidopter: Noctuidae) generally considered to be the most important species within group. It has been recorded on more than 200 host species in India (Power, 1998) and is most damaging to cotton, pigeon pea, cow pea, chick pea, ground nut, sorghum, pearl millet, tomato and many other crops of economic importance (Vadoadaria et al, 1998). H. armigera being polyphagous pest with high reproductive and damaging potential, their suppression became difficult over past decade due to development of resistance to several chemicals. The results obtained in the present study opens new perspectives for utilization of protease inhibitors from the Vigna species in agriculture sector. Out of the 16 different vigna genotypes studied, 3 genotypes found to be the potent tryptic and chymotryptic inhibitors of H. armigera. Vigna except cowpea are the non host plants of Helicoverpa and hence they do not exert the selection pressure for acquiring the PIs resistance. Therefore, it is necessary to study non-hosts plant PIs as the potential source of protease inhibitors that overcome the problem of insect adaptation to the defense mechanism of host plant.*

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## PRE AND POST HARVEST DISEASES OF SOME SOLANACEOUS FRUITS FROM AMRAVATI REGION

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### ABSTRACT

Survey of pre and post harvest diseases of some solanaceous fruits used for vegetable purpose were carried out from July-2016 to December-2017. It is observed that most of the fruits get destroyed by pathogenic fungi. Some of the fungi found in post harvest form were not reported in pre harvest condition whereas, inoculums of some pathogens remain constant in pre and post harvest condition. Kochs postulates method was used to confirm the pathogenesity test .Pathogenic fungi reported in pre and post harvest condition of *Solanum melongina* were *Colletotrichum capsici*,and *Dreshschlera rostrata*,*Cladosporium cladosporioides* while *Rhizopus stolonifer*,*Rhizoctonia sp* and *Fusarium oxysporum*,*Phoma exiqua* were reported on *Solanum tuberosum*, *Alternaria alternate*,*Fusarium oxysporum* and *Curvularia lunata*, *Cladosporium sp* were reported on *Lycopersicon lycopersicum*.

**Key words** – Pre and post harvest diseases,Solanaceous fruits

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## WADERS DIVERSITY IN THE KORAMBI TALAV OF GHODAZARI SANCTUARY, MAHARASHTRA, INDIA

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### ABSTRACT

The present study was undertaken to explore species diversity of birds, seasonal abundance of birds and their migratory pattern in and arrond the study area. The study area, Korambi Talav (20°35'80"N and longitude 79 °35'24"E) is located within the newly approved Ghodazari Sanctuary by Government of Maharashtra. Korambi village is remotely situated in the Nagbhid Taluka of Maharashtra and is in consideration for rehabilitation. It presents unique geographical site having mountaneous dry deciduous tropical forest, dominated by teak *Tectona grandis* and bamboo *Dendrocalamus strictus*, interspersed with meadows and paddy cultivations. A toal of arround 37 species belonging to 11 families 6 orders were recorded during Jan, 2015 to Dec. 2017. The species recorded included 3 Breeding Migrant (BM), 14 Passage Migrant (PM) and 20 Residents (R). Among the orders, Charadiformes is the richest order in terms of avian species diversity, represented by 12 species while families Scolopacidae and Anatidae are found predominant. Wooly necked stork newly recorded during the present study is vulnerable (VU) species according to IUCN red data list. Present study will helps in designing conservation strategy as this aquatic ecosystem adversely affected by fishing and agricultural activity which leads to bio-accumulation of pesticide in the pond posing serious threat and hence require immediate attention.

**Keywords** : Charadiformes, Migrant, Resident, Ghodazari, Scolopacidae

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## BIOGENICSYNTHESIS OF METAL NANOPARTICLES USING FUNGI

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### ABSTRACT

Nanotechnology has been playing a crucial role, solving various problems in the field of agriculture, electronics and medicine. The broad range of applications shown by nanomaterials is due to the large surface area of the particles because of their small size (<100 nm in one dimension). The unique physico-chemical properties of nanoparticles differ from that of the bulk material; have attracted the attention of several workers to harness the multiple functionalities of nanoparticles. Currently, the green synthesis of metallic nanoparticles is being investigated to improve and/or protect the environment by decreasing the use of toxic chemicals and eliminating biological risks in pharmaceutical and biomedical applications. The use of fungi for catalyzing specific reactions leading to inorganic nanoparticles is a new and rational biosynthesis strategy. Extracellular synthesis of nanoparticles by fungi offers an advantage of obtaining large quantities in a relatively pure and at a rapid rate. Three main factors in green nanoparticle synthesis by fungi includes; use of water as an environmentally benign solvent, biomolecules as reducing and stabilizing agents. Different fungi were successfully used for the synthesis of silver, gold, iron oxide, copper, aluminium oxide and zinc oxide nanoparticles. The synthesis was found to be rapid and eco-friendly.

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**Keywords** : Nanotechnology, Fungi, metal nanoparticles, green method, synthesis

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## **FUSARIUM MEDIATED GOLD NANOPARTICLES FOR RAPID DETECTION OF NANOMOLAR LEAD (II) IONS IN DRINKING WATER**

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### ABSTRACT

Gold nanoparticles (AuNPs) were synthesized by aqueous cell free filtrate of *Fusarium moniliforme* (MTCC-156). Absorbance maxima at 536 nm in UV-Visible spectroscopy confirmed the synthesis of *Fusarium* mediated AuNPs. The characterization of AuNPs was done by Zeta potential measurement for stability, Nanoparticle Tracking Analysis (NTA) for size measurement, TEM, FTIR and XRD for elucidation of nature of AuNPs. Even the traces of Pb (II) ions present in drinking water are responsible for systemic health hazards. *Fusarium* mediated gold nanoparticles can be used for the detection of Pb (II) ions in nanomolar concentration. The Pb (II) ions react specifically with AuNPs by forming colored aggregates of AuNPs, which can be detected by shift in the absorbance of AuNPs. These AuNPs can be used to device a simple and rapid method for nanomolar detection of Pb (II) in water.

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**Keywords**: *Fusarium moniliforme*, Gold nanoparticles, Pb (II) ion, nanomolar

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## QUANTITATIVE ESTIMATION OF IMPORTANT AROMATIC PHYTO- CONSTITUENTS OF POGOSTEMON BENGHALENSIS (BURM.F.)KUNTZE

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### ABSTRACT

Higher plants are a treasure house of potential drugs. The family Lamiaceae is represented by 252 genera and 6,900 species, out of which about 400 species are reported from India. The members of family include aromatic plants that are being used in traditional medicine for various disorders. Pogostemon benghalensis (Burm.f.) characterized by verticillaster inflorescence. Narrower corolla tube and less crowded inflorescence is a distinctive character of plant. It is mainly found in Bangladesh, India, Malaysia and China. The genus has been reported to be used by tribals mostly for snake bite. Decoction of fresh leaves are used to clean wounds and promote their healing, fresh leaves oil used for hysteria and stomachache. The primary phytochemical analysis of the plant extracts showed the presence of various secondary metabolites like phenol, flavonoids, terpenoids and cardiac glycosides, According to GC-MS analysis, totally 4 compounds were isolated by their retention time (RT) and mass spectra namely Salvene,  $\gamma$ -Linolenic acid, Luminol, Cypermethrin.

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**Key words :** Lamiaceae, Pogostemon benghalensi, GC-MS analysis, aromatic oil

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## SYNTHESIS OF FLUORESCENT CARBON NANODOTS USING WASTE FRUIT PEELS AND THEIR ROLE IN PLANT BIOIMAGING

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### ABSTRACT

Nanotechnology (NT) is a branch of science which deals with the study of materials at their nano-scale i.e. ranging between 1-100 nm. Here, the properties of matter on an atomic and molecular scale are studied. The novel class of fluorescent carbon nanoparticles i.e. Carbon Dots (CDs) possess remarkable features like high aqueous solubility, chemical inertness, good conductivity, low toxicity and eco-friendliness. A simple and green approach was developed for the synthesis of CDs from the waste fruit peels. The synthesized CDs were detected using UV- trans-illuminator for fluorescence activity and characterized by UV-Vis absorption spectrophotometer, zeta potential measurement, Nanoparticle Tracking Analysis (NTA), photoluminescence and Fourier Transform Infra-red (FTIR) spectroscopy. Traditionally used fluorescent materials are very costly and hazardous to the human health and environment, whereas the fluorescent CDs could be a promising substitute for these materials. Preliminary studies with effect of fluorescent CDs in germinating seeds of *Vigna radiata* L. reveals the potential role of the CDs in bioimaging and as biolabel.

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**Keywords:** Nanotechnology, Carbon Dots, Fluorescence, Bioimaging

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## BIOGENIC SYNTHESIS OF BORON AND COBALT NANOPARTICLES USING PLANT EXTRACT

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### ABSTRACT

Nanoparticles are the nano- sized particles which have found various application in the fields of medicine, biology, catalysis etc. The use of plants for synthesis of nanoparticles offers a wide range of benefits over other biological synthesis methods because it does not required the maintainance of cell culture. Cobalt and boron are the essential micronutrients required by the plants, also called trace elements, required for the normal growth of most plants. Cobalt and boron plays an important role in the nitrogen fixation by the plants. Boron plays a vital role in sugar transport, cell wall synthesis, cell wall structure, root growth, pollination and germination of pollen grain. In the present work total reducing strength or phenolic compound in leaf extract of Azadirachta indica were used to synthesize Boron and Cobalt nanoparticles with Boric acid and cobalt chloride as the precursor. Synthesized Boron and cobalt nanoparticles were characterized using different techniques such as UV- Visible spectrophotometer which showed the characteristic peaks at 220 nm and 245 nm respectively, Further, characterization includes FTIR analysis for detecting the plant metabolites as capping agents on nanoparticles. The zeta potential of boron (-2.12) and cobalt (-10.2) nanoparticles respectively confirmed the stable nature of the nanoparticles. The synthesized boron and cobalt nanoparticles will be used to evaluate the effect on pollen germination and plant growth promotion. The biogenic green route for synthesis of cobalt and boron NPs was found to be easy and scalable and eco-friendly.

**Keywords:** Boron Nanoparticles, Azadirachta indica, Cobalt nanoparticles, Green Synthesis

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## ISOLATION AND IDENTIFICATION OF FUNGAL ENDOPHYTES FROM MEDICINAL PLANT AND THEIR ANTIMICROBIAL AND ANTICANDIAL ACTIVITY

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### ABSTRACT

Endophytes invade the tissues of living plants and reside between living plant cells. These offer remarkable potential for the exploitation of novel and eco-friendly secondary metabolites used in medicine, pharmaceutical industry, food industry and agriculture. In past two decades many valuable bioactive compounds with antimicrobial, insecticidal, cytotoxic and anticancer activities have been successfully obtained from the endophytic fungi. All the plants which were selected for the isolation of fungal endophytes are highly medicinal plants and each plant is very useful from the medicinal point of view. *Gymnema sylvestris* reported to cure cough, dyspnoea, ulcers etc. *Tinospora cordifolia* is a common climbing shrub which is used in medicine, is useful in preparation acting as a tonic and aphrodisiac. *Rauwolfia serpentina* is used as Tranquilizer. *Aegle marmelos* is a deciduous sacred tree, every part of the tree is medicinal and useful. *Azadirachta indica* is valuable as an antiseptic, used in the treatment of small pox. *Asparagus racemosus* is an excellent safe herbal medicine for ante-natal care. It is useful in diarrhoea etc. The main reason for selection of fungal endophytes of medicinal plants in the present study is that, number of secondary metabolites is produced by fungal endophytes is more than that of any other endophytic microorganism.

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## **COPPER NANOPARTICLE IMPREGNATED BIODEGRADABLE POLYMER FILM FOR FRUIT PACKAGING**

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### **ABSTRACT**

India is a second largest producer of fruits and vegetables. Being perishable in nature, there are nearly 40% losses due to the deterioration of fruits and vegetables by pathogens. This huge loss of spoilage and wastage of food is not acceptable as far as concerning Indian economic conditions and population. Therefore, there is an extreme need of improving shelf life and quality of perishable foods. Petroleum-derived polymers have been already in use for this purpose. But, their non-renewable and non-biodegradable nature paves the need for development of greener alternatives, which includes biodegradable polysaccharides films impregnated with nanoparticles (NPs). Nanotechnology (NT) thus provides an imperative substitute for this. Copper nanoparticles (CuNPs) are proved to be a potent antimicrobial agent against different fruit spoilage fungi like *Fusarium oxysporum* (MTCC 1755), *F.culmorum* (MTCC 349) , *Aspergillus niger* (MTCC 4325) etc. In present study we have evaluated the effect of biogenic CuNPs impregnated in starch film for the preservation of fruits. CuNPs were synthesized using *Tinospora cardifolia* extract and thus synthesized CuNPs were characterized using UV-Visible spectroscopy showed absorbance at 713nm, Zeta Potential measurement was found to be -22.4mV, Nanoparticle Tracking analysis shows average size of 79nm with concentration of  $5.24 \times 10^7$  and FTIR spectroscopy reveal the capping of CuNPs. The biogenic CuNPs impregnated starch films can be used for fruit wrapping and preservation.

**Keywords:** Biogenic CuNPs, Starch film, food spoilage, Nanoparticles

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## **EFFICACY OF SILVER NANOPARTICLES AGAINST FUNGI CAUSING SUPERFICIAL MYCOSIS AND DEVELOPMENT OF NOVEL ANTIFUNGAL GEL**

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### **ABSTRACT**

Superficial mycosis is a pandemic medical condition which affects population from every age group. Antifungal drugs nowadays can only offer to cure the symptoms, not disease. Antimicrobial resistance developing in pathogenic microbes is a matter of concern, there is a need to develop new and novel nanotechnological strategies to control disease condition. Silver nanoparticles are well known for their antimicrobial potential. Synthesis of silver nanoparticles was done by eco- friendly biological method. In vitro efficacy of nanoparticles alone and in combination with antifungal drug ketoconazole was performed against fungi causing superficial mycosis. Formulation of antifungal nanogel effective for superficial mycotic infections was formulated using silver nanoparticles.

**Keywords:** Silver nanoparticles, biological synthesis, antimicrobial activity, superficial mycosis

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## ANT BIODIVERSITY AND ITS RELATIONSHIP TO AGRO- ECOSYSTEM FUNCTIONING: A REVIEW

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### ABSTRACT

*Among insects ants (order Hymenoptera) are important components of ecosystems. Ants are abundant and dominant in agro-ecological systems, most species are carnivorous, omnivorous, predators and some species are pests on economically important crop plants. Ants act as ecosystem engineers as good soil turners by building tunnels in the ground that allow for increased water infiltration and amount of nitrogen in soil. They alter the physical and chemical environment through their effects on plants, microorganisms, and other soil organisms. In the present review the diversity and role of ants in agroecosystem is discussed mainly from the perspective of the effect of ground-dwelling ants on soil processes and function, emphasizing their role as agro-ecosystem engineers. Their role as biological pest control is also well-thought-out, by comparing the ability of ant predators on pest assemblages in different agroecosystems. From the present information certain gaps in the information on the ants' role in agroecosystem functioning are also noted.*

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**Keywords:** ant diversity; agroecosystem; ant predators; soil function

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## SYNTHESIS AND APPLICATION OF SELECTED NANOPARTICLES FOR MANAGEMENT OF SOFT ROT OF *ZINGIBER OFFICINALE* (ROSCOE)

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### ABSTRACT

*About 60% of Indian population depends solely on agriculture for their livelihood. Ginger is one of the important commercial spice crop cultivated in India and worldwide. But, many fungal pathogens like *Fusarium* and *Pythium* sp. are causing huge loss of yield every year. Traditionally, chemical fungicides like benzimidazole and dicarboximide are used in controlling ginger rhizome rot. These fungicides are hazardous to human health and environment. Nanotechnology plays an important role in controlling different plant pathogenic fungi. Nanotechnology is a field of science that deals with synthesis and application of materials in the range of nanometers i.e.  $10^{-9}$  meter. Antifungal activity of biologically synthesized copper nanoparticles (CuNPs) by *Phyllanthus emblica* (amla) extract was studied against the fungal isolate obtained from infected ginger. CuNPs were characterized by UV-Visible spectrophotometry, Fourier Transform Infrared spectroscopy (FTIR), Zeta potential measurement and Nanoparticle Tracking Analysis (NTA). Nanobased fungicide against pathogenic fungi causing ginger soft rot could be formulated using biologically synthesized CuNPs.*

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**Keywords:** Nanotechnology, Copper Nanoparticles, Soft rot, *Fusarium*, *Pythium*

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## UPSTREAM AND DOWNSTREAM PROCESSING OF RAW STARCH DEGRADING BACTERIAL ENZYME

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### ABSTRACT

*Starch degrading enzymes are among the most important enzymes and they are used in many industry for different purposes such as food, fermentation, textile, pharmaceutical and paper industry. The aim of current study is to isolate amylase producing bacteria from soil and production of enzyme. The isolation of starch degrading bacteria was carried out by serial dilution and plating method. The isolated bacterial strain was grown in 100ml flask at 37°C on orbital shaker for 24 hrs for inoculum preparation. The bacterial strain was inoculated in 12 litres bubble column reactor. After incubation of 7 days, the medium was clarified by centrifuged and then enzyme was partly purified by Ultra filtration and Nanofiltration. The enzyme was further characterized for pH optima, temperature optima and Km etc.*

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**Keywords:** downstream, upstream, amylase, starch, ultra-filtration and nano-filtration

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## INTEGRATED EFFECT OF CHEMICAL AND MECHANICAL TREATMENT ON SEED GERMINATION OF SOLANUM SPECIES

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### ABSTRACT

*The giant genus Solanum, with more than 1400 species is distributed worldwide, and it is the largest genus in the family Solanaceae. The genus includes important economic plants such as potato (Solanum tuberosum L.), tomato (Solanum lycopersicum), eggplant (Solanum melongena). The cultivated as well as the wild species from this genus are being extensively used for various breeding studies. However, poor seed germination limits use of such species for plant breeding program. Hence present study deals with treatments of seeds with various concentrations of plant growth hormone, which showed the acceleration in seed germination rate in wild Solanum species under study. Seeds of S. torvum, S. virginianum, S. anguivi and S. khassianum were studied in present analysis. Mechanical seed treatment experiment involved scarification of seeds. Whereas, chemical treatment involved soaking of seeds in different concentrations of gibberellic acid. Also a combined experiment was set which included use of both mechanical and chemical treatment for seeds. Each of these experiments showed a remarkable effect on seed germination. Use of gibberellic acid increased the rate of seed germination and scarification of seeds proved more effective to increase the seed germination rate. However, combined use of mechanical and chemical treatment method remarkably accelerated the seed germination in wild species of Solanum proving it as an effective way to increase seed germination rate.*

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**Keywords:** Solanum, seed germination, scarification, gibberellic acid

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## ANTIUROLITHIATIC POTENTIAL OF A WINTER MUSHROOM “*FLAMMULINA VELUTIPES*”

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### ABSTRACT

*Nephrolithiasis or renal stone disease remains a significant health problem in the adult population. The worldwide incidence of urolithiasis is high, about 80% of urinary calculi are calcium oxalate stones alone or calcium oxalate mixed with calcium phosphate. So an easy and herbal source is needed to prevent or may treat disease at preliminary level as diet source. (Flammulina velutipes) an edible mushrooms also known as Enokitake or Enokidake are native to China, Japan and Korea. It is known to have a good source of nutrients specially protein and fiber. Other than that present study designed for screening of antiurolithiatic potential of aqueous extract of Enoki mushrooms. In vitro experiment of inhibitory potential or antiurolithiatic activity of extract of Flammulina velutipes significantly reduced the calcium oxalate formation. It showed total phenolic compounds 0.082 mg GAE/g of dry sample and antioxidant potential of 50% by DPPH radical scavenging activity assay respectively. The F. velutipes mushrooms have good antiurolithiatic activity which can be enhanced using blending with citrus fruits. As this may be used as a type of nutraceutical combination possess high antioxidant activity which are highly beneficial for kidney stone patients as a health supplement.*

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**Keywords:** Nephrolithiasis, Flammulina Velutipes, Antiurolithiatic Potential, Calcium Oxalate, Nutraceutical

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## DIVERSITY OF TIGER BEETLES (COLEOPTERA: CICINDELIDAE) AROUND WANI, DIST. YAVATMAL, (M. S.)

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### ABSTRACT

*The study area, Wani is situated at eastern side of Yavatmal district (M.S.), located at co-ordinates 20°07' N latitudes and 78°95' E longitude. Many coal-mines are located around Wani. These mines impart their effect on the environment which may affect the coleopteran diversity. With this view the tiger beetle diversity is studied during January 2011 to December 2015. Cicindelidae is one of the important families of Coleoptera and beetles are commonly called as tiger beetles. The members of this family are natural predator at larval as well as adult stages. During the study period five different species of five different genus of family Cicindelidae are found which varies in body length from 10mm to 15.5mm and are identified with key characters.*

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**Key Words:** Coleoptera, Cicindelidae, Tiger beetle, Diversity, Coal-mines, Wani.

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**PRELIMINARY PHYTOCHEMICAL ANALYSIS OF THE FRUIT OF  
LIMONIAACIDISSIMA LINN.**

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**ABSTRACT**

*Limoniaacidissima L. of family Rutaceae, is used traditionally for the treatment of constipation, vomiting, diabetes, cardiac problem and diuresis. The fruit is used as a cuisine in the preparation of 'chatni' in villages of Maharashtra. Present study deals with the phytochemical analysis of the fruit of Limoniaacidissima L. The study revealed the presence of various phytochemicals like, Alkaloids, Flavonoids, Phenolics, Quinones, Proteins and Carbohydrates in the fruit of L. acidissima L. The results approve the medicinal importance of Limoniaacidissima L.*

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**Key words:** *Limoniaacidissima, Alkaloids, Flavonoids, Phenolics, phytochemicals, etc.*

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**SULFUR NANOPARTICLES LOADED ANTIBIOTICS DESTROYS MULTIDRUG  
RESISTANT UROPATHOGENS**

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**ABSTRACT**

*Unfortunately, effectiveness of antibiotics is reduced by increasing number of antibiotic resistance pathogens. The overuse of it in humans give rise to microorganism resistant to antibiotics. The novel therapy is needed to eradicate and prevent antibiotic resistance problem. Antimicrobial agents in the form of nanoparticles act with higher efficacy against bacteria, assuming this the action of sulfur nanoparticles could enhanced against isolated uropathogens. In the present study, we report ecofriendly and green method for the synthesis of sulfur nanoparticles (SNPs) using sodium thiosulfate in presence of leaf extract of C. roseus. The SNPs were conjugated with amoxicillin, neomycin and norfloxacin. The synthesized SNPs and conjugate were characterized by NTA analysis, Zeta potential analysis, XRD, FTIR, and TEM analysis. The phytosynthesized SNPs were spherical, polydispersed with particle size of 50-60 nm. Characterization data reveals the successful conjugation of SNPs with antibiotics. Evaluation of antibacterial study revealed that SNPs exhibited better bactericidal efficacy against isolates of uropathogens. The results revealed that SNPs loaded antibiotics were also effective against uropathogens. It can be concluded that the synthesized sulfur nanoparticles can be used as antibacterial agents after thorough experimental trials in animals.*

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**POPULATION TRENDS OF BIVALVES IN PUS RIVER.**

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**ABSTRACT**

*Pusad tehsil is blessed with Pus river, rich in various fresh water flora and fauna. The following study is carried out to identify Bivalves population in the river. Different pockets of water were selected on various points of Pus river and population of different species of Bivalves is observed. It was found that the river contains *L. marginalis* as well as different species of *Perecia*.*

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**Keywords:** Pus river, Bivalves, population trends

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**NUTRACEUTICAL POTENTIAL OF *TINOSPORA CORDIFOLIA* (WILLD.) MIERS. LEAVES**

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**ABSTRACT**

*Tinospora cordifolia* is commonly known as *Guduchi* or *Gulvel* found throughout tropical India, ascending to an altitude of 300m. Leaves are well known for their medicinal potential, however during survey of North Maharashtra leaves were found to use as vegetable. Leaves were assessed by estimating nutritional and medicinal constituents. Estimation of primary nutrients (Lipids, Crude fat, Carbohydrates, Proteins, fibres), vitamins (ascorbic acids and carotenoids) and antioxidants (Lycopene, anthocyanin and simple phenolics) was done. Minerals were estimated in terms of ash yield. Ash was analyzed quantitatively and qualitatively for its mineral constituents. Material was also screened for presence of bioactive molecules.

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**Keywords:** Wild edible, Nutraceutical Potential, medicinal, *Tinospora cordifolia*, leaves

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**THE EFFECT OF IPOMOEA QUAMOCLIT L. PLANT EXTRACT ON ECONOMIC PERFORMANCE OF SILKWORM, BOMBYX MORI L. (Lepidoptera:Bombycidae)**

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**ABSTRACT**

The effect of *Ipomoea quamoclit* L. plant extract were tested against 4<sup>th</sup> and 5<sup>th</sup> instar larvae of silkworm for improving the performance of growth and cocoon characteristics of silkworm, *Bombyx mori* L. The various concentrations of *Ipomoea quamoclit* plant extract (0.5, 1.0, 1.5, 2.0, 2.5 %) were administered to 4<sup>th</sup> and 5<sup>th</sup> instar silkworm with mulberry. The larval weight, cocoon characteristics were influenced by various concentration of plant extract. The intensity of influence was depend on the time and dose exposure. The plant extract at 2.5% concentration resulted higher larval growth and increased cocoon weight. The mean larval weight, relative growth rate of final instar larvae of *Bombyx mori* were increased. The average pupa weight, shell weight, shell ratio and silk filament length were also increased with this supplementation of plant extract over the control. In the present study the plant extract of *Ipomoea quamoclit* have growth promoting effect in silkworm which helps to improve the performance of silk in *Bombyx mori*.

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**Keywords:** Plant extract, *Bombyx mori*, parameters.

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**DIRECT AND INDIRECT PLANT REGENERATION FROM INTERNODAL EXPLANTS OF RUTA GRAVEOLENS L.**

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**ABSTRACT**

*Ruta graveolens* L. commonly known as Rue is a herbaceous perennial and is widely exploited for its bioactive principles which are of high pharmaceutical importance. Direct and indirect organogenesis was established from internodal explants on Murashige and Skoog's medium (MS) supplemented with different combinations and concentrations of auxins (Indole Butyric Acid (IBA), 2, 4-Dichlorophenoxy acetic acid (2, 4-D), Napthalene Acetic Acid (NAA) and cytokinins (Benzyl Amino Purine (BAP) and Kinetin (KIN). Indirect organogenesis via callus phase was obtained from internodal explants on MS full strength medium augmented with different concentrations of plant growth regulators. The highest percentage of response (81.22±0.50) and highest number of shoots (21.66±0.57) per culture for shoot bud regeneration was obtained for the concentration of BAP+IBA (1.5+1.0)mg/l. The same concentration effectively increased the number of shoots per culture. Moreover, the direct shoot induction was also established from internodal segments. Proliferation of shoots was achieved on MS media fortified with different concentrations of plant growth regulators. The highest shoot frequency (74.22±0.69) and the highest number of shoots (18.00±1.15) per explant were obtained from BAP+KIN(1.5+1.0)mg/l. Different concentrations of indol-3-butyric acid (IBA) and Indole acetic acid (IAA) were used in half strength MS medium for in vitro rooting of regenerated shoots. The maximum percentage of rooting (86.10±0.50) and the highest number of root formations (7.88±0.19) per shoot were observed on the medium containing 1.0 mg/l of IAA. Plantlets with well developed root and shoot systems were successfully acclimatized (85%) and established in earthen pots. This is the first report that describes direct and indirect organogenesis simultaneously from internodal explants.

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**Key words:** Direct organogenesis, indirect organogenesis, Regeneration, *Ruta graveolens* L.

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## **FLY ASH INDUCED PHYSIOLOGICAL AND MORPHOLOGICAL RESPONSES OF *GOSSYPIUM ARBOREUM* L. AT DIFFERENT DEVELOPMENTAL STAGES.**

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### **ABSTRACT**

The present study was meticulously channeled to unfurl the brilliance and importance of the fly ash (FA) in agriculture. The effect of varying levels of FA on the yield, morphological and physiological response of *Gossypium arboreum* L. at three growth stages were assessed under field conditions. The experiments were carried out in plots of 0.5 sq. meter. The current study showed significant boost in plant biomass, height and yield (maximum in T<sub>5</sub> and minimum in T<sub>0</sub>). The concentration of photosynthetic pigments in vegetative phase was more in T<sub>0</sub> than other treatments excluding T<sub>5</sub>. The pre-flowering stage showed increase in photosynthetic pigments from T<sub>0</sub> to T<sub>5</sub>, reaching utmost in T<sub>5</sub>. The post-flowering stage showed the similar increase in photosynthetic pigments but, the concentration declined than that of pre-flowering phase. The study showed enhanced protein and carbohydrate quantities from T<sub>1</sub> to T<sub>5</sub>, with maximum in T<sub>5</sub> in all the three stages. After post-flowering stage reduction in the physiological response was observed probably due to the distribution of nutrients at this stage. The accumulation of macro and micro nutrients by plants was also raised as the fly ash concentration increased without showing any detrimental effect to the plant

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**key words:** Agriculture, carbohydrates, fly ash, *Gossypium arboreum* L., photosynthetic pigments, proteins.

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## **LOCALIZATION OF NPY IMMUNOREACTIVITY IN THE PROXIMAL AND DISTAL INTESTINAL REGION OF TELEOST FISH, *NOTOPTERUS NOTOPTERUS*.**

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### **ABSTRACT**

The purpose of the present study was to study the localization of the neuropeptide NPY in the intestine of the teleost fish *Notopterus notopterus*. The distribution and relative frequency of the endocrine cells in the intestine were studied immunocytochemically using Streptavidin biotin peroxidase complex method. The tissue was fixed from the proximal and distal intestine. The NPY immunoreactive (IR) endocrine cells were found in the distal intestine at low frequencies than proximal intestine. All the NPY IR cells were stained dark brown color. Numerous tadpole like, elongated, rod like, spindle shaped, sac like, pyramid like, triangular shaped, ovale and round shaped NPY IR cells were observed in the intestinal mucosal epithelium.

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**Keywords:** Immunocytochemistry, NPY, Intestine, Teleost, *Notopterus notopterus*

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## PROTECTIVE ROLE OF *ALOE BARBADENSIS* EXTRACTS AGAINST ALUMINIUM SULPHATE TOXICITY IN LIVER AND KIDNEY OF RATS

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### ABSTRACT

*Aloe barbadensis* is widely used in Ayurvedic, Homoeopathic and Allopathic streams for its marvellous medicinal properties. This plant is one of the richest natural sources of health for mammals including human beings. The chemistry of the plant has revealed the presence of more than 200 different biologically active substances, which include antimicrobial, antibacterial, antifungal, antiviral, activities of the non-volatile constituents of the leaf gel. *Aloe* species are widely distributed in the African and the eastern European continents, and are spread almost throughout the world. The genus *Aloe* has more than 400 species. The aluminium sulphate induced changes on hepatic and renal oxidative stress in rats were studied in varying duration exposed animals, both short and long term. Biochemical changes along with histopathological alterations in soft tissues parenchyma with lymphocytes, such as fibrosis, micro vesicular steatosis of the hepatocytes for both and appearance of many phagocytic cells, pyknotic cells were observed in exposed animals. Our study as well as studies of other investigators have showed significant increase in liver and kidney LPO levels in animals treated with aluminium sulphate while the effect was attenuated by the *Aloe vera* extracts. Also, aluminium caused a significant decrease in antioxidant enzyme activity and this effect was reversed in groups treated with *Aloe vera* extract. Treatment with *Aloe vera* extract significantly reduced the adverse effects related to most of biochemical parameters (AST, ALT, triglycerides, total cholesterol, protein, albumin, and creatinine) altered in animals treated with aluminium, related to hepatic and renal oxidative stress. Oral administration of *Aloe vera* extract to aluminium treated rats attenuated the deranged histopathological changes significantly. It can be concluded from these results that *Aloe vera* extract protects against aluminium toxicity and warrants more studies for the specific use of the active compounds responsible for their antioxidant effects.

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**Keywords:** *Aloe vera* extract, Aluminium Toxicity, Hepatic, Kidney, Biochemical parameters

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## EFFECT OF SODIUM FLUORIDE ON HISTOPATHOLOGICAL CHANGES IN TESTIS OF FRESHWATER FISH, *RASBORA DANICONIUS*

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### ABSTRACT

Fluoride is considered to be a pollutant to aquatic ecosystem, beyond the normal permissible limits. The freshwater weed fishes are very sensitive to the fluoride. The fishes are the major component of food web of humans. The freshwater fish *Rasbora daniconius* were exposed to 100mg/l Sodium fluoride for 30 days to study its effect on histology of gonads. The significant to highly significant histological alterations were noted. The testis composed of convoluted mass of seminiferous tubules, which are seen oval to irregular in shape in the transvers section of testis of control fishes. The lumen of tubules shows various stages of spermatogenesis with large number of evenly distributed sperms. After exposing the fish to NaF, agglutination of spermatids and intertubular connective tissue loss was seen. The primary and secondary spermatids were found underwent cytolysis, which may affect the fish production.

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**Key words:** Sodium fluoride, Testis, histopathology, *Rasbora daniconius*.

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## NATURAL INGREDIENTS FOR HEALTHY SKIN: GROWING OPTIONS FOR THE TREATMENT OF FACIAL HYPERPIGMENTATION USING HERBAL EXTRACTS

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### ABSTRACT

*Pigment melanin is responsible for imparting color to the skin. Accumulation of excess melanin and its distribution leads to serious aesthetic problems of hyperpigmentation. Most common causes of excessive melanin production are inflammation caused by sunlight, skin damage, allergic reaction, certain medication and rise in progesterone and estrogen hormones during pregnancy. At the present time, facial hyperpigmentation disorders are one of the common complaints in adult population of all races. Specifically, some women often express a desire to lighten skin tone by achieving improved visible tones, reduction in yellowness (or sallow tone), and reduction in the appearance of hyperpigmented spots (age or sun spots). Both dermatologists and cosmetologists are searching for long-term topical skin care solutions to address the problems presented by skin hyperpigmentation. Traditional depigmenting agents, such as hydroquinone, corticosteroids, and kojic acid, although highly effective, can raise several safety concerns such as ochronosis, atrophy, carcinogenesis, and other local or systemic side effects with long-term exposures. Hence, there is a need of better tolerated, yet effective, natural skin lightening agents that could be efficiently utilized by a wider population. An understanding of the benefits of few natural and botanical extracts has led to the investigation of several potential compounds in order to develop new products to address pigmentation problems. Active compounds isolated from plants, such as arbutin, aloesin, gentisic acid, flavonoids, hesperidin, kojic acid, arbutin, licorice, niacinamide, yeast derivatives, and several polyphenols, inhibit melanogenesis without melanocytotoxicity by different mechanisms, not properly understood till date. Further advancement in treatments using these natural products as well as several other related derivatives isolated from various plants are required in order to get complete recovery of hyperpigmentation with decreased possibility of side effects. The present communication is an attempt to address issues related to the treatment options of hyper pigmentary disorders using nature's treasures.*

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**Key words:** Hyperpigmentation, dermatology, depigmenting agent, botanical, melanogenesis

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## ANTIULCER POTENTIAL OF ANNONA RETICULATE LINN. IN EXPERIMENTAL ANIMAL.

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### ABSTRACT

*The present study has been undertaken to investigate the anti-ulcer activity of Annona reticulate leaves extract in rats. Rats are divided into 6 groups with 6 animals in each. In ethanol induced ulcer model, extract or reference or vehicle was administered to 24 hours fasted rats, after 30 min, 50% alcohol was administered. After one hour, rats were sacrificed and ulcer index and related parameters were determined. Annona reticulate (100, 200 and 400 mg/kg doses) and Omeprazole (20mg/kg) has shown significant decrease in ulcer index, acid volume and content and showed improvement in pH when compared with reference control. Therefore, with the help of ethanolic extract of leaves of Annona reticulate and anti-oxidant DPPH assay showed antiulcer activity and is a potent anti-ulcer agent.*

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**Key Words:-** Anti-ulcer, ethanol, omeprazole, DPPH assay, ulcer index.

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## PREPARATION AND EVALUATION OF ANTIPYRETIC TABLET FROM *ENICOSTEMMA AXILLARE*

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### ABSTRACT

The present study was carried out to evaluate the antipyretic, antimicrobial activity and also to screen the phytochemicals present in *Enicostemma axillare* powder. Herbal medicine has become an item of global importance both medicinal and economical. The herbal medicines has increased, their quality, safety and efficiency are serious concerns in industrialized and developing countries. The herbal medicines decreases the side effects of allopathic drugs. Disk diffusion method was used to study the antimicrobial activity against *Staphylococcus aureus*, *Escherichia coli*. The phytochemicals was screened by different chemical test. Chemical test confirms the presence of various phytochemicals like Alkaloids, Glycosides and Carbohydrates. In this study we concluded that the *Enicostemma axillare* tablet showed good antipyretic and antimicrobial activity, and it may be attributed due to the presence of phytochemicals it may be used as antipyretic agent. The present research has been undertaken with the aim to formulate and evaluate the herbal antipyretic tablet containing *Enicostemma axillare*. The tablet was formulated using Lactose, Starch, Sodium Chloride, Tartrazine and passes all the physicochemical parameters.

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**Keywords:** Antipyretic activity, Antimicrobial activity, *Enicostemma axillare*. herbal medicine, natural source

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## ECOFRIENDLY MOSQUITO REPELLENT: RECENT TREND IN ENVIRONMENTAL SCIENCES

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### ABSTRACT

Global Warming is the average rise in temperature of earth which is mainly attributed to the increasing phenomenon of green house effect. Global warming also leads to rise in Mosquitoes. Mosquitoes are responsible for life threatening diseases like Malaria, Dengue, Chikunguniya, yellow fever, filariasis, Japanese encephalitis etc which remains a major source of death world wide. Malaria is the most commonest and major parasitic infections of Public Health interest through out the globe. Thus the world wide threat of mosquito transmitted diseases demands the need for effective mosquito repellents. Mosquito repellents are important tools for prevention of dreadful diseases as well as uncomfortable painful bites. In recent years, concerns about the potential side effects or adverse health effects of uncontrolled use of synthetic or chemical mosquito repellents have increased. So Ecofriendly Mosquito Repellents is need of hour. Herbal or plant based alternative source of Mosquito repellent agent have gained much popularity, increased interest and recognition owing to easy availability and less environmental impact as these products are safe.

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**Key words :** Global Warming, Mosquitoes, Malaria, Ecofriendly Mosquito Repellents, Safe.

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## EMERGING ROLE OF NANOTECHNOLOGY IN THE TREATMENT OF DERMATOLOGICAL DISORDERS

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### ABSTRACT

The skin is the largest organ of the human body and performs several critical functions: It protects the body from the external environment, serving as both a first line of defence against the entry of chemicals and microorganisms as well as providing a barrier to the loss of fluids and salts and helps regulate body temperature. Being the most exposed part to the external environment, it is more prone to the ill-effects of radiation and ultraviolet rays. Any pathology involving the skin is a matter of cosmetic concern. Since the systemic treatment for dermatological problems comes with its potential adverse effects, topical application is the preferred mode due to higher patient compliance and satisfaction. It is anticipated that nanotechnology will be the fastest growing area for the maintenance of skin health, as well as for the diagnosis and management of cutaneous disease. Nanoparticles have great potential in topical drug delivery fields because of their increased surface area and ability to enhance the permeation of drugs into the skin. Researchers have explored the use of nanotechnology, specifically nanoparticles as drug delivery systems for topical applications. Use of phytocompound based nanoformulation adds additional advantage to this strategy as its safe and cost effective as well. Research team in our laboratory have recently demonstrated that phytocompounds extract from various plants (Aloe vera, Arachis hypogea, Oscimum sanctum, Glycyrriza glabra, Citrus sinensis, Nigella sativa, Withania somnifera, Ficus carica, Curcuma longa, Psoralea corilifolia, Berberis vulgaris etc.) have great potential regulate melanogenesis using various animal model. Therefore, it is implication of nanotechnology to synthesize phytocompound based nanoparticles for topical application, which will give new direction to ongoing pigment cell research. It will contribute to improving the quality of life of patients and advance the search for a truly effective treatment of dermatological disorders.

**Key words:** Nanotechnology, nanoparticles, dermatological disorders, phytocompounds.

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## SYNTHESIS AND APPLICATION OF SELECTED NANOPARTICLES FOR MANAGEMENT OF SOFT ROT OF ZINGIBER OFFICINALE (ROSCOE)

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### ABSTRACT

About 60% of Indian population depends solely on agriculture for their livelihood. Ginger is one of the important commercial spice crop cultivated in India and worldwide. But, many fungal pathogens like Fusarium and Pythium sp. are causing huge loss of yield every year. Traditionally, chemical fungicides like benzimidazole and dicarboximide are used in controlling ginger rhizome rot. These fungicides are hazardous to human health and environment. Nanotechnology plays an important role in controlling different plant pathogenic fungi. Nanotechnology is a field of science deals with synthesis and application of materials in the range of nanometers ie.  $10^9$  meter. Antifungal activity of biologically synthesized copper nanoparticles (CuNPs) by Phyllanthus emblica (amla) extract was studied against the fungal isolate obtained from infected ginger. CuNPs were characterized by UV-Visible spectrophotometry, Fourier Transform Infrared spectroscopy (FTIR), Zeta potential measurement and Nanoparticle Tracking Analysis (NTA). Nanobased fungicide against pathogenic fungi causing ginger soft rot could be formulated using biologically synthesized CuNPs.

**Keywords:** Nanotechnology, Copper Nanoparticles, Soft rot, Fusarium, Pythium

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**ASSESSMENT OF *IN VITRO* ANTACID ACTIVITY OF *FOENICULUM VULGARE*,  
*CORIANDRUM SATIVUM* AND *LEPTOSPERMUM SCOPARIUM* BY A MODIFIED  
ARTIFICIAL STOMACH MODEL**

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**ABSTRACT**

Some plants and fruits may consist of pharmaceutical ingredients suitable to treat certain diseases such as stomach acidity. Our aim was to verify the claim that extract of *Foeniculum vulgare*, *Coriandrum sativum* and *Leptospermum scoparium* can be used as an alternative for neutralizing stomach acidity. Therefore, for this purpose, the antacid activity of these aqueous extracts was evaluated by using artificial stomach model. This modified model of artificial stomach is useful for the determination of duration of consistent neutralization of the artificial gastric acid. The pH of these aqueous extracts and its neutralizing effect on artificial gastric acid was determined and compared with water and the active control sodium bicarbonate. The neutralization capacity *in vitro* was determined with the classical titration method. All treatments including that of aqueous extracts and sodium bicarbonate showed significant acid neutralizing effects when compared with water. The duration for consistent neutralization and antacid capacities of extract of *F. vulgare* ( $172 \pm 6$  min), *C. sativum* ( $154 \pm 5$  min) and *L. scoparium* ( $118 \pm 3.5$  min) were significantly higher than that of water ( $108 \pm 4$  min). The aqueous extract of *F. vulgare*, *C. sativum* and *L. scoparium* was consistently active in the artificial stomach model and possesses potent antacid effects.

**Key Words :** *Foeniculum vulgare*, *Coriandrum sativum*, *Leptospermum scoparium*, artificial stomach model, antacid activity,

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**DIVERSITY AND ENZYMATIC ACTIVITY OF ENDOPHYTIC  
MICROORGANISMS ISOLATED FROM AMLA (*EMBLICA OFFICINALIS*)**

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**ABSTRACT**

Endophytes are the microbe that includes Bacteria, Fungi and Actinomycetes that colonize in internal plants tissues devoid of any immediate over negative effects on host plants. Endophytes of medicinal plants are the unique source of bioactive compounds for Pharmaceutical, Leather, Detergents, Agriculture and textile importance. However their trait of producing the digestive enzymes has scarcely exploited. Hence, in the present investigation microbial endophytes were isolated from different plant parts of matured *Emblca officinalis* (L). All the Bacterial, Fungal and Actinomycetes endophytes were identified and further evaluate for Amylase, Protease and Lipase production. The enzyme activity of endophytic microorganism was determined by substrate digestion on solid medium adopting spot inoculation method. The study indicates that microbial endophytes viz. bacteria, fungi and actinomycetes existed in different plant parts of *Emblca officinalis* (L). The outcome of the study is also progressive for the ability of isolated endophytes to produce digestive enzymes, these indicates the possible opening to use isolated endophytes as production strain for human digestive enzymes production in an industry over hurting the plant resources.

**Keywords:** Endophytes, Extracellular Enzyme, Substrate digestion, *Emblca officinalis*.

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## A REVIEW ON ROLE OF NANOTECHNOLOGY BASED APPLICATIONS IN BIOTECHNOLOGY

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### ABSTRACT

Nanotechnology, has been developing as a pivotal area of science with multitude of applications in diverse fields ranging from Medicine, Biotechnology, Environmental science, Computer sciences, Chemical Sciences, Physical sciences, etc. At nanoscale, that is a natural or artificially constructed material at nanoscale dimensions, have fundamentally different physical, chemical, and biological properties which can be exploited for an extremely wide range of novel applications from astrophysics to genetic engineering and biotechnology. The advances in nanotechnology have enriched biological sciences by finding several new applications. The modern methods use nanomaterials for development of GMO foods, Microorganisms, plants and animals modified to carry novel genes, proteins or therapeutics by using nanoparticles as DNA-carriers. The nanoparticles have also been used as carriers for therapeutic drugs or molecules. The uses of microfluidic systems and sensors have been another aspect of nanotechnology based applications in biological sciences. Thus, the nanotechnology has provided a solid platform to various aspects of biological science and technology. In this review, nanoparticles types such as nanospheres, nanorods, nanoshells and nanocages, their synthesis, and their roles in biological sciences with particular emphasis on biotechnology are discussed.

**Key Words:** Nanotechnology, Nanoparticles, Biotechnology, Genetic Engineering, Biosensor

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## A REVIEW ON INDIAN FRESH WATER ZOOPLANKTON

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### ABSTRACT

Global human population growth rate increasing rapidly and has significant impact on natural resources. It reduces the natural water quality. Assessment of zooplankton gives valuable information about the management and restoration of aquatic ecosystem. Zooplanktons are minute aquatic creature that plays an important role in the aquatic food web by providing crucial source of food to a number of aquatic animals especially for fishes. Some of the zooplankton groups act as pollution indicator. Zooplankton communities are typically diverse and occur in almost all type of aquatic habitat. Zooplankton communities are highly sensitive to environmental variation, their growth and distribution is depends on some biotic and abiotic factors. As a result, change in their abundance, and species diversity or community composition, can provide important indications of environmental variation. The present review is an attempt to list out Indian freshwater zooplankton in a single platform.

**Keyword:** review, zooplankton, abundance, diversity, India

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**ISOLATION AND CHARACTERIZATION OF INDOLE ACETIC ACID (IAA) PRODUCING BACTERIA FROM RHIZOSPHERIC SOIL AND ITS EFFECT ON GROWTH OF COTTON PLANT.**

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**ABSTRACT**

*Auxins is one of the most important phytohormones enhances the root architecture, nutrient acquisition and plant growth. The present work deals with the isolation, screening, characterization and identification of Indole acetic acid (IAA) producing bacteria from the rhizospheric soil. Out of twelve IAA producing isolates four were selected as efficient producer (I1, I2, I3 and I4). Based on morphological and biochemical charectriztion these isolates were identified as Pseudomonas fluorescens (I1), Staphylococcus aureus(I2), Bacillus Subtilis(I3) and E.coli (I4) Optimization of IAA production was carried out at different cultural conditions of P<sup>H</sup> and temperature with varying media components such as carbon source, nitrogen source and tryptophan concentrations. Effect of all four isolates on cotton plants growth was studied by pot experiment. Result of pot assay indicate that all the isolates including consortium significantly increased the root and shoot weight as well as root and shoot length over the control. The study suggests that IAA producing bacteria used as efficient biofertilizers inoculants to promote plant growth.*

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**Keywords:** Auxins, Optimization, Tryptophan, Cotton.

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**DESIGN DEVELOPMENT AND PERFORMANCE EVALUATION OF POWER OPERATED GROUNDNUT DECORTICATOR**

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**ABSTRACT**

*Present work entitled "Design, development and performance evaluation of power operated groundnut decorticator." To design concave sieve of groundnut decorticator various physical parameters of groundnut pods and seeds were studied to design concave sieve. Overall dimension of main frame are 1400×320×820. Electric motor, Pulley and belts are use for power transmission. The performance evaluation of power operated groundnut decorticator was evaluated at different clearances between decorticating lever and concave sieve. Broken seed were 13.96% at 12 mm clearance and losses were 21.06% at 7 mm clearance Decorticating efficiencies were 97.78% at 12 mm clearance and 98.43% at 7 mm Clearance. Cleaning efficiency was 85.71% at 12 mm clearance and 78.93 at 7 mm clearance. Cleaning efficiency decreases with decreasing clearance. Input capacity was 45 kg/hr at 12mm clearance and 40 kg/hr at 7mm clearance. Output capacity was 28.75 kg/hr at 12 mm clearance and 25.44 kg/hr at 7 mm clearance. Input and output capacities were decreased with clearance. Seed recovery range was 79.07% at 12mm clearance and 73.29% at 7 mm clearance. Seed recovery range was decreased with clearance. Capacity utilization was 63.88% at 12mm clearance and 63.60% at 7 mm clearance.*

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**Keywords:** Decortication, clearance, broken seed, capacity, seed recovery range etc.

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**TAXONOMIC STUDY OF FRESHWATER MOLLUSCS ALONG THE SELECTED SITES OF GODAVARI RIVER OF WESTERN MAHARASHTRA, INDIA**

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**ABSTRACT**

*'Godavari River' originates at 'Triambakeshwar' in Nasik & empties in Bay of Bengal. It is about 1,450 Km (900 miles) long. The Godavari River is a major waterway in India, next to Ganges and Indus rivers. The river traverses a distance of 694 km through Maharashtra. Freshwater ecosystems are among the highest used, depended upon and exploited by humans for sustainability and well-being. The dependence on water and other resources in this environment has placed enormous pressures on the ecosystem worldwide resulting in direct impacts to species diversity and populations. While ecosystem assessments are broad based, the actual impacts of change can be understood from the status of species in those ecosystems. The freshwater ecosystem supports various orders of animals, plants and fungi, contributing to a quarter of vertebrate diversity and almost as much of invertebrate diversity described to date. Freshwater molluscs are essential to the maintenance of wetland ecosystems, primarily due to their control of water quality and nutrient balance through filter-feeding, algal-grazing and, to a lesser degree, as a food source for predators including a number of fish species, and in some parts of the world they compose a significant food resource, especially for the rural poor. In the current investigation following native freshwater molluscs were found, which include ten gastropod species and four Pelecypod (Bivalve) species were identified which are, Gastropods: 1) Bellama bengalensis 2) Bellama dissimilis 3) Thiara scabra 4) Melanoides tuberculata 5) Terebia lineata 6) Terebia granifera 7) Lymnaea acuminata 8) Lymnaea luteola 9) Physa acuta and 10) Endoplanorbis exustus. Bivalves: 1) Lamellidens corrianus 2) Laellidens marginalis 3) Pareysia corrugata and 4) Corbicula striatella.*

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**Key words:** Godavari river, freshwater molluscs

## COMPARATIVE STUDIES ON SUSCEPTIBILITY AND OCCLUSION BODY YIELD OF BOMBYX MORI NUCLEOPOLYHEDROVIRUS (BMNPV) IN TWO CELL LINES

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### ABSTRACT

Availability of highly susceptible insect cell lines is a major bottleneck in study of baculovirus replication and production of recombinant viruses. The present study compares susceptibilities of two cell lines viz. DZNU-Bm-1 and NIAS-MB-19 to *Bombyx mori* nucleopolyhedrovirus (BmNPV). At early stages of infection, hypertrophy of nuclei, cell aggregation and adherence of cells to the bottom of the culture flask were observed in Bm-1. MB-19 cells showed hypertrophy of nuclei. Mature OBs were seen in the nuclei of infected cells of Bm-1 by 66 h.p.i. while in MB-19 cells mature OBs were observed after 78 h.p.i. At passage 1 of BmNPV, the infection rate was slightly higher in Bm-1 cells. Bm-1 cells exhibited a yield of 23 OBs/cell while MB-19 cells showed a yield of 13 OBs/cell. In view of better figures of percentage infection and yield of OBs/cell, Bm-1 appears to be more suited for production of recombinant BmNPV as well as production of proteins of human interest than MB-19 cell line.

**Keywords:** *Bombyx mori*, BmNPV infection, DZNU-Bm-1, susceptibility

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## STUDY ON AVIFAUNA ASSOCIATED WITH PALASH (*BUTEA MONOSPERMA*), AMRAVATI DISTRICT IN MAHARASHTRA

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### ABSTRACT

*Butea monosperma* is a native of Indian subcontinent and Southeast Asia, which is widely distributed throughout India, Burma, Myanmar, Thailand, Malaysia, Indonesia and Ceylon. It is a tree of tropical and sub-tropical climate. Found moderate sized deciduous tree and grows on the wide variety of soils, popularly known as 'Dhak' or 'Palash' in India, commonly known as 'Flame of forest'. Acquiring many qualities it is rightly selected as the State Flower of Uttar Pradesh as well as Jharkhand. The study was undertaken during January 2017- February 2018 in Amravati District of Maharashtra state in India. For this study 10 sites were selected in Amravati area including Melghat. Observations were done from 7:00 am to 10:00 am and 4:00 pm to 6 pm. Direct observations were made by using Nikon 10x50 mm Binocular. The study was supported with photographs taken by D 90 Nikon DSLR Camera and Nikon 80-400 mm Zoom lens. Coordinates of study sites were recorded by Garmin GPS 60. Observations indicated that the bird species were attracted towards the flowers of *Butea monosperma* for the purpose of nectar and insects. The birds were used this plant species for nesting and roosting also. A total of 91 avian species belonging to 36 families were found associated with *Butea monosperma* either for feeding, roosting and nesting. The maximum species (13) belonged to family Muscicapidae followed by Corvidae (11), Sylviidae (9), Accipitridae (8), Cuculidae (7), Columbidae (6), Sturnidae (5) and Passeridae (4). It was concluded that the flowers of *Butea monosperma* serves as a food for the local as well as migratory forest avifauna and tree is used by birds for roosting and nesting purpose. It is ecologically important plant species because of its dry resistant feature and also helps in controlling soil erosion. Therefore, it is very useful plant species ecological point of view and Avifauna diversity concerned.

**Keywords:** Avifauna, Palash, *Butea monosperma*, Amravati District, Melghat, Maharashtra

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**TAXONOMIC OBSERVATION OF CESTODE GENUS *POLYONCHOBOTHRUM HAMMERATA* FROM FRESH WATER FISH *CHANNA MARULIUS* IN WAN RIVER AND IT'S TRIBUTORIES (M.S) INDIA**

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**ABSTRACT**

The present investigation deals with the systematic observation of pseudophyllidean tapeworm *Polygonchobothrium hammerata* Sp.nov. from freshwater fish *Channa marulius* (F.Hamilton,1822) at Wari (Hanuman) Tehsil Telhara Dist Akola (M.S.) India. The worm come closer to all species of genus Senga in general topography of organs but differs due to the remarkable scolex, the scolex hammer shaped. Rostellum with rostellar hooks. The testes are small, circular in structure, 29-32 in number, arranged in circular manner from apical disc. The cirrus thin present in cirrus pouch. The vas deferens is medium. The vagina and cirrus pouch both open common in opening known as genital pore, which is small, oval in shape. The vagina is a thin tube, starting from the genital pore. The ovary is large, bilobed. The vitellaria are follicular, Gravid proglottids are four to five times broader than long. Uterus Sac having eggs. Eggs oval, non-operculated. Uterine pore oval.

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**Keywords:** *Channa marulius*

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**BIRDS ASSOCIATED WITH RED SILK-COTTON PLANT (*Bombax ceiba* Linn), AMRAVATI DISTRICT IN MAHARASHTRA**

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**ABSTRACT**

*Bombax ceiba* Linn is a beautiful plant species. *B. ceiba* Linn. is a native of Indian subcontinent and Southeast Asia. It is commonly known as Red silk-cotton, Semal or Katesawar in India. *B. ceiba* Linn. belonging to the family Bombacaceae is a large, deciduous tree growing wild on the roadsides, forest and bunds of agricultural land. It flowers from January to March. The flowers are large, sturdy, red colored, numerous, fascicled near branch-ends. Flowers start opening after midnight and remain till the morning. Being ornithophilous, the flowers are adapted by the presence of hard flower-wall, stiff filaments, well-protected ovary, abundant nectar, good capillary system bringing nectar up or preventing its flowing out of a deep tube and absence of odor. The study was undertaken during February 2017- February 2018 in Amravati District of Maharashtra state including Melghat. For this study five sites were selected in Amravati area. Observations were done from 7:00 am to 10:00 am and 4:00 pm to 6 pm. Direct observations were made by using Nikon 10x50 mm Binocular. The study was supported with photographs taken by D 90 Nikon DSLR Camera and Nikon 80-400 mm Zoom lens. Coordinates of study sites were recorded by Garmin GPS 60. Observations showed that the bird species were attracted towards the flowers of *B. ceiba* Linn for the purpose of nectar and insects. The birds were also used this plant species for nesting and roosting. A total of 75 bird species belonging to 26 families were associated with *B. ceiba* Linn either for feeding, roosting and nesting. The maximum species (11) belonged to family Corvidae followed by Sylviidae (09), Muscicapidae (8), Accipitridae (7), Cuculidae (6), Columbidae (5), Sturnidae (5) and Passiridae (4). It was observed that the flowers of *B. ceiba* Linn serves as a food for the local as well as migratory bird community and also large tree and its branches used by birds for roosting and nesting purpose. From the other side, birds playing important role in pollination of this plant species. Therefore, *B. ceiba* Linn plant species showed strong association with Avifauna.

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**Keywords-** Birds, Flower, *Bombax ceiba* Linn., Melghat, Amravati District, Maharashtra

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**BIOCHEMICAL RESPONSE OF FRESHWATER TELEOST FISH *CHANNA PUNCTATUS* (CHANNIDAE: PERCIFORMES) DURING ACUTE EXPOSURE TO PARAQUAT DICHLORIDE.**

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**ABSTRACT**

The quality of the water is altered due to constant flow of agriculture effluents in water bodies making it unfit for aquatic life particularly to the fishes. In order to determine the effect of herbicides on environment, Paraquat dichloride (1, 1'-Dimethyl-4, 4'-bipyridinium dichloride) belonging to family of redox-active heterocycles was used to assess the toxicity on edible fish *Channa punctatus* (Family: Channidae, Order: Perciformes), as fishes can serve as bio indicators of environmental pollution. Renewal acute toxicity test was performed on *Channa punctatus* to calculate LC<sub>50</sub> of paraquat dichloride by Finney's Probit Analysis (1971). LC<sub>50</sub> values determined were 93.36, 82.22, 67.93 and 65.87 mg/L for 24, 48, 72 and 96 hours respectively using wide range exposure of paraquat dichloride concentrations (30, 60, 90, 120, 150 mg/L). The present work aimed to determine the effect of acute toxicity of commercial formulation paraquat dichloride 32.93 mg/L (LC<sub>50/20</sub> of 96 hrs) on biochemical parameters of *Channa punctatus* (Bloch) after every 24hrs interval upto 96hrs. Lipid profile get altered in experimental groups with significant ( $P < 0.05$ ) elevation in serum total lipids, phospholipids, low density lipoproteins (LDL), total cholesterol but significant ( $P < 0.05$ ) decline in Triglycerides, high density lipoprotein (HDL), very low density lipoprotein (VLDL) than the reference groups. These parameters suggest that fish became hyperlipidemic and hypercholesterolemic. Increase in level of phospholipids suggests the changes/damage role of herbicide on cell membrane. In conclusion, acute exposure to paraquat dichloride induced biochemical alterations in *Channa punctatus*, making fish weak and vulnerable to diseases. Alterations in serum parameters provides nonspecific biomarkers in herbicide contamination of aquatic ecosystem and offers a simple tool to elevate toxicity derived alterations.

**Keywords:** Paraquat dichloride, *Channa punctatus*, Acute toxicity, Acute concentration, lipid profile

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**STUDY OF SEED PROTEIN PROFILING IN KASHMIRI COMMON BEAN CULTIVARS**

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**ABSTRACT**

The present study was undertaken to evaluate the genetic diversity among common bean cultivars from Kashmir on the basis of seed storage proteins as these are rich in proteins. Eight cultivars i.e. Brown Bean (B1), Surbhi (B2), Contender (B3), Beans French Yellow (B4), Kentucky Wonder (B5), Laffa (B6), Early Master Beans (B7) and Painted Lady (B8) of Common beans were characterized using SDS-PAGE. The cultivars showed differences in the banding pattern and staining intensities. The highest number of bands i.e. 7 (seven) were observed in Brown Beans (B1) and lowest number of protein bands, i.e. 3 (three) in Beans French Yellow (B4) and Kentucky Wonder (B5). The regions were divided as per band intensity. The genetic diversity observed among the cultivars could help in breeding programmes in near future.

**Keywords:** - Morphological characters, *Phaseolus vulgaris*. L., Seed Proteins (SDS-PAGE).

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**PREPARATION AND EVALUATION OF ANTIPYRETIC TABLET FROM  
ENICOSTEMMA AXILLARE**

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**ABSTRACT**

The present study was carried out to evaluate the antipyretic, antimicrobial activity and also to screen the phytochemicals present in *Enicostemma axillare* powder. Herbal medicine has become an item of global importance both medicinal and economical. The herbal medicines has increased, their quality, safety and efficiency are serious concerns in industrialized and developing countries. The herbal medicines decreases the side effects of allopathic drugs. Disk diffusion method was used to study the antimicrobial activity against *staphylococcus aureus*, *Escherichia coli*. The phytochemicals was screened by different chemical test. Chemical test confirms the presence of various phytochemicals like Alkaloids, Glycosides and Carbohydrates. In this study we concluded that the *Enicostemma axillare* tablet showed good antipyretic and antimicrobial activity, and it may be attributed due to the presence of phytochemicals it may be used as antipyretic agent. The present research has been undertaken with the aim to formulate and evaluate the herbal antipyretic tablet containing *Enicostemma axillare*. The tablet was formulated using Lactose, Starch, Sodium Chloride, Tartrazine and passes all the physicochemical parameters.

**Keywords:** Antipyretic activity, Antimicrobial activity, *Enicostemma axillare*. herbal medicine, natural source

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**ANTICLASTOGENIC ACTIVITY OF FLAVONOID RICH EXTRACT OF CASSIA  
AURICULATA LINN. ON EXPERIMENTAL ANIMAL .**

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**ABSTRACT**

In the present investigation, four groups of six Swiss albino mice in each group were used. Excepting for the first group all the remaining groups were treated with CP (50 mg/kg). Mice of third and fourth group were treated with ethyl acetate extract of *C. auriculata* Linn. at 100 mg/kg and 200 mg/kg with CP. Metaphase of bone marrow cells of all animals were analyzed for qualitative and quantitative chromosomal aberrations. Break, fragment, deletion, Polyploidy, pulverized, ring and total aberration were observed. Flavonoids rich extracts of root of *C. auriculata* Linn. provided significant protection ( $P < 0.05$ ) against CP induced chromosomal aberration. Total chromosomal aberration was found to be 12.16 and 7.33% in 100 and 200 mg/kg of extract treated animals respectively. From the present study it can be observed that ethyl acetate extract of *C. auriculata* Linn possess significant anti-mutagenic potential against CP induced chromosomal aberration.

**Keywords:** Bone marrow cells, *Cassia auriculata* Linn., cyclophosphamide

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**ANTIULCER POTENTIAL OF ANNONA RETICULATE LINN. IN EXPERIMENTAL ANIMAL.**

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**ABSTRACT**

*The present study has been undertaken to investigate the anti-ulcer activity of Annona reticulate leaves extract in rats. Rats are divided into 6 groups with 6 animals in each. In ethanol induced ulcer model, extract or reference or vehicle was administered to 24 hours fasted rats, after 30 min, 50% alcohol was administered. After one hour, rats were sacrificed and ulcer index and related parameters were determined. Annona reticulate (100, 200 and 400 mg/kg doses) and Omeprazole (20mg/kg) has shown significant decrease in ulcer index, acid volume and content and showed improvement in pH when compared with reference control. Therefore, with the help of ethanolic extract of leaves of Annona reticulate and anti-oxidant DPPH assay showed antiulcer activity and is a potent anti-ulcer agent.*

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**Key Words:-** Anti-ulcer, ethanol, omeprazole, DPPH assay, ulcer index.

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**“INVESTIGATION, FORMULATION AND EVALUATION OF ANTIDIABETIC  
TABLET OF PUNICAGRANATUM PEEL”**

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**ABSTRACT**

*The present study was aimed to formulate & evaluate the antidiabetic potential of Punicagranatum peels waste. Hyperglycaemia is the most common metabolic endocrine disorder. It is the chronic condition in which blood glucose level is elevated than normal due to the improper insulin production in body or due to insulin resistance, high blood glucose level and low blood glucose level leads to diabetic condition. Allopathic treatment for diabetes mellitus is too costly so focus on herbal medicines is necessary. Pomegranate peels or rind are considered as a waste material these peels consist of numerous important active chemical constituents such as flavonoids, vitamins and minerals. The main principle active chemical constituents including punicalagin, punicalin, Beta-cetosterol and valoneic acid dilactone (VDA) from pomegranate peels powder shows potent antidiabetic activity in alpha-amylase and aldose reductase. Punicagranatum peels extract have stability problem than other dosage form by converting it into tablet dosage form. We enhance their acceptability, elegance and patient compliance. Manufacturing of tablets done on the basis of optimized batch obtained from preformulation study on lab level tablet press (CEMACH) by wet granulation method. Evaluations tests performed on tablets such as Hardness, Weight variation, friability, disintegration test etc, and for animal testing.*

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**Keywords:** punicagranatum, antidiabetic, valoneic acid dilactone (VDA), Punicalin, Punicalagin, herbal medicine

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## EVALUATION AND STABILITY OF VITAMINS IN PASSION FRUIT JUICE

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### ABSTRACT

*Vitamins are we known group of compounds that are essential for human health these vitamins play specific and vital functions in metabolism, and their lack or excess can cause health problem. The food that contain the necessary vitamins may loosed during cooking. Therefore, many people required multivitamin supplements in the form of tablets or consume milk or other vitamin-fortified beverages to supplement their diet.*

*The Passion fruit is the fruit of number of plants in the Passiflora family. It is valued for its pronounced flavour and aroma which helps not only in producing a high quality squash but also in flavouring product. It is an intriguing and mysterious fruit that has a surprising number of health and medicinal benefits .It's juice contain several vitamins, flavonoids, antioxidants, iron, copper, fiber, and protein. The percentage of many of the vitamins is shockingly high and the amount of vitamins and minerals should be currently evaluated by different analytical method.*

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**Key words:-** Passion fruit, HPLC, UV-Spectroscopy, Vitamins, Evaluation

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## FORMULATION AND DEVELOPMENT FAST DISINTEGRATING ORAL FILM

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### ABSTRACT

*The fast dissolving drug delivery system is advancement for innovative formulation and development. As per literature review formulation of fast disintegration and strip with film forming agent as HPMC. To impart the disintegration parameter to the film by using synthetic and natural superdisintegrates i.e. pvp k30 (synthetic) and fenugreek as a natural superdisintegrants and active as paracetamol drug evaluate separately. As per results it is concluded that the used solvent casting method formulation with synthetic superdisintegrants shows satisfactory results while natural and combination of both showing moderate characteristics.*

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**Key words:** paracetamol, super disintegrants, fast dissolving oral film, solvent casting method.

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**FtsZ PROTEIN:A NOVEL DRUG TARGET IN THE EraOF EMARGENCE  
OF MULTI-DRUG RESISTANCE**

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**ABSTRACT**

*FtsZ is a prokaryotic cytoskeleton protein, polymerizes to form Z-ring assembly which play crucial role in bacterial cell division, assemble at the center of cell into Dynamic Z-ring and facilitates bacterial cytokinesis. Several protein are recruited By FtsZ to the Z-ring to form the complex which play important role in the membrane constriction, septum formation and cell division. Previous studies have shown that the perturbation of FtsZ function by natural compound and chemical agent leads to inhibition of bacterial proliferation. Curcumin, a naturally occurring polyphenolic compound is extracted from the root of curcuma longa L..it has been used as important dietary component for the long time. Recently, it has been found that curcumin bind to tubulin and inhibits microtubule polymerization. Since FtsZ is prokaryotic homologs of tubulin, the effect of curcumin on the assembly dynamics of FtsZ is attractive antibacterial drug target with effective use in MDR bacterial treatment and cancer research*

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**Key words;**-FtsZ,Z-ring,bacterial proliferation,curcumin,tubulin,microtubule,MDR,cancer

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**SYNTHESIS OF METAL COMPLEX OF AMMONIUM P-TOTYL  
DITHIOCARBAMATE AND ITS BIOLOGICAL ACTIVITY**

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**ABSTRACT**

*The synthesis of sulphur and nitrogen containing dithiocarbamate ligand derived from diisobutylamine as well as its coordination compounds with 3d series transition metals is presented. These synthesized compounds were characterized on the basis of elemental analysis, conductometric measurements and IR spectral studies. The analytical data showed the stoichiometry 1:2 and 1:3 for the compounds of the types  $ML_2$  { $M=Mn(II), Co(II), Ni(II), Cu(II)$  and  $Zn(II)$ } and  $M'L_3$ { $M'=Cr(III)$  and  $Fe(III)$ } respectively. The conductometric measurements proved the non-electrolytic behaviour of all the compounds. The bidentate nature of dithiocarbamate moiety was confirmed on the basis of IR spectral data.*

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**Keywords:** Coordination complexes, Dithiocarbamates, Transition metals

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## MICROWAVE ASSISTED SYNTHESIS AND CHARACTERIZATION OF 6-DIHYDRO-2, 4- DI(SUBSTITUTEDPHENYL)-PYRIMID-5-ONE DERIVETIVES.

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### ABSTRACT

Microwave irradiation for the synthesis of heterocyclic compounds is rapid, economic, convenient and ecofriendly method for chemical synthesis. Pollution free synthesis, lesser reaction time, easy work up and minimum use of solvent are the major advantages of this technique. Microwave radiation facilitated the polarization of molecule under irradiation causing rapid reaction to occur. In this attempt a novel synthesis of di(substitutedphenyl)-pyrimid-5-one(I<sub>a</sub>-I<sub>j</sub>) have been carried out from condensation of substituted amide(0.01M), aromatic aldehyde (0.015M) and amino acid(0.01M) in presence of metal salt as a catalyst. The reaction mixture was irradiated under scientific microwave oven for 1-2 minutes. The synthesized compounds were characterized by elemental analysis and IR, NMR, CMR, UV and Mass spectrum. Melting point are uncorrected and carried out on Thieles apparatus.

**Keywords:-**condensation, Pyrimidine, microwave irradiation.

## BATCH ADSORPTION STUDIES ON REMOVAL OF DYE USING AGRO-WASTE

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### ABSTRACT

Purification of industrial waste water polluted by anionic dye was carried by adsorption process. Anionic dye (i.e. Acid Yellow 24) from waste water can be effectively taken out by Madhuca Longifolia Seeds Hull (MLSH) as adsorbent in the sorption technique. MLSH is a low cost and easily available agricultural waste in our ambience. Batch equilibrium method was followed to study the effects of some physico-chemical experimental conditions such as pH, agitation time and adsorbent dose. Equilibrium adsorption isotherm was also studied and found to be suitable with Freundlich isotherm. Kinetic parameters were in conformity with pseudo-second order. The present research projects towards applicability of MLSH in designing low cost adsorbent and for treating effluent water in industries or other adsorption processes. The observations and findings were interpreted at laboratory scale.

**Key words:** Adsorption, Acid Yellow, Madhuca Longifolia, Agricultural wastes, Freundlich isotherm, Effluent

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**EVALUATION OF SPEED OF SOUND AND ITS ACOUSTICAL PARAMETERS IN LIQUID MIXTURES CONTAINING MAGNESIUM SALICYLATE TETRAHYDRATE AND WATER AT VARIOUS TEMPERATURES**

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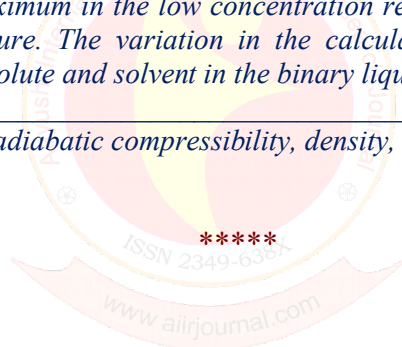
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**ABSTRACT**

*The propagation behavior of ultrasonic waves in solids and liquid systems is now well established as an effective tool for studying certain physical properties of materials. The nature of molecular interactions in terms of physical parameters can be well understood from the data obtained by ultrasonic wave propagation parameters such as ultrasonic velocity, adiabatic compressibility, free length, relative association etc. Ultrasonic technique is sensitive technique which is reported as complementary to other techniques like IR, NMR, UV Spectroscopy etc. Owing to the importance of molecular interactions with variation in concentration of one component of medium, the measurement of ultrasonic velocity, density and viscosity has been carried out for liquid mixtures of magnesium salicylate tetrahydrate in water. Present investigation has been undertaken to study the nature of interactions between magnesium salicylate tetrahydrate with water at 298.15K, 303.15K and 308.15K temperatures and 0.1M, 0.01M and 0.001M concentration. Ultrasonic velocity values show maxima and minima with respect to concentration in the mixture. The origin of maximum in the low concentration region is due to long-range order giving rise to hydrogen bonded structure. The variation in the calculated acoustic parameters shows some molecular interactions between solute and solvent in the binary liquid mixture.*

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**Keywords** – Ultrasonic velocity, adiabatic compressibility, density, molecular interactions.



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## ASSESSMENT OF MACRO AND MICRONUTRIENTS IN SOILS FROM SHEGAON AREA, BULDANA DISTRICT, MAHARASHTRA, INDIA

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### ABSTRACT

*This study has focused on the investigation of macro- and micronutrients in soils from Shegaon area of Buldana District in Maharashtra. The soil samples collected from New College Campus Area Shegaon (Buldana district) in November 2017. Ten representative locations were selected for the study and the analytical results were expected to be representative of the entire field. The different physical parameters and macro elements were analyzed in laboratory are pH, EC, C<sub>org</sub>, P and K. The micro elements such as Cu, Zn, Fe, Mn were estimated by Atomic Absorption Spectroscopy while calcium and magnesium, carbonate, bicarbonate, chloride were estimated volumetrically.*

*Soil is a medium through which crops grow to perform the need of human for food and cloths. Agriculture refers to an art of hoist plants from the soils and is one of the most economical factors for human beings. In achieving better crop yield the farmers should be made aware about the status of soil constituents, chemistry of water available, nutrient supply to the crop, climatic conditions etc. The observed values of microelements found to be the order of the Zn < Cu < Mn < Fe. Soil samples of the study area are found in rich in copper, manganese and iron while zinc is within range of normal soil. In this study soils show low pH values (< 7) indicating their acidic nature which can be counteracted by adding basic fertilizers. The study indicates that in all the soil samples natural manure and organic fertilizers are the best alternatives to augment C<sub>org</sub> and micro-organism which will help increasing the productivity of seasonable crops.*

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**Keywords:** *Macronutrients, Micronutrients, Shegaon, Physico-chemical analysis, New Campus soil.*

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## REVIEW: A MEDICINAL HERB ZIZYPHUS XYLOPYRUS (RETZ) WILLD.

**A. P. RAJPUT and N. A. MAHAJAN.**

\*Dr.A. P. Rajput:- Ex. Principal and H.O.D.Department of chemistry A C S College Bodwad

\*Mr. Nilesh Ashok Mahajan:- Department of chemistry A C S College Bodwad.

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### ABSTRACT

*Ayurveda is the system of traditional medicine. The origin of Ayurveda is found in Upveda and Atharvaveda. Ayurveda is the traditional way to cure diseases without any side effect. In western countries people are beware of side effect of synthetic drugs. Traditional medicine plays an important role in our daily life. Zizyphus species have lots of medicinal importance. Zizyphus xylopyrus is one of the species of Zizyphus genus have medicinal importance, like antidiarrhoeal, antidepressant, potentsedative, in treatment of liver problems weakness etc. Phytochemical study of this plant showed the presence of alkaloids, glycosides, carbohydrates, steroids and sterol, tannins, proteins and amino acid, triterpenoids, and flavonoids. The present review is the way to know the phytochemistry and traditional uses of the species Zizyphus xylopyrus.*

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**Keywords:** *Zizyphus Xylopyrus.*

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**SYNTHESIS AND SPECTROSCOPIC CHARACTERISATION OF NICKEL-(HYDROXYIMINO) (2-PHENYL) (1, 2, 3, 4- TETRAHYDROQUINAZOLIN-2-YL) METHANE COMPLEX**

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**ABSTRACT**

*A new Ni(II) coordination complex has been synthesized from (hydroxyimino) (1, 2, 2-Phenyl) (1, 2, 3, 4-Tetrahydroquinazolin-2-yl) methane ligand. The ligand was synthesized by condensation of 2-(hydroxyimino)-1-phenylethan-1-one with 2-aminobenzylamine. The ligand was characterized by mass spectroscopy, FTIR, <sup>1</sup>H and <sup>13</sup>C NMR spectroscopic techniques. The ligand is reacted with Nickel Chloride to produce Ni-complex, [NiL(HL)].H<sub>2</sub>O. The complex [NiL(HL)].H<sub>2</sub>O was elucidated on the basis of elemental analysis, FT-IR-H<sup>1</sup>, mass spectra, NMR spectroscopy and TEM. The analytical data of Ni(II) complex is found to be consistent with 1 : 2 (metal : ligand) stoichiometry. The IR spectral data shows that ligand acts as tridentate chelating ligand. On the basis of IR, and other spectroscopic studies, an octahedral geometry as been assigned to Ni(II) complex.*

*Keywords:* 1, 2, 3, 4 – Tetrahydroquinazolin-2-yl-2-amino-benzylamine, Nickel chloride

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**PHYTOCHEMICAL ANALYSIS AND ANTIOXIDANT PROPERTY OF LEAF EXTRACT OF CITRUS (CITRUS LIMON)**

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**ABSTRACT**

*Since ancient time people are exploring the plant species in search of new drugs. In India it is estimated that 80% of population depends on plants for therapy. Medicinal plants have been of age long remedies for human diseases because they contain components of therapeutic value. Plants have been associated with human health from time and they are important sources of medicines. In spite of tremendous development in the field of allopathic medicines during the 20<sup>th</sup> century plants still remain one of the major sources of drugs in modern as well as traditional systems. There are several medicinal plants in the world which are used in the prevention and treatment of several diseases. The medicinal plants are rich source of secondary metabolites like alkaloids, steroids, and flavonoids which are potential source of drugs. Lemon is the member of family Rutaceae. The health benefits of citrus leaves have mainly been attributed to the presence of bioactive compounds, vitamin C and carotenoids. The presence of phytochemicals like flavonoids in the leaves of medicinal plant indicates its medicinal action encountered in therapeutic use. Lemon leaves are rich in vitamin C which boost the immune system. phytochemicals are certain non nutritive plant chemicals which have some disease preventive properties. They offer protection against pathogens. It can act as antioxidant and protect cells against damage. The present study gives detail phytochemical analysis of citrus leaves (Citrus limon). Phytochemicals analysis have shown the presence of compounds like alkaloids, Flavanoids, Saponins and steroids. It also shows the presence of carbohydrate content, cellulose, etc. The results show that citrus limon extracts contain plenty of phytochemicals with antioxidant property.*

*Keywords :* Citrus limon, Antioxidant, medicinal plant, Phytochemical analysis, allopathic medicines.

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## Synthesis of Ionic Liquid knotted polymer supported metallo-phthalocyanine as photo-catalyst under solar radiation for degradation of methylene blue dye

V. B Khajone, S.Datir, K. R. Balinge, P.R.Bhagat\*

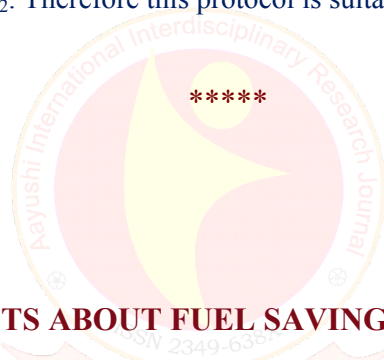
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### ABSTRACT

Phthalocyanins are good photosensitizers due to intensive color which make them suitable in oxidation and reduction beside to their applications in pigments. In this study, Metal phthalocyanine was synthesized and immobilized on polymer support. The catalyst was characterized by DTA-TGA analysis, infrared spectroscopy (FTIR). The photocatalytic activity of the Metal-Pc catalyst was assessed on the degradation of the methylene blue (MB) under sunlight. The concentration of dye was measured by using spectrophotometer at 665 nm during the reaction. MB pollutant was completely degraded under sunlight and the highest degradation rate was observed in 120 min.

Herein, we have reported the synthesis of ionic liquid knotted polymer supported metallo-phthalocyanine by a simple one-pot synthesis. The effect of loading of  $\text{TiO}_2$ , Metal-PC, duration and concentration of  $\text{H}_2\text{O}_2$  were determined in normal sunlight. Among them, it was observed that the photoactivity of 20 mg Metal-PC was sufficient toward the degradation of methylene under sunlight in absence of any photosensitizer like  $\text{TiO}_2$  and  $\text{H}_2\text{O}_2$ . Therefore this protocol is suitable for the degradation of pollutant from the water.



### FACTS ABOUT FUEL SAVING DEVICE

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### ABSTRACT

Now-a-days due to increase in the fuel prices and awareness about the pollution, common people are in search of solution that how to save the money on fuel. To take the advantage of this, this tendency, some company producing and marketing devices for IC engine with claim that adoption of such device will increase the fuel efficiency, mileage and able to reduce the pollutant from vehicle exhaust. One device available in the market is checked in the laboratory for such claim and verified for suitability to given fuel in IC engine.

**Keywords:** IC engine, gasoline, diesel, pollutant from vehicle, fuel saving device.

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**“SYNTHESIS AND CHARACTERIZATION OF PYRAZOLE AND ISOXAZOLE  
DERIVATIVES FROM SUBSTITUTED ANILINE”**

**A. P. Thakare, N. R. Thakare, P. R. Padole & N. H. Bansod**

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**ABSTRACT**

*In present article substituted aniline is treated with acetoacetic acid to obtained 3-(2-4-substituted-phenylhydrazono)pentane-2,4-dione which further reacted with two different nuceophile. In first stage it is reacted with 2,4-dinitrophenyl hydrazine to give 1-(2,4-dinitrophenyl)-3,5-dimethyl-4-(phenyldiazenyl)-1H-pyrazole and in second stage reacted with hydroxylamine hydrochloride to produce 3,5-dimethyl-4-(phenyldiazenyl)isoxazole. All the compounds were characterized by using IR, <sup>1</sup>H-NMR, mass spectral data and elemental analysis. The data obtained by different spectroscopic techniques matches with the structure of synthesized compounds.*

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**AN ANTIMICROBIAL EVALUATION OF SOME NEWLY SYNTHESIZED  
DIALDEHYDES**

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**ABSTRACT**

*Recently, WHO published the list of antibiotic resistant bacteria for which new antibiotics are needed. So the world urgently needs to develop the novel antibacterial and antifungal drugs with more effectiveness. Thus the research work was carried out with an objective to investigate the antibacterial and antifungal potentials of Dialdehydes.*

*Carbonyl compounds are versatile precursors in organic synthesis which can transformed into acetylene, Schiff bases, amides, amines, alcohols, acids, lactams, chalcones, dihydropyrimidinones etc. So new di-aldehyded were prepared by following reported procedure, the coupling reaction of corresponding hydroxy substituted aryl aldehydes with aliphatic dibromo compounds under reflux condition. Some of the synthesized dialdehydes were evaluated for their in vitro antimicrobial activity. Three Gram positive, two Gram negative bacterial strains and one fungal strain were tested at concentration 25, 50 and 100 µg/mL by Kirby Bauer Disc diffusion method. Comparison was made against standard drugs Chloramphenicol, Ciprofloxacin an antibacterial and Nystatin as an antifungal. Some of the compounds showed promising antibacterial activity and good antifungal activity against C. albicans.*

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**Keywords:** Dialdehydes, Antibacterial, antifungal.

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## TO FORMULATE & EVALUATE SUSTAINED RELEASE TABLET OF NIFEDIPINE

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### ABSTRACT

*The purpose of this research was to develop and evaluate different preparations of sustained delivery systems, using HPMC K4M HPMC K15M as carriers, in the form of matrices with Nifedipine. Matrix tablet were prepared by HPMC K4M barrier layer on the core containing the drug. The finding of the study indicated that all system demonstrated sustained release. The properties of polymer used and the structure of each formulation appear to considerably affect drug release and its release rate. The geometrical characteristics/ structure of the tablet as well as the weight/thickness of the barriers-layers considerably influence the rate of the drug release and the release mechanisms. Kinetic analysis of the data indicated that drug release from matrices was mainly attributed to Fickian diffusion, exhibited either anomalous diffusion or erosion/relaxation mechanisms. The advantage of Nifedipine formulations is that a range of release profiles can easily be obtained through variations in tablet structure and thus HPMC K4M HPMC K15M are appropriate carriers of oral sustained drug delivery system for soluble drugs such as the Nifedipine.*

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**Keywords:-** Sustained, Matrix, Nifedipine, Fickian diffusion

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## NOVEL BIOSYNTHESIS OF SILVER NANOPARTICLES FOR CATALYTIC OXIDATION OF P-CRESOL

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### ABSTRACT

*In this report, silver nanoparticles from plant extract of Ehretia laevis synthesis have been studied for their catalytic performance towards the oxidation of p-cresol to p-hydroxybenzaldehyde. The synthesis of nanoparticles is confirmed by UV, SEM, TEM and XRD analysis. The excellent catalytic oxidation process by silver nanoparticles has the merit of being a short reaction time, an environmentally friendly and simple operation, involving convenient workup and resulting in good to excellent yields.*

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**Keywords :** Nanoparticles, Green synthesis, Ehretia laevis, catalytic oxidation

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**STUDIES IN THE ACOUSTIC PROPERTIES OF S-TRIAZINE AND  
TRIAZINOTHIOCARBAMIDES**

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**ABSTRACT**

*S-triazino compounds possess the potential therapeutic value. The study of intermolecular interactions by calculating the acoustic parameters by ultrasonic technique will be useful in medicinal sciences. Hence, the Ultrasonic velocity and density measurement of s-triazine and triazinothiocarbamides were carried out in two different solvents, ethanol and dioxane respectively for investigating solute-solvent interactions. The measurements of 0.01M solutions are carried out at 303.15K. The aim of the study was to find the effect of protic/aprotic nature, polarity/non-polarity, dielectric constant, hydrogen bonding of solvent with resonance stabilization, structure, different substituents and effect of them on ligands in solute-solvent interactions. The data obtained during the study is used for determining the most significant acoustic parameters like adiabatic compressibility ( $\beta_s$ ), apparent molar volume ( $\Phi_v$ ), apparent molar compressibility ( $\Phi_c$ ) and relative association ( $R_A$ ). These parameters explore solute-solvent interactions in different solvents. In this investigation, the comparative study of effect of solvent and effect of substituents in the solute are studied on molecular interaction of matter.*

**Keywords:** ultrasonic technique, acoustic parameters, solute-solvent interactions.

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**SCANNING ELECTRON MICROSCOPY BASED MICROSCOPIC STUDIES OF  
TRICHOMES PRESENT ON LEAF AND POD SURFACE OF CAJANUS LINEATUS  
(WIGHT & ARN.) MAESEN (FABACEAE)**

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**ABSTRACT**

*Pigeonpea, Cajanus cajan (L.) Millsp., is an important legume crop of the semi-arid regions and is also recognized as the second most important pulse crop in India. Its productivity is affected by Helicoverpa armigera (Hubner), the pod borer which is the most damaging pest. The wild Cajanus species possesses high level resistance against the pod borer. The present microscopic investigation was carried out by Scanning Electron Microscopy (SEM) to study the different types of trichomes present on the leaf and pod surface of the wild Cajanus species. These trichomes serve as resistance to Helicoverpa armigera sp. The plant under investigation was C. lineatus. The pod surface is highly pubescent as compared to the leaf surface. This pubescence serves as a barrier to the insects from damaging crop. Morphologically five types of trichomes were reported on the plant surface of the wild Cajanus sp. viz. type A, B and E (glandular) and C and D (non-glandular). Findings of the present investigation revealed that the pod and leaf surface of the Cajanus lineatus (Wight & Arn.) Maesen showed high density of non-glandular trichomes i.e. C and D and meager density of glandular trichome i.e. A, whereas type B and E were not observed.*

**Keywords:** Fabaceae, Scanning Electron Microscopy, Helicoverpa armigera and Trichomes.

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## GREEN SYNTHESIS OF QUINOLINE-4-CARBOXYLIC ACID DERIVATIVES USING TUNGSTATE SULFURIC ACID AS AN EFFICIENT CATALYST

**N. G. Salunkhe, C. A. Ladole & A. S. Aswar\***

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### ABSTRACT

*Simple and improved conditions have been found to carry out the Doebner synthesis for the synthesis of Quinoline-4-carboxylic acid derivatives in the presence of tungstate sulfuric acid as catalyst. The reaction was performed under very mild conditions with microwave irradiation as the energy source. Compared with the classical Doebner reaction conditions, this method has an advantage of significant enhance in yields (81–75%). The advantages of this protocol include the excellent yield, operational simplicity, short reaction time and avoidance the excess use of organic solvents. Also, it was easily separated and reused several time cycles without any significant loss of activity. Products were identified using physical and spectroscopic data.*

**Keywords:** Quinoline, Doebner synthesis, tungstate sulfuric acid, Multicomponent reaction (MCR).

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## DESIGN AND SYNTHESIS OF NOVEL $\beta$ -CARBOLINE DERIVATIVES AS POTENT ANTICANCER LEAD COMPOUNDS

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### ABSTRACT

*$\beta$ -Carboline family is a large group of alkaloids widely distributed in nature and exhibits broad-spectrum anti-tumor activities. We have designed and synthesized series of novel N-benzyl, N-alkyl, substituted  $\beta$ -carboline methylester derivatives and characterised by FT-IR  $^1\text{H}$ ,  $^{13}\text{C}$  and LC-MS spectroscopic techniques. Molecular docking studies with protein PDB code: 1PYE using Argus lab free software. The X-ray crystal structure of wild type CDK<sub>2</sub> inhibitor (PDB code: 1PYE) was retrieved from the Protein Data Bank. The  $\beta$ -carboline derivatives showed optimum binding affinity with a molecular target CDK<sub>2</sub> with the binding energy of -9.54 kcal/mol as compared to the standard.*

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**ANALYSIS AND METHOD DEVELOPMENT FOR RESIDUAL PESTICIDES OF AGRICULTURAL SOIL AND WATER OF GIB AREA KACHCHH, GUJARAT, INDIA**

**J. J. Bhatt<sup>1</sup> & M. H Trivedi<sup>2</sup>**

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**ABSTRACT**

*In order to establish the method for analysis of pesticides in agricultural land, we have selected a specific and very sensible GIB area. The penetration of pesticides is being most common now days in agricultural land. Dispersion in irrigation water and in the harvested crops is also becoming major issue. To overcome it, we have established the analytical study of soil and water samples from the selected area of Great Indian Bustard (GIB). The major, minor elements and micro nutrients from soil have been studied by usual methods. The residual pesticides have been analyzed by GC-MS for Water and Soil both. The method has been developed with the help of reported method for pesticides standard. Results showed in tabulated form. This study encourages us to promote Organic Farming in such area to save GIB.*

**Key Words:** GIB (Great Indian Bustard), GC-MS (Gas Chromatography-Mass Spectrometry).

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**SYNTHESIS, CHARACTERISATION AND THERMAL STUDIES OF Ni(II), Cr(III), Fe(III), Mn(III) and VO(IV) COMPLEXES OF 2,4-DIHYDROXYBENZOPHENONE SALICYLOYL HYDRAZONE (DHBSH)**

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**ABSTRACT**

*Ni(II), Cr(III), Fe(III), Mn(III) and VO(IV) complexes of 2,4-dihydroxybenzophenone salicyloyl hydrazone(DHBSH) have been synthesized and characterized by elemental analysis, molar conductance, magnetic moments, electronic, <sup>1</sup>H-NMR, Mass, IR spectra and thermal studies. The molar conductivity data of the complexes show them to be non-electrolyte. The IR data suggest that the ligands are tridentate for Ni(II), VO(IV) and tetradentate for Cr(III), Fe(III), Mn(III), while the electronic spectral data together with magnetic moment suggest square planer geometry for Ni(II), octahedral geometry for Cr(III), Fe(III) and square pyramidal geometry for Mn(III), VO(IV) complexes. The TG analysis suggests high stability for most of the complexes followed by thermal decomposition in different steps. The kinetic parameters for their decomposition have been evaluated by using the Freeman Carroll and Sharp-Wentworth methods.*

**Keywords:** - Salicyloyl hydrazone, complexes, thermal analysis

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## SYNTHESIS OF BIS-[SUBSTITUTEDIMINO]THIOCARBAMIDES

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### ABSTRACT

*A novel series of Bis-[substitutedimino]thiocarbamides or 1-{N (1E)- substitutedcarbamimidoyl}3-{N- [(E)- substitutedmethylidene]carbamimidoyl}- thiourea was successfully synthesized in this laboratory. Bis-[substitutedimino] thiocarbamides or 1- {N (1E) substitutedcarbamimidoyl} 3- {N- [(E)- substitutedmethylidene] carbamimidoyl} thiourea were synthesized by the reaction of N- substitutedformamidino -N'- substituteddiminothiocarbamides or 1- (N- carbamimidoyl) 3- {N- (E)- substitutedcarbamidoyl}thiourea with various aldehydes in sulphuric acid in acetone-ethanol medium in 1:1 molar proportion for 20 minutes. The structures of all the synthesized compounds were justified on the basis of chemical characteristics, elemental analysis and spectral analysis.*

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## STUDY OF BORE WELL WATER QUALITY OF BHAVAN,PIMPALGAON PETH AND BORGAEON KASARI TOWN IN SILLOD TALUKA DIST.AURANGABAD OF MAHARASHTRA

**Kadu, N.S., Ingle, A.V. & Bodkhe, V.S.**

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### ABSTRACT

*Fresh water has become a scarce commodity due to over exploitation and pollution of water. Water quality analysis is an important issue in bore well water studies. Human and ecological use of bore well water depends upon ambient water quality. The availability of good quality water is an indispensable feature for preventing diseases and improving quality of life. In present investigation, bore well water source samples of Bhavan, Pimpalgaon Peth and Borgaon Kasari town in Sillod taluka were collected and analyzed as per standard methods, Chemical parameters such as Free CO<sub>2</sub>, Acidity and Alkalinity were studied.*

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**Keyword :** Bore well water, Chemical parameters, Standard methods

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## DETECTION OF DDOS FOR THE SECURITY IN CLOUD COMPUTING ENVIRONMENT

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### ABSTRACT

Due to increase of data, many organizations have started to use cloud instead of web services. But it has many security issues, like Distributed Denial of service attack (DDoS). It makes a system or network unavailable to corresponding user. The motive of a DDoS attack in Cloud computing is not to steal or modify data. It instigates a coordinated attack on Cloud computing service, resource and infrastructure to consume it and make it unavailable to legitimate users. This paper discusses various defence mechanisms to prevent these attacks. This work gives exhaustive study on N-CBF method for DDoS detection and prevention in cloud environment. It adjusts dynamically weight for each attribute pair and threshold value for each attribute. It increases the rate of detection; also provide more security in cloud environment. This work gives simulation for N-CBF method.

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**keywords**— Distributed Denial of service attack (DDoS), CBF, HCF, N-CBF.

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## COMBUSTION SYNTHESIS AND OPTIMIZATION OF Tb<sup>3+</sup>-DOPED AZr<sub>2</sub>(PO<sub>4</sub>)<sub>3</sub> (A<sup>+</sup> = LI, NA, K) PHOSPHORS FOR MERCURY-FREE LAMP AND PLASMA DISPLAY PANELS APPLICATION

**Wankhade, R. N., Bajaj, N. S., Bhatkar, V. B. & Omanwar, S. K.**

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### ABSTRACT:

Tb-doped AZr<sub>2</sub>(PO<sub>4</sub>)<sub>3</sub> (AZP) green phosphors were synthesized by novel solution combustion method, and the excitation spectra of pure compound in the vacuum ultraviolet (VUV) regions are investigated. The VUV characteristic was optimized by Tb<sup>3+</sup> concentration and by alkali metals (A = Li, Na, K) contents. The concentration quenching was observed when the concentration of Tb<sup>3+</sup> was 2.0 at% of Zr<sub>2</sub>. The band ranging from 130 to 160 nm in excitation spectra is due to the absorption band of host lattice or PO<sub>4</sub> groups; the band at 160-200 nm is related to the charge transfer (CT) transition of O – Zr. The strong band at 225 nm and the weak band at 261 nm in the excitation spectra are assumed to the spin-allowed and spin-forbidden f–d transitions (4f<sup>8</sup> → 4f<sup>7</sup>5d<sup>1</sup>) of Tb<sup>3+</sup>. The excitation and emission spectra indicate that the phosphors can be effectively excited by 147 and 172 nm, and demonstrated a satisfactory green light performance. The high luminescent intensity, excellent color purity and chemical stability of AZr<sub>2</sub>(PO<sub>4</sub>)<sub>3</sub>:Tb<sup>3+</sup> make it an attractive green-emitting phosphors for mercury-free luminescent lamp and plasma display panel. The prepared phosphor sample characterized using X-ray diffraction), scanning electron microscopy and VUV spectra was studied.

**Keywords:** Solution Combustion Synthesis; Zirconium Phosphates; Plasma Display Panels; Mercury-Free Fluorescent Lamps

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## DESIGN DEVELOPMENT AND PERFORMANCE EVALUATION OF POWER OPERATED GROUNDNUT DECORTICATOR

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<sup>2</sup>Department of Electrical And Other Energy Sources, CAET, Jalgaon Jamod  
<sup>3</sup>Department of Soil and Water Conservation Engineering, CAET, Jalgaon  
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Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola, Maharashtra.  
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### ABSTRACT

Present work entitled "Design, development and performance evaluation of power operated groundnut decorticator." To design concave sieve of groundnut decorticator various physical parameters of groundnut pods and seeds were studied to design concave sieve. Overall dimension of main frame are 1400×320×820. Electric motor, Pulley and belts are use for power transmission. The performance evaluation of power operated groundnut decorticator was evaluated at different clearances between decorticating lever and concave sieve. Broken seed were 13.96% at 12 mm clearance and losses were 21.06% at 7 mm clearance. Decorticating efficiencies were 97.78% at 12 mm clearance and 98.43% at 7 mm clearance. Cleaning efficiency was 85.71% at 12 mm clearance and 78.93 at 7 mm clearance. Cleaning efficiency decreases with decreasing clearance. Input capacity was 45 kg/hr at 12mm clearance and 40 kg/hr at 7mm clearance. Output capacity was 28.75 kg/hr at 12 mm clearance and 25.44 kg/hr at 7 mm clearance. Input and output capacities were decreased with clearance. Seed recovery range was 79.07% at 12mm clearance and 73.29% at 7 mm clearance. Seed recovery range was decreased with clearance. Capacity utilization was 63.88% at 12mm clearance and 63.60% at 7 mm clearance.

**Keywords:** Decortication, clearance, broken seed, capacity, seed recovery range etc.

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## DOMAIN WALLS COSMOLOGICAL MODELS IN MODIFIED THEORY OF GRAVITATION

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### ABSTRACT

In this paper, we have studied a self consistent system of hypersurface homogeneous cosmological models with domain walls in  $f(R, T)$  theory of gravitation. We have obtained the exact solution of the field equations in  $f(R, T)$  theory. Furthermore, we have put studied the physical and kinematical properties of the investigated model.

**Keywords:** Hypersurface homogeneous space time, Domain walls,  $f(R, T)$  theory of gravity.

## SUGARS TO VALUE ADDED PRODUCTS OF IMPORTANCE

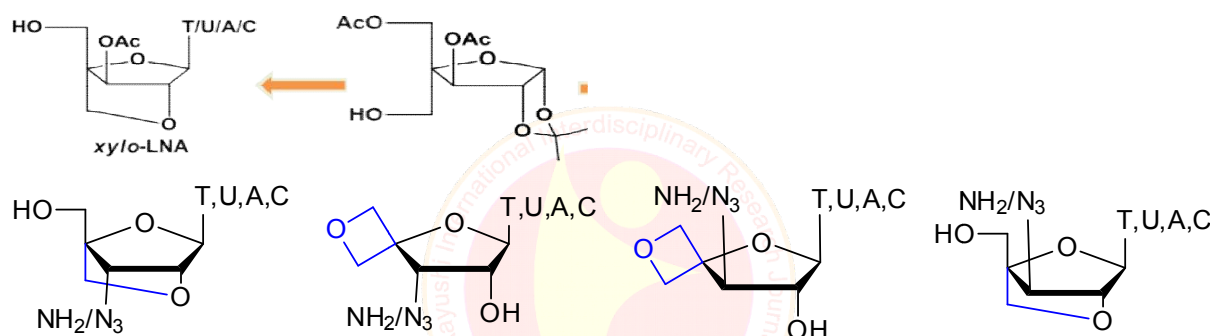
Prasad, A.K.

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The discovery of sugar modified nucleoside derivatives as potential antiviral agents and the emergence of antisense and antigene oligonucleotides as potential and selective inhibitors of gene expression have led to the considerable rise in the synthesis of modified nucleoside derivatives and nucleic acids involving them. Further, there has always been need to have biocompatible drug carriers capable of delivering

water insoluble drugs with high transport and controlled release capacity.

We have developed an efficient biocatalytic methodology for the transformation of a trihydroxy sugar derivative obtained from glucose into novel sugar modified nucleosides and sugar-PEG co-polymer having application as drug delivery agents. Detailed results will be presented in the meeting.



### ACKNOWLEDGEMENTS

We thank University of Delhi and Indo-German Science & Technology Center (IGSTC) for financial assistance.

### REFERENCES

1. L.A. Paquette; *Aust. J. Chem.* **57**, 7 (2004).
2. V.K. Sharma, M. Kumar, C.E. Olsen and A.K. Prasad; *J. Org. Chem.* **79**, 6336 (2014).
3. V.K. Sharma, M. Kumar, D. Sharma, C.E. Olsen and A.K. Prasad; *J. Org. Chem.* **79**, 8516 (2014).
4. T.M. Rangarajan, R. Singh, R. Brahma, K. Devi, Raj P. Singh; *Chem. Eur. J.* **20**, 14218 (2014).
5. V. Khatri, A. Kumar, B. Singh, S. Malhotra, A.K. Prasad; *J. Org. Chem.* **80**, 11169 (2015).
6. R. Kumar, M. Kumar, J. Maity, A.K. Prasad; *RSC Advances* **6**, 82432 (2016).
7. M. Kumar, R. Kumar, N. Rana, A.K. Prasad; *RSC Advances* **6**, 17713 (2016).
8. A.K. Prasad, R. Haag, V.S. Parmar, et al.; *Chem Soc. Rev.* **45**, 6855 (2016).
9. V.K. Sharma, S.K.S., P.M.K., A.K. Prasad, J.K. Watts, et al. *Chem. Commun.* **53**, 8906 (2017).
10. R. Kumar, M. Kumar, A. Singh, N. Singh, J. Maity *Carbohydrate Research* **445**, 88 (2017).
11. V. Khatri, S.B., S. Deep, E. Kohli, S.K. Sharma, R. Haag, A.K. Prasad *RSC Adv.* **7**, 37534 (2017).
12. P. Rungta, P. Mangla, V. Khatri, J. Maity, A.K. Prasad, *Biocat. Biotrans.* doi.org/10.1080/10242422.2018.1438416 (2018).
13. S. Srivastava, D. Bimal, K. Bohra, B. Singh, P. Ponnann, R. Jain, M. Varma-Basil, J. Maity, M. Thirumal, A.K. Prasad *European J. Med. Chem.* doi: 10.1016/j.ejmech.2018.02.067 (2018)



## **KALUZA-KLEIN COSMOLOGICAL MODEL IN SCALAR TENSOR THEORIES OF GRAVITATION**

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### **ABSTRACT**

*Kaluza-Klein space time is considered for macroscopic body in the scalar tensor theories formulated by Brans-Dicke ( Phys. Rev. 124:925,1961) and Saez-Ballester (Phys. Lett.A 113:467,1985). Exact cosmological model in both the theories are obtained with the help of equation of state and relation between metric coefficient. Also, the expression for energy density, energy flow vector and stress tensor of the model are discussed.*

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**Key word :** Macroscopic body, Kaluza-Klein, Brans-Dicke, Saez-Ballester

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## **BIANCHI TYPE I QUARK AND STRANGE QUARK COSMOLOGICAL MODELS IN $f(G)$ THEORY OF GRAVITATION**

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### **ABSTRACT**

*Bianchi type I cosmological model in presence of quark and strange quark matter which exist in the first second of the early universe in the framework of  $f(G)$  theory of gravitation is investigated. Field equations are solved by assuming volumetric exponential and power law expansions. Some physical parameters are also discussed in details.*

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**Keywords:** - Bianchi type I, Perfect fluid,  $f(G)$  theory.

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## **BIANCHI TYPE I SPACE-TIME WITH TWO FLUID COSMOLOGICAL MODELS IN SCALAR-TENSOR THEORY OF GRAVITATION**

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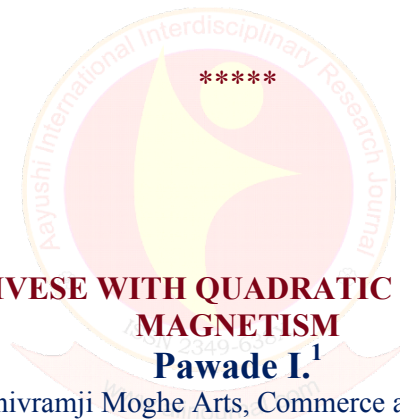
### **ABSTRACT**

*This paper deals with anisotropic homogeneous Bianchi Type I cosmological models in presence of two fluids in the context of Brans-Dicke theory of gravitation. In the two fluid models, one fluid represents the matter content of the universe and another fluid is chosen to the CMB radiation. The solution of the field equations are obtained by using constant deceleration parameter. The behavior of physical and kinematical properties of the investigated models is discussed.*

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**Keywords:-** *Bianchi Type I Space-Time, Two Fluid Models, Brans-Dicke Theory.*

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## **AN ANISOTROPIC UNIVERSE WITH QUADRATIC EQUATION OF STATE AND MAGNETISM**

**Pawade I.<sup>1</sup>**

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### **ABSTRACT**

*In this paper, we have studied quadratic equation of state with magnetism in an anisotropic Universe. The general solution of the Einstein's field equations is obtained and the physical and geometrical aspects of the model are discussed.*

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**Keywords:** *Anisotropic Universe, Quadratic Equation of State, Electromagnetism.*

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**SCANNING ELECTRON MICROSCOPY BASED MICROSCOPIC STUDIES OF TRICHOMES PRESENT ON LEAF AND POD SURFACE OF CAJANUS LINEATUS (WIGHT & ARN.) MAESEN (FABACEAE)**

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**ABSTRACT**

*Pigeonpea, Cajanus cajan (L.) Millsp., is an important legume crop of the semi-arid regions and is also recognized as the second most important pulse crop in India. Its productivity is affected by Helicoverpa armigera (Hubner), the pod borer which is the most damaging pest. The wild Cajanus species possesses high level resistance against the pod borer. The present microscopic investigation was carried out by Scanning Electron Microscopy (SEM) to study the different types of trichomes present on the leaf and pod surface of the wild Cajanus species. These trichomes serves as resistance to Helicoverpa armigera sp. The plant under investigation was C. lineatus. The pods surface is highly pubescent as compared to the leaf surface. This pubescence serves as a barrier to the insects from damaging crop. Morphologically five types of trichomes were reported on the plant surface of the wild Cajanus sp. viz. type A, B and E (glandular) and C and D (non-glandular). Findings of the present investigation revealed that the pod and leaf surface of the Cajanus lineatus (Wight & Arn.) Maesen showed high density of non-glandular trichomes i.e. C and D and meager density of glandular trichome i.e. A, whereas type B and E were not observed.*

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**Keywords:** Fabaceae, Scanning Electron Microscopy, Helicoverpa armigera and Trichomes.

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**CONVOLUTION THEOREM OF TWO DIMENSIONAL OFFSET FRACTIONAL FOURIER TRANSFORM**

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**ABSTRACT**

*The Fractional Fourier transform (FRFT) is generalization of Fourier transform. The Fractional Fourier transform has been investigated by many different authors and they proved it is very useful in solving some problem in quantum physics, optics, filter design, image processing, pattern recognition, wavelet transform. FRFT performs a rotation of signal in the time-frequency plane and it has many applications in time varying signal analysis, pattern recognition algorithms makes extensive use of convolution because of its translation invariance property.*

*The Offset Fractional Fourier transform is the space shifted frequency modulated version of original one. In this paper we discussed the Two Dimensional Offset Fractional Fourier transform in distributional generalize sense. Convolution theorem for the Two Dimensional Offset Fractional Fourier transform is also proved.*

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**Keywords:** Fourier Transform, The Fractional Fourier transform, Generalize Function, Testing function space.

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## CONVOLUTION STRUCTURE FOR FRACTIONAL COSINE TRANSFORM

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### ABSTRACT

*The fractional cosine transform is generalization of Cosine transform. It has many applications in several areas including signal processing, pattern recognition and filter design. In this paper, we introduced the definition of fractional cosine transform. Also we represent the new convolution structure that preserves the convolution theorem for fractional Cosine transform and which will be easy to implement.*

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**Keywords:** Fractional Fourier transform, fractional Cosine transform, fractional Sine transform.

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## HIGHER DIMENSIONAL CONFORMAL ANISOTROPIC RELATIVISTIC CHARGED FLUID SPHERES WITH A LINEAR EQUATION OF STATE

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### ABSTRACT

*We obtain two new families of compact solutions for higher dimension spherically symmetric distribution of matter consisting of an electrically charged anisotropic uid sphere joined to the Reissner- Nordström static solution through zero pressure surface. The static inner region also admits a one parameter group of conformal motions. First, to study the effect of the anisotropy in the sense of the pressures of the charged uid, besides assuming a linear equation of state to hold for the uid, we consider the tangential pressure  $p_t$  to be proportional to the radial pressure  $p_r$ , the proportionality factor  $C$  measuring the grade of anisotropy. We analyze the resulting charge distribution and the features of the obtained family of solutions. These families of solutions reproduce for the value of  $C = 1$ , the conformal isotropic solution for quark star, previously obtained by Mak and Harko (2002). The second family of solutions is obtained assuming the electrical charge inside the sphere to be a known function of the radial coordinate. The allowed values of the parameters pertained to these solutions are constrained by the physical conditions imposed. We study the effect of anisotropy in the allowed compactness ratios and in the values of the charge.*

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**Keywords :** Higher Dimension, Matter.

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## **BIANCHI TYPE I SPACE-TIME WITH TWO FLUID COSMOLOGICAL MODELS IN SCALAR-TENSOR THEORY OF GRAVITATION**

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### **ABSTRACT**

*This paper deals with anisotropic homogeneous Bianchi Type I cosmological models in presence of two fluids in the context of Brans-Dicke theory of gravitation. In the two fluid models, one fluid represents the matter content of the universe and another fluid is chosen to the CMB radiation. The solution of the field equations are obtained by using constant deceleration parameter. The behavior of physical and kinematical properties of the investigated models is discussed.*

---

**Keywords:-** *Bianchi Type I Space-Time, Two Fluid Models, Brans-Dicke Theory.*



## **AN ANISOTROPIC UNIVERSE WITH QUADRATIC EQUATION OF STATE AND MAGNETISM**

**Pawade I.<sup>1</sup>**

Department of Mathematics, Shivramji Moghe Arts, Commerce and Science College, Pandharkawada.

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### **ABSTRACT**

*In this paper, we have studied quadratic equation of state with magnetism in an anisotropic Universe. The general solution of the Einstein's field equations is obtained and the physical and geometrical aspects of the model are discussed.*

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**Keywords:** *Anisotropic Universe, Quadratic Equation of State, Electromagnetism.*

## COSMOLOGICAL MODEL FOR PLANE SYMMETRIC SPACE TIME IN GENERAL THEORY OF RELATIVITY

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### ABSTRACT

*We have investigated the plane symmetric cosmological models in general theory of relativity for different fields. To get a solution, here we consider two cases a stiff fluid or zeldovich fluid and disordered radiation. Also, some physical and geometrical properties of the models are discussed.*

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**Keywords:** *Plane symmetry, cosmology, interacting fields, stiff fluid or Zel'dovich fluid, disordered radiation*

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## SOLUTION OF SPACE-TIME FRACTIONAL ORDER PARTIAL DIFFERENTIAL EQUATION: MODIFIED ADOMIAN DECOMPOSITION METHOD

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### ABSTRACT

*The purpose of this paper is to suggest a modified Adomian decomposition method for finding an exact solution of nonhomogeneous space-time fractional order partial differential equation by using a fractional Taylor's series expansion. This method is more effective than the general Adomian decomposition method.*

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**Keywords:** *Nonhomogeneous space-time fractional order partial differential equation; Modified Adomian decomposition method; Mittag-Leffler function; Fractional Taylor's series expansion.*

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## DOMAIN WALLS COSMOLOGICAL MODEL IN $f(R,T)$ THEORY OF GRAVITY

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### ABSTRACT

*In this paper, non-static plane symmetric model in the presence of domain walls in the framework of the modified  $f(R,T)$  theory of gravitation has been investigated, where  $R$  is Ricci scalar and  $T$  is the trace of energy momentum tensor. Some physical properties of the model are also obtained and discussed.*

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**Keywords:** Non-static plane symmetric space-time, domain walls,  $f(R,T)$  gravity.

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## MAGNETIZED STRANGE QUARK MATTER IN LYRA GEOMETRY WITH PLANE SYMMETRY

**D. D. Pawar<sup>1</sup>, R. V. Mapari<sup>2</sup> & P.K. Agrawal<sup>3</sup>**

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### ABSTRACT

*In the present paper we studied plane symmetry cosmological model in the presence of modified theory of gravity formulated in the frame work of Lyra manifold using Magnetized strange quark matter (MSQM). We also compute dynamical cosmological parameters by using EoS for strange quark matter. Also we discussed physical and geometrical properties of the model in detail.*

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**Keywords:** Magnetized strange quark matter (MSQM), Lyra manifold, plane symmetry, magnetic flux, Hubble parameter.

## AXIALLY SYMMETRIC COSMOLOGICAL MODELS IN $f(R, T)$ GRAVITY WITH TIME VARYING DECELERATION PARAMETER

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\*Bhartiya Mahavidyalaya, Amravati.

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### ABSTRACT

*In the present paper an attempt has been made to study the axially symmetric cosmological model in  $f(R, T)$  gravity with time varying deceleration parameter. To get deterministic solution some physically plausible conditions have been used. A cosmological model, in this theory, is presented and some physical behavior for both models have been discussed by using physical parameters. The function of Ricci scalar is investigated for these models.*

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**Keywords:**  $f(R, T)$  gravity, Axially symmetric space-time, Deceleration Parameter

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## CONTRIBUTION OF A QUINTESSENCE AND A COSMOLOGICAL CONSTANT IN THE STUDY OF UNIVERSE

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### ABSTRACT

*In the present work we have studied spatially homogeneous and anisotropic Bianchi Type-III space time by considering the dark energy portion of the universe which partly consists of cosmological constant and quintessence the form of the dark energy together. We have obtained an exact solution of the field equation by assuming special law of variation of Hubble's parameter proposed by Berman that yields the constant deceleration parameter. We have extended our work by verifying the consistency of the present model by deriving the kinematical relations such as look back time, proper distance and luminosity distance for any arbitrary large red shifts with the observational parameters.*

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**Keywords:** Bianchi type III space time, cosmological constant, quintessence.

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## LRS BIANCHI TYPE-II STRING-DUST COSMOLOGICAL MODEL WITH NONLINEAR SPINOR FIELD IN GENERAL RELATIVITY.

V.R. Patil<sup>1</sup> & N.S. Bayaskar<sup>2</sup>

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### ABSTRACT

*The role of nonlinear spinor and gravitational field in the evolution of the universe has been studied for LRS Bianchi type-II space-time. Assuming that, the expansion( $\theta$ ) is proportional to the component of the shear tensor ( $\sigma$ ). To obtain exact solution for Einstein's field equations and also discussed the physical and geometrical behavior. The system allows exact solutions only for some special choice of spinor field non-linearity and of Reddy string and Nambu string.*

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**Key words:** Non-Linear Spinor field, LRS Bianchi type-II space-time, Reddy string, Nambu string .

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## CONVOLUTION THEOREM OF TWO DIMENSIONAL OFFSET FRACTIONAL FOURIER TRANSFORM

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### ABSTRACT

*The Fractional Fourier transform (FRFT) is generalization of Fourier transform. The Fractional Fourier transform has been investigated by many different authors and they proved it is very useful in solving some problem in quantum physics, optics, filter design, image processing, pattern recognition, wavelet transform. FRFT performs a rotation of signal in the time-frequency plane and it has many applications in time varying signal analysis, pattern recognition algorithms makes extensive use of convolution because of its translation invariance property. The Offset Fractional Fourier transform is the space shifted frequency modulated version of original one. In this paper we discussed the Two Dimensional Offset Fractional Fourier transform in distributional generalize sense. Convolution theorem for the Two Dimensional Offset Fractional Fourier transform is also proved.*

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**Keywords:** Fourier Transform, The Fractional Fourier transform, Generalize Function, Testing function space.

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## IMPACT OF INCREASING CONCENTRATION OF L-ALANINE ON STRUCTURAL, UV-VISIBLE, SHG EFFICIENCY, LUMINESCENCE AND DIELECTRIC TRAITS OF ZINC THIOUREA CHLORIDE (ZTC) CRYSTAL

**G.G. Muley & Mohd Anis**

Department of Physics, Sant Gadge Baba Amravati University, Amravati-444602, Maharashtra, India

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### ABSTRACT

The current investigation is aimed to explore the enhancing effect of increasing concentration of amino acid dopant L-alanine (LA) on decisive optical traits of zinc thiourea chloride (ZTC) crystal. The most commercial slow solvent evaporation technique has been adapted to grow pure and LA doped ZTC crystals at room temperature. The powder X-ray diffraction analysis has been carried out to determine the crystallographic data and analyze the crystalline phase and purity of pure and LA doped ZTC crystals. The influence of LA on optical transparency of ZTC crystal in range of 190-1000 nm has been ascertained by means of UV-visible spectral analysis. The optical band gap of grown crystals has been evaluated using the transmittance data to discuss the technological impetus of grown crystals for optical devices. The Kurtz-Perry test has been performed to determine the positive impact of organic ligand of LA on second harmonic generation (SHG) efficiency of ZTC crystals. The SHG efficiency of LA doped ZTC crystal is found to be remarkably higher than pure ZTC and potassium dihydrogen phosphate crystal materials. The effect of LA on photoluminescence nature of ZTC crystal has been investigated in the range of visible region. The impact of LA on temperature dependent dielectric response of ZTC crystal has been investigated within the range of 30-90 °C.

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**Keywords:** Crystal growth, Nonlinear optical materials, Optical studies, X-ray diffraction

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## NANORODS OF ZINC OXIDE DECORATED WITH TITANIUM DIOXIDE FOR IMPROVED PHOTOVOLTAIC DEVICES

**S.A. Waghuley**

Department of Physics, Sant Gadge Baba Amravati University, Amravati 444602, India

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### ABSTRACT

Photovoltaic (PV) devices based on inorganic semiconducting materials have been attracted much attention to industry research because of use of less toxic, more abundant alternative materials and potentially lower cost manufacturing methods. Zinc oxide (ZnO) and (titanium dioxide) TiO<sub>2</sub> are the promising candidates of semiconductor materials for optoelectronic applications. ZnO has a wide band gap of 3.37 eV and a direct band gap semiconductor. It has transparency in the visible region. The electron mobility of ZnO is higher than TiO<sub>2</sub>. Due to this, recombination loss becomes lowered with faster electron transport in TiO<sub>2</sub>-decorated ZnO nanorods. Our research group deals with the investigation on comparative photovoltaic (PV) response for three architectures, indium tin oxide (ITO)/TiO<sub>2</sub> nanoparticles/Al, ITO/ZnO nanorods/Al and ITO/ZnO nanorods-TiO<sub>2</sub> nanoparticles composite/Al, respectively. The prominent peaks inside the X-ray diffraction patterns clearly show the formation of ZnO and TiO<sub>2</sub> nanoparticles. The maximum absorption magnitudes and tuning in band of composites are clearly point out the decoration of TiO<sub>2</sub> nanoparticles on ZnO nanorods. The lower in photoluminescence intensity shows lower in electron-hole pairs recombination rate inside the composites. The performance of PV device of ZnO nanorods-TiO<sub>2</sub> nanoparticles composite shows much higher power conversion efficiency and incident photon conversion efficiency as compare to bare TiO<sub>2</sub> and ZnO. Power conversion efficiency ( $\eta$ ) of composite was obtained as 1.9, which is much higher than of bare TiO<sub>2</sub> ( $\eta=1.2$ ) and ZnO ( $\eta=1.5$ ), respectively.

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**Keywords:** Photovoltaic device; Titanium dioxide; Zinc oxide; Nanorods.

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## CURRENT STATUS OF DIRECT DARK MATTER DETECTION EXPERIMENTS

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Department of Physics, Shri Shivaji Science College, Amravati  
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### ABSTRACT

*Much like ordinary matter, dark matter might consist of elementary particles, and weakly interacting massive particles are one of the prime suspects. During the past decade, the sensitivity of experiments trying to directly detect them has improved by three to four orders of magnitude, but solid evidence for their existence is yet to come. We overview the recent progress in direct dark matter detection experiments and discuss future directions. Direct detection experiments are designed to detect the nuclear recoil in the scattering of galactic WIMPs off target nuclei. The signal rate depends on the local density and velocity distribution of WIMPs in the Milky Way (astrophysical inputs with non-negligible systematic uncertainties), the WIMP mass, and the interaction cross-section of the target nuclei. Most theoretical models predict that this cross-section is smaller than  $10^{-42}$  cm<sup>2</sup> for nearly all possible WIMP masses, yielding an extremely low signal rate, which in turn requires an extraordinarily low background environment for detection. To suppress the background produced by cosmic rays, all the direct detection experiments are located in deep underground laboratories. The residual background also includes neutrons and gamma rays from the environment and detectors. Passive shielding and, in some cases, active veto are required to suppress the external background, and high-purity detector components are a must to minimize the more dangerous internal backgrounds. The ultimate irreducible background comes from solar and atmospheric neutrinos. The uncertainty in neutrino-nucleus coherent scattering eventually limits the sensitivity of the direct detection experiments.*

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**Keywords:** WIMP, Milky Way, Neutrino, Detection

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## SYNTHESIS OF NANO PANi-SnO<sub>2</sub> COMPOSITES AND STUDY OF AC CONDUCTIVITY

**D.R. Bijwe\*, S.S. Yawale and S.P. Yawale**

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Govt. Vidarbha Institute of Science and Humanities, Amravati 444604 Maharashtra (India)  
Email :- spyawale@rediffmail.com, d\_bijwe@rediffmail.com

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### ABSTRACT

*In this present paper, we report A C conductivity on the composite of conducting polymer polyaniline (PAni) with Nano crystalline SnO<sub>2</sub> powder. The A C conductivity of PAni-SnO<sub>2</sub> composite has been investigated. The PAni samples with SnO<sub>2</sub> are prepared with 10,12,15,20 and 25 wt%. The experimental results showed that the A C electrical conductivity increased with increasing the tin oxide (SnO<sub>2</sub>) concentration and temperature. The nanosize Tin oxide is prepared in the laboratory from SnCl<sub>4</sub> and ammonia solution. The polyaniline conducting polymer is synthesized by chemical oxidation method using ammonium persulfate as oxidizing agent. The different wt % of nanosize tin oxide (SnO<sub>2</sub>) powder was added in solution during the synthesis of polyaniline. TEM (Transmission electron microscopy) results shows the particle size of SnO<sub>2</sub> in the range of 10-20 nm.*

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**Keyword:** PANI, SnO<sub>2</sub>, TEM

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## INVESTIGATION OF IRRADIATION EFFECTS ON CONDUCTING POLYMER BASED COMPOSITE

**R. V. Bobade<sup>1</sup>, S. V. Pakade (Yawale)<sup>1</sup> And S. P. Yawale<sup>2</sup>**

a. Govt. Vidarbha Institute of Science & Humanities, Amravati – 444604

b. Govt. Institute of Science, Mumbai-444032

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### ABSTRACT

*Radiation effect, is one of the physical phenomena that take place on the exposed media. In the present study, novel electrically conducting material polyaniline (PANI) and PANI/MgO composite was synthesized by chemical oxidation method using ammonium persulfate as oxidizing agent. Various PANI/MgO composites were prepared by varying the amount of MgO (5, 10, 15 wt% of aniline monomer). The irradiation effect on the prepared PANI based composite was investigated. The irradiation process was carried out in air in a conventional gamma chamber, which uses a 60Co source, and the composite was exposed to gamma radiation dose of 40kGy under varying experimental conditions. The time duration of irradiation on the sample was increased gradually from 0 min to 8 min. Effects of irradiation on PANI samples was investigated by means of D.C electrical Conductivity. The experimental results showed that the D.C. electrical conductivity increases due to irradiation and with increasing duration of gamma irradiation on sample that means the radiations significantly influenced the conductivity of PANI sample.*

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**Key words:** PANI-MgO, DC conductivity, irradiation

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## A REVIEW ON ROLE OF NANOTECHNOLOGY BASED APPLICATIONS IN BIOTECHNOLOGY

**M. S. Bisen<sup>1</sup> and R. U. Gadpayle<sup>2</sup>**

<sup>1</sup>Dept. of Physics, YashwantraoChawhan College, Lakhandur

<sup>2</sup>Dept of Microbiology, YashwantraoChawhan College, Lakhandur Dist. Bhandara, (Maharashtra)-441803

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### ABSTRACT

*Nanotechnology, has been developing as a pivotal area of science with multitude of applications in diverse fields ranging from Medicine, Biotechnology, Environmental science, Computer sciences, Chemical Sciences, Physical sciences, etc. At nanoscale, that is a natural or artificially constructed material at nanoscale dimensions, have fundamentally different physical, chemical, and biological properties which can be exploited for an extremely wide range of novel applications from astrophysics to genetic engineering and biotechnology. The advances in nanotechnology have enriched biological sciences by finding several new applications. The modern methods use nanomaterials for development of GMO foods, Microorganisms, plants and animals modified to carry novel genes, proteins or therapeutics by using nanoparticles as DNA-carriers. The nanoparticles have also been used as carriers for therapeutic drugs or molecules. The uses of microfluidic systems and sensors have been another aspect of nanotechnology based applications in biological sciences. Thus, the nanotechnology has provided a solid platform to various aspects of biological science and technology. In this review, nanoparticles types such as nanospheres, nanorods, nanoshells and nanocages, their synthesis, and their roles in biological sciences with particular emphasis on biotechnology are discussed.*

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**Key Words:** Nanotechnology, Nanoparticles, Biotechnology, Genetic Engineering, Biosensor

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## SYNTHESIS OF NANOCRYSTALLINE CoS THIN FILM BY CHEMICAL SUCCESSIVE IONIC LAYER ADSORPTION AND REACTION TECHNIQUE

**A. V. Mitkari, P. Sonone, A.U. Ubale \***

Nanostructured Thin Film Materials Laboratory, Department of Physics, Govt. Vidarbha Institute of Science and Humanities, VMV Road, Amravati 444604, Maharashtra, India.  
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### ABSTRACT

Simple and economic chemical method, Successive Ionic Layer Adsorption Reaction (SILAR) has been employed to prepare nanocrystalline CoS thin film at room temperature. For deposition of CoS 0.05 M cobaltous sulphate and 0.01 M sodium sulfide were used as cationic and anionic precursors. As grown films are uniform and adherent to the glass substrate. The film color changes from grayish black to dark black with thickness. The characterization techniques such as X-ray diffraction (XRD), Scanning Electron Microscopy (SEM), Optical absorption and Electrical resistivity measurements were used to investigate size dependent properties of CoS. SILAR grown CoS thin film exhibits hexagonal structure. The structural studies revealed that the resistivity and activation energy is found to be thickness dependent. The optical band-gap energy decreases from 2.1 to 1.72 eV as film thickness increases from 201 to 513 nm. The thermoelectric measurements confirmed that SILAR grown CoS films are n-type conduction.

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**Keywords**— Thin film, CoS, SILAR method, electrical properties

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## SYNTHESIS AND CHARACTERIZATION OF ZINC OXIDE NANOPARTICLES

**\*S. D. Meshram, \*R. V. Rupnarayan, S.S Pande**

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seemameshram@gmail.com

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### ABSTRACT

ZnO nanoparticles were synthesized by chemical route method using zinc acetate dehydrate having different percentage (0.2% & 0.4%) and sodium hydroxide in pellet form as a precursor. ZnO nanopowder were characterised by UV, XRD and dc electrical conductivity. The thin film of ZnO nanopowder in PVA solution were prepared by solution casting method and the conductivity of thin film was measured. XRD pattern shows the crystalline nature of ZnO with grain size decreases with increasing concentration of zinc acetate. From UV-spectroscopy the band gap energy is found to be 5.91 eV and 5.36 eV for 0.2% & 0.4% of zinc acetate concentration. Dc electrical conductivity is found to be  $2.105 \times 10^{-4}$  eV and  $1.22 \times 10^{-4}$  eV for 0.2% & 0.4% of zinc acetate respectively.

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**Keywords:** Zinc acetate, PVA, NaOH, Chemical route method, XRD, UV, DC electrical conductivity.

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**Deshmukh, R.G.**

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*Much like ordinary matter, dark matter might consist of elementary particles, and weakly interacting massive particles are one of the prime suspects. During the past decade, the sensitivity of experiments trying to directly detect them has improved by three to four orders of magnitude, but solid evidence for their existence is yet to come. We overview the recent progress in direct dark matter detection experiments and discuss future directions. Direct detection experiments are designed to detect the nuclear recoil in the scattering of galactic WIMPs off target nuclei. The signal rate depends on the local density and velocity distribution of WIMPs in the Milky Way (astrophysical inputs with non-negligible systematic uncertainties), the WIMP mass, and the interaction cross-section of the target nuclei. Most theoretical models predict that this cross-section is smaller than  $10^{-42}$  cm<sup>2</sup> for nearly all possible WIMP masses, yielding an extremely low signal rate, which in turn requires an extraordinarily low background environment for detection. To suppress the background produced by cosmic rays, all the direct detection experiments are located in deep underground laboratories. The residual background also includes neutrons and gamma rays from the environment and detectors. Passive shielding and, in some cases, active veto are required to suppress the external background, and high-purity detector components are a must to minimize the more dangerous internal backgrounds. The ultimate irreducible background comes from solar and atmospheric neutrinos. The uncertainty in neutrino-nucleus coherent scattering eventually limits the sensitivity of the direct detection experiments.*

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### ABSTRACT

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a. Govt. Vidarbha Institute of Science & Humanities, Amravati – 444604  
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### ABSTRACT

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## A REVIEW ON ROLE OF NANOTECHNOLOGY BASED APPLICATIONS IN BIOTECHNOLOGY

**M. S. Bisen<sup>1</sup> and R. U. Gadpayle<sup>2</sup>**  
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### ABSTRACT

Nanotechnology, has been developing as a pivotal area of science with multitude of applications in diverse fields ranging from Medicine, Biotechnology, Environmental science, Computer sciences, Chemical Sciences, Physical sciences, etc. At nanoscale, that is a natural or artificially constructed material at nanoscale dimensions, have fundamentally different physical, chemical, and biological properties which can be exploited for an extremely wide range of novel applications from astrophysics to genetic engineering and biotechnology. The advances in nanotechnology have enriched biological sciences by finding several new applications. The modern methods use nanomaterials for development of GMO foods, Microorganisms, plants and animals modified to carry novel genes, proteins or therapeutics by using nanoparticles as DNA-carriers. The nanoparticles have also been used as carriers for therapeutic drugs or molecules. The uses of microfluidic systems and sensors have been another aspect of nanotechnology based applications in biological sciences. Thus, the nanotechnology has provided a solid platform to various aspects of biological science and technology. In this review, nanoparticles types such as nanospheres, nanorods, nanoshells and nanocages, their synthesis, and their roles in biological sciences with particular emphasis on biotechnology are discussed.

**Key Words:** Nanotechnology, Nanoparticles, Biotechnology, Genetic Engineering, Biosensor

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## SYNTHESIS OF NANOCRYSTALLINE CoS THIN FILM BY CHEMICAL SUCCESSIVE IONIC LAYER ADSORPTION AND REACTION TECHNIQUE

A. V. Mitkari, P.Sonone, A.U. Ubale \*

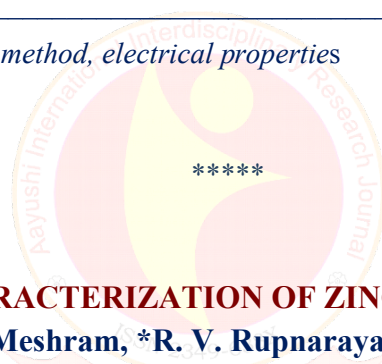
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### ABSTRACT

Simple and economic chemical method, Successive Ionic Layer Adsorption Reaction (SILAR) has been employed to prepare nanocrystalline CoS thin film at room temperature. For deposition of CoS 0.05 M cobaltous sulphate and 0.01 M sodium sulfide were used as cationic and anionic precursors. As grown films are uniform and adherent to the glass substrate. The film color changes from grayish black to dark black with thickness. The characterization techniques such as X-ray diffraction (XRD), Scanning Electron Microscopy (SEM), Optical absorption and Electrical resistivity measurements were used to investigate size dependent properties of CoS. SILAR grown CoS thin film exhibits hexagonal structure. The structural studies revealed that the resistivity and activation energy is found to be thickness dependent. The optical band-gap energy decreases from 2.1 to 1.72 eV as film thickness increases from 201 to 513 nm. The thermoelectric measurements confirmed that SILAR grown CoS films are n-type conduction.

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## SYNTHESIS AND CHARACTERIZATION OF ZINC OXIDE NANOPARTICLES

\*S. D. Meshram, \*R. V. Rupnarayan, S.S Pande

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### ABSTRACT

ZnO nanoparticles were synthesized by chemical route method using zinc acetate dehydrate having different percentage (0.2% & 0.4%) and sodium hydroxide in pellet form as a precursor. ZnO nanopowder were characterised by UV, XRD and dc electrical conductivity. The thin film of ZnO nanopowder in PVA solution were prepared by solution casting method and the conductivity of thin film was measured. XRD pattern shows the crystalline nature of ZnO with grain size decreases with increasing concentration of zinc acetate. From UV-spectroscopy the band gap energy is found to be 5.91 eV and 5.36 eV for 0.2% & 0.4% of zinc acetate concentration. Dc electrical conductivity is found to be  $2.105 \times 10^{-4} \text{ eV}$  and  $1.22 \times 10^{-4} \text{ eV}$  for 0.2% & 0.4% of zinc acetate respectively.

**Keywords:** Zinc acetate, PVA, NaOH, Chemical route method, XRD, UV, DC electrical conductivity.

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## **EFFECT OF YOGA FOR THE PROMOTION OF MENTAL HEALTH AND WELL BEING FOR THE STUDENTS**

**Jagdale, T.L.**

Department of Physical Education Nabira Mahavidyalaya, Katol

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### **ABSTRACT**

*Yoga provides training of mind and body to bring emotional balance. We argue that children and young people need such tools to listen inward to their bodies, feelings, and ideas. Yoga may assist them in developing in sound ways to strengthen themselves. Thus it helps in contributing social sectors in producing healthy citizens. First, we address how children and young people in today's world face numerous expectations and constant stimulations through the Internet and other media and communication technologies. One reason why children experience stress and mental health challenges is that globalization exposes the youth all over the world to various new demands, standards, and options. There is also an increased pressure to succeed in school, partly due to increased competition there but and partly due to a diverse range of options available for young people in contemporary times. Our argument also partially rests on the fact that modern society offers plenty of distractions and unwelcome attractions, especially linked to new media technologies. The dominant presence of multimedia devices and the time spent on them by children are clear indicators of the shift in lifestyles and priorities of our new generation. While these media technologies are valuable resources for children and young people for communication, learning, and entertainment, they also detract them from the desired goods and objectives. Yoga may help children and young people cope with stress and thus contribute positively to balance in life consequently well-being, and mental health can be achieved. Yoga improves children's physical and mental well-being. Similarly, yoga in schools helps students improve resilience, mood, and self-regulation skills pertaining to emotions and stress. Yoga is being used by a growing number of youth and adults as a means of improving overall health and fitness. There is also a progressive trend toward the use of yoga as a mind-body complementary and alternative medicine to improve specific physical and mental health conditions.*

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**Keywords:-** Yoga, Mental health, Social wellbeing,

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## HOW INFORMATION & COMMUNICATION TECHNOLOGY HAS CHANGED THE LIFE STYLE OF TODAY'S SOCIETY

**M. N. Deshpande**

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### ABSTRACT

*Many research investigations are carried out time to time about Status of Health, Status of Physical Activity & Screen Time. Global & National health agencies of different countries have time to time reported about the health & the causes affecting health of people around the world. Purpose of this study was to investigate the adverse effect of screen time on the health of children as well as adults & hazards of technology (gadgets) & ICT (Information & Communication technology) to our life style & health. The author has analysed reports of Global & National health agencies about health diseases & life style along with Research report about Physical Activity level & screen time.*

*After investigating present work, this study reveals that overuse of social networking has increased the screen time among children as well as adults, it is also found that overuse of technology in wrong manner is reducing physical as well as mental capacities of children & adults. Global health agencies have concluded that the way of using technology & the increased screen time is hazardous for children as well as adults. Life style & overuse of social network, lap top, computer, TV (Screen time) is one of the main reason behind decrease in physical activity level & increase in hypokinetic diseases in the society. It is recommended to choose some kind of regular physical activity to become active. It is also recommended to reduce the over use of screen time, social network & technology.*

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**Keywords:** Health, Diseases, Life Style, Screen Time, Physical Activity Level, Health Agencies, Technology & ICT



## ANTIBACTERIAL ACTIVITY OF COPPER (II) OXIDE NANOSTRUCTURE SYNTHESIZED BY MICROWAVE IRRADIATION

G.V. Lakhotiya<sup>1\*</sup>, P.V. Tekade<sup>1</sup>, P.A. Saudagar<sup>1</sup>, N. G. Belsare<sup>2</sup>, A.D. Rangari<sup>2</sup>

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### ABSTRACT

The multi-functionality of cupric oxide (CuO) nanostructure leads to fascinating applications in various fields. Herein, we report a simple, template-free, and surfactant-less wet-chemical microwave irradiated synthesis of CuO nanomaterials having ellipsoidal morphology. The morphology, structural, and optical properties of as-synthesized CuO nanostructures are investigated in detail. CuO nanoellipsoids are found to possess high surface area around 30m<sup>2</sup>/g with the band gap of 1.85 eV and hence used to study the antibacterial activity. The antibacterial study was performed with gram positive and gram negative bacterial strains of *Staphylococcus aureus* and *Escherichia coli*, respectively.

**Keywords:** Nanoellipsoidal CuO, antibacterial activity, microwave synthesis, *S. aureus*, *E. coli*.

### 1. INTRODUCTION

CuO is one of the simplest members of the Cu family which shows its multi-functionality as a p-type semiconductor with narrow band gap of 1.24 eV.<sup>1</sup> It is a well-known material for the properties proliferating its applications in various fields viz. photovoltaics,<sup>2</sup> superconductors,<sup>3</sup> lithium batteries,<sup>4</sup> gas sensors,<sup>5</sup> magnetic storage media,<sup>6</sup> field emission,<sup>7</sup> methanol synthesis,<sup>8</sup> electrochemical sensing,<sup>9</sup> water gas shift reaction,<sup>10</sup> spin dynamics,<sup>11</sup> supercapacitors,<sup>12</sup> and heterogeneous catalysis.<sup>13</sup> Besides the inherent multi-functional properties arising from hetero-nanomorphologies, CuO nanomaterials have also emerged out as a potential candidate for antibacterial and antimicrobial activity.<sup>14</sup> The properties of CuO nanomaterials are closely related to its morphologies and crystallite size.<sup>15, 16</sup> Various morphologies of CuO viz. microspheres,<sup>17</sup> nanoplatelets,<sup>18</sup> nanoparticles,<sup>19</sup> nanorods,<sup>20</sup> nanowires,<sup>21</sup> nanoneedles,<sup>22</sup> nanoribbons,<sup>23</sup> nanosheets,<sup>24</sup> nanoshuttles,<sup>25</sup> nanobundles<sup>26</sup> etc. have attracted considerable attention due to their fundamental importance in above mentioned effective applications. Till date, various methods have been adopted to synthesize CuO, including solid-state reaction, sol-gel, electrochemical, sono-chemical, hydrothermal/solvothermal, microwave assisted hydrothermal, precipitation-pyrolysis, metal organic decomposition, and thermal decomposition.<sup>27-35</sup> Moreover, some green biological routes have also been emerged.<sup>36</sup> All

these techniques are found to be efficient in producing single crystalline materials of diverse morphologies. However, most of these techniques either take long duration to carry out the reactions or not cost effective.

In addition to the need of short reaction duration, microwave synthesis also evenly suppresses side reactions, and thus enhances the yield with best reproducibility.<sup>37</sup> Microwave assisted hydrothermal technique has produced several hierarchical nanostructures of CuO including nanoflowers and nanopetals.<sup>32,38,39</sup> However, there are not many reports on the microwave-irradiated synthesis of CuO using commercial microwave oven.<sup>40-43</sup> Herein, we have adopted the same simple microwave-irradiated route for the wet-chemical surfactant-less synthesis of copper oxide (CuO) nanostructures under ambient condition. The as-synthesized CuO nanostructures were characterized by X-ray diffraction (XRD), field emission scanning electron microscopy (FESEM), Brunauer-Emmett-Teller (BET) surface area analyzer, UV-vis. spectrophotometer for its structural, morphological, surface and properties. The as-synthesized nanostructure is found to possess good crystallinity, uniform morphology, and high purity and its antibacterial activity is tested against the gram positive bacterial strains of *Staphylococcus aureus* (NCIM 2127) and the gram negative bacterial strains of *Escherichia coli* (NCIM 2065) using the disc diffusion assay method.

## 2. EXPERIMENTAL

### 2.1 CHEMICALS

Copper sulphate ( $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ , 99.95%), sodium hydroxide (NaOH), ethanol ( $\text{C}_2\text{H}_5\text{OH}$ ), Bacterial strains of *Staphylococcus aureus* (NCIM 2127) and *Escherichia coli* (NCIM 2065) were obtained from National Chemical Laboratory (NCL), Pune, India. Muller–Hinton agar medium was used for the growth of microorganisms. All the chemicals received were of analytical grade and were used without any further purification.

### 2.2 SYNTHESIS OF CUO NANOMATERIAL

In the present study, microwave irradiated synthesis of CuO nanomaterial was carried out using the microwave irradiated technique as reported elsewhere with some modifications<sup>44</sup>. The commercial microwave chamber was used with the reaction conditions of 500 W for 10 min. During the reaction, color of the solution changed initially from blue to colorless and then slowly turns black. The black colored colloidal solution was centrifuged to separate out the precipitates. These precipitates were then washed using double distilled water, absolute ethanol, and acetone in sequence. This procedure was repeated several times. Finally, black colored powder was dried at 60 °C for 4 h and used for further characterization.

### 2.3 CHARACTERIZATION

The crystallographic properties of the as-synthesized samples were studied using PANalytical high resolution X-ray diffraction (PW 3040/60) operated at 40 kV and 30 mA using  $\text{Cu K}\alpha$  X-rays (1.54Å). The surface morphology of as-prepared copper oxide nanostructures were analyzed using Carl Zeiss SUPRA 40 field-emission scanning electron microscope (FESEM). The effective Brunauer-Emmett-Teller (BET) surface area of the as-synthesized nanomaterials was measured using a Quantachrome ChemBET TPR/TPD analyzer. Optical property of the CuO nanostructures was studied using UV-vis. absorption spectrophotometer (Schimadzu 1800).

### 2.5 ANTIBACTERIAL ACTIVITY

Antibacterial activity of CuO nanostructure was tested against gram positive bacterial strains of *Staphylococcus aureus* (NCIM 2127) and gram negative bacterial strains of *Escherichia coli* (NCIM 2065) using the disc diffusion assay method with impregnated disks of as-synthesized CuO nanopetals. Approximately, 25.0 mL of

molten and cooled nutrient agar media was poured in the sterilized petri dishes and was kept overnight at room temperature to ensure any contamination. The bacterial test organism *S. aureus* and *E. coli* was grown in nutrient broth for 24 h at 37 °C. Bacterial lawns were prepared by using a 100  $\mu\text{L}$  nutrient broth culture of each bacterial organism. Four dilutions of as-synthesized CuO nanopetals was prepared for testing viz. 5 mg/mL, 2.5 mg/mL, 2 mg/mL and 1.5 mg/mL in ethanol. Nanostructured impregnated discs were then placed on the bacterial lawn. These plates were incubated at 37°C for 24 h.

## 3. RESULTS AND DISCUSSION

### 3.1 STRUCTURAL PROPERTY

X-ray diffraction (XRD) analysis was carried out to identify the crystal structure and phase purity of samples. Figure 1 illustrates the XRD pattern of as synthesized material. The material shows the diffraction peaks that match with JCPDS card no. 01-080-1916 indicating single monoclinic phase of CuO. The average crystallite size calculated by Scherrer formula is found to be ~12 nm.

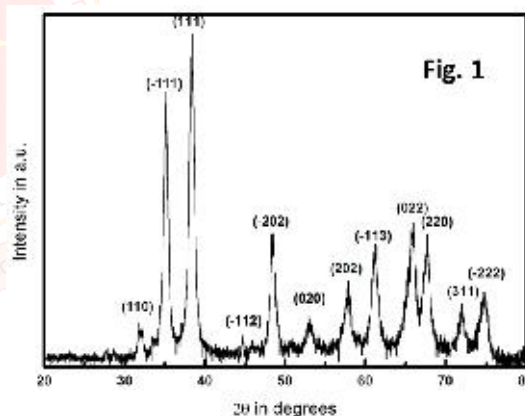


Figure 1. XRD pattern of as synthesized material

### 3.2 MORPHOLOGY

Figure 2 shows FESEM images of as synthesized CuO nanostructures which resemble ellipsoid-like morphology in nanodimension. There is a crucial role of concentration of NaOH to decide the preferential growth direction of nanostructure which supports the formation of ellipsoidal geometry of the nanostructure.<sup>45</sup> Figure 3 depicts the energy dispersive absorption spectrum which confirms the stoichiometry of Cu:O as 1:1.

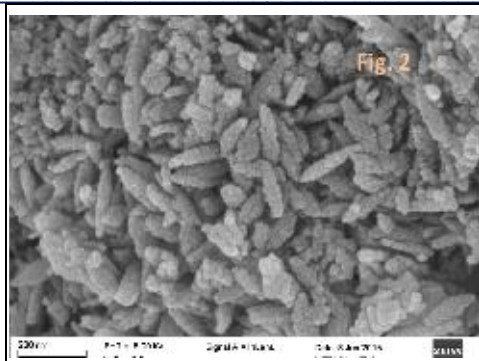


Figure 2. FESEM images of CuO nanostructures

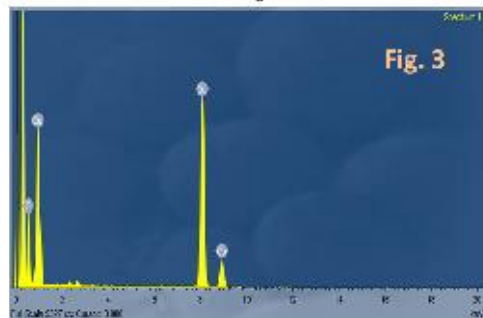


Figure 3. EDAX spectra of as synthesized nanostructure

### 3.3 SURFACE AREA

The Brunauer–Emmett–Teller (BET) technique was used to measure the surface area, pore radius, and pore volume of the as synthesized CuO nanostructure. Figure 3 depicts the nitrogen adsorption-desorption plots for the same. The effective specific surface area of the nanostructure was measured to be 30 m<sup>2</sup>/g. This larger surface area in this system could be well utilized to study

the multi-functionality of CuO in particular the surface phenomenon viz. catalysis, antibacterial properties.

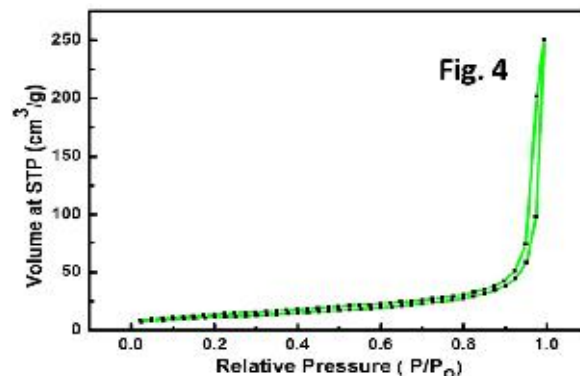


Figure 4. Nitrogen adsorption-desorption isotherm for CuO nanoellipsoids measured at 77 K

### 3.4 ANTIBACTERIAL ACTIVITY

Antibacterial activity of as synthesized CuO nanostructure has been studied by many groups relating to the role of different parameters viz. size effect, morphology, dissolution of copper ions in different medium etc.<sup>14, 46-48</sup>. Thus, as-synthesized nanostructure of CuO has been treated for its antibacterial activity against both gram-positive and gram-negative bacteria. Figure 5 shows the image of zone of inhibition with different concentrations of CuO nanoellipsoids as an antibacterial agent against E. Coli and S. aureus.

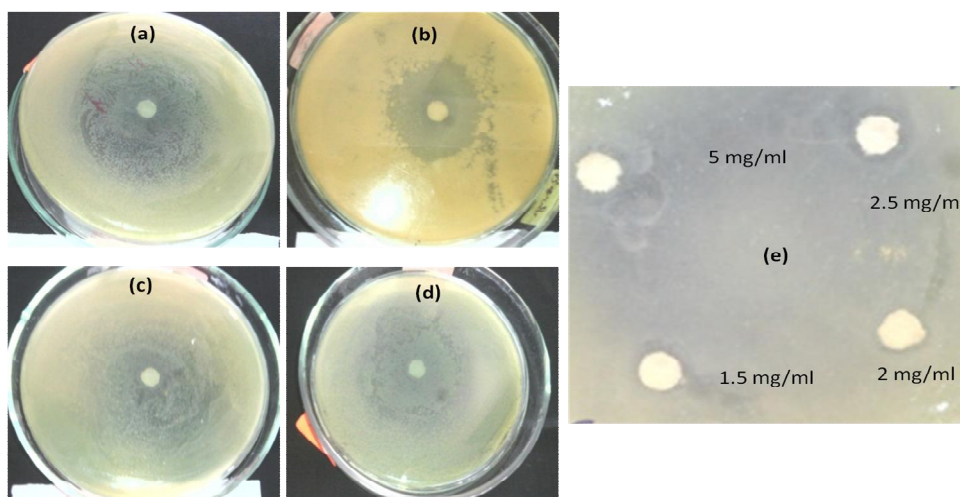


Figure 5. Zone of Inhibition of CuO nanopetals against E. Coli concentration (a) 1.5 mg/mL (b) 2 mg/mL (c) 2.5 mg/mL (d) 5 mg/mL (e) Zone of inhibition against S. aureus with different concentration of CuO nanostructure

Concentration of CuO nanoellipsoids (mg/mL)	Zone of inhibition (in mm) against	
	E. Coli	S. Aureus
5	25	18
2.5	23	15
2	20	12
1.5	18	06

**Table 1.** Zone of inhibition using CuO nanopetals against E.Coli and S.aureus

The diameter of inhibition zone reflects the magnitude of susceptibility of microbes (Table 1). E. Coli which exhibited a larger zone of inhibition than that of S. aureus is found to be more susceptible to CuO nanopetals. Table 1 also highlights the role of concentration of CuO nanopetals in the inhibition zone measurements and relates direct proportion between them. Our observations are in good agreement with Azam et al.<sup>58</sup> who also observed the same trend in case of CuO nanoparticles.

The metabolisms, differences in the cell structure, physiology or degree of contact of organisms with CuO nanomaterial are possible parameters that affect the antibacterial activity. The antibacterial activity of CuO nanoellipsoids can be attributed to the adhesion of bacterial cells over the surface of CuO nanoellipsoids, which releases the copper ions. These copper ions get attached with negatively charged bacterial cell wall leading to rupturing of the bacterial cell wall, thereby protein denaturation and ends with cell death. The effectiveness of CuO nanostructures in antibacterial activity is also known to be due to the

indirect effects or changes in the surrounding charge environment of bacteria.<sup>48</sup>

#### 4. CONCLUSIONS

In present work, we successfully synthesized CuO nanoellipsoids in absence of any surfactant and/or template using wet chemical microwave irradiation technique. The as-synthesized nanostructures were found to possess larger surface area. The as-synthesized CuO nanostructure is demonstrated for the antibacterial activity which gives excellent result against the bacteria E. coli and S. aureus.

#### ACKNOWLEDGMENTS

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#### REFERENCES

1. S. Anandan and S. H. Yang, *J Exp Nanosci*, 2007, 2, 23-56.
2. A. E. Rakhshani, *Solid State Electron*, 1986, 29, 7-17.
3. Y. Tokura, H. Takagi and S. Uchida, *Nature*, 1989, 337, 345-347.
4. T. Iijima, Y. Toyoguchi, J. Nishimura and H. Ogawa, *J Power Sources*, 1980, 5, 99-109.
5. X. P. Li, Y. Wang, Y. Lei and Z. Y. Gu, *Rsc Adv*, 2012, 2, 2302-2307.
6. R. V. Kumar, Y. Diamant and A. Gedanken, *Chem Mater*, 2000, 12, 2301-2305.
7. Y. W. Zhu, T. Yu, F. C. Cheong, X. J. Xui, C. T. Lim, V. B. C. Tan, J. T. L. Thong and C. H. Sow, *Nanotechnology*, 2005, 16, 88-92.
8. C. Baltès, S. Vukojevic and F. Schuth, *J Catal*, 2008, 258, 334-344.
9. J. F. Ping, S. P. Ru, K. Fan, J. A. Wu and Y. B. Ying, *Microchim Acta*, 2010, 171, 117-123.
10. E. Colbourn, R. A. Hadden, H. D. Vandervell, K. C. Waugh and G. Webb, *J Catal*, 1991, 130, 514-527.
11. F. Onufrieva and J. Rossatmignod, *Phys Rev B*, 1995, 52, 7572-7603.
12. S. K. Shinde, D. P. Dubal, G. S. Ghodake and V. J. Fulari, *Rsc Adv*, 2015, 5, 4443-4447.
13. A. Nezamzadeh-Ejhieh and S. Hushmandrad, *Appl Catal a-Gen*, 2010, 388, 149-159.
14. G. G. Ren, D. W. Hu, E. W. C. Cheng, M. A. Vargas-Reus, P. Reip and R. P. Allaker, *Int J Antimicrob Ag*, 2009, 33, 587-590.

15. G. M. Whitesides and B. Grzybowski, *Science*, 2002, 295, 2418-2421.
16. Y. Y. Xu, D. R. Chen and X. L. Jiao, *J Phys Chem B*, 2005, 109, 13561-13566.
17. Y. Zhang, X. L. He, J. P. Li, H. G. Zhang and X. G. Gao, *Sensor Actuat B-Chem*, 2007, 128, 293-298.
18. K. B. Zhou, R. P. Wang, B. Q. Xu and Y. D. Li, *Nanotechnology*, 2006, 17, 3939-3943.
19. R. K. Bedi and I. Singh, *Acs Appl Mater Inter*, 2010, 2, 1361-1368.
20. C. Yang, X. T. Su, F. Xiao, J. K. Jian and J. D. Wang, *Sensor Actuat B-Chem*, 2011, 158, 299-303.
21. M. Kaur, K. P. Muthe, S. K. Despande, S. Choudhury, J. B. Singh, N. Verma, S. K. Gupta and J. V. Yakhmi, *J Cryst Growth*, 2006, 289, 670-675.
22. M. A. Dar, Y. S. Kim, W. B. Kim, J. M. Sohn and H. S. Shin, *Appl Surf Sci*, 2008, 254, 7477-7481.
23. C. L. Zhu, C. N. Chen, L. Y. Hao, Y. Hu and Z. Y. Chen, *J Cryst Growth*, 2004, 263, 473-479.
24. C. Yang, F. Xiao, J. D. Wang and X. T. Su, *Sensor Actuat B-Chem*, 2015, 207, 177-185.
25. D. Chen, G. Z. Shen, K. B. Tang and Y. T. Qian, *J Cryst Growth*, 2003, 254, 225-228.
26. H. Chen, D. W. Shin, J. H. Lee, S. M. Park, K. W. Kwon and J. B. Yoo, *J Nanosci Nanotechno*, 2010, 10, 5121-5128.
27. W. Z. Wang, Y. J. Zhan, X. S. Wang, Y. K. Liu, C. L. Zheng and G. H. Wang, *Mater Res Bull*, 2002, 37, 1093-1100.
28. H. W. Qin, Z. L. Zhang, X. Liu, Y. J. Zhang and J. F. Hu, *J Magn Magn Mater*, 2010, 322, 1994-1998.
29. G. Q. Yuan, H. F. Jiang, C. Lin and S. J. Liao, *J Cryst Growth*, 2007, 303, 400-406.
30. S. Anandan, G. J. Lee and J. J. Wu, *Ultrason Sonochem*, 2012, 19, 682-686.
31. Z. Y. Zhong, V. Ng, J. Z. Luo, S. P. Teh, J. Teo and A. Gedanken, *Langmuir*, 2007, 23, 5971-5977.
32. D. P. Volanti, M. O. Orlandi, J. Andres and E. Longo, *Crystengcomm*, 2010, 12, 1696-1699.
33. H. M. Fan, L. T. Yang, W. S. Hua, X. F. Wu, Z. Y. Wu, S. S. Xie and B. S. Zou, *Nanotechnology*, 2004, 15, 37-42.
34. A. Galembeck and O. L. Alves, *Synthetic Met*, 1999, 102, 1238-1239.
35. F. Bakhtiari and E. Darezereshki, *Mater Lett*, 2011, 65, 171-174.
36. A. V. Singh, R. Patil, A. Anand, P. Milani and W. N. Gade, *Curr Nanosci*, 2010, 6, 365-369.
37. I. Bilecka and M. Niederberger, *Nanoscale*, 2010, 2, 1358-1374.
38. J. Zhu and X. F. Qian, *J Solid State Chem*, 2010, 183, 1632-1639.
39. G. H. Qiu, S. Dharmarathna, Y. S. Zhang, N. Opembe, H. Huang and S. L. Suib, *J Phys Chem C*, 2012, 116, 468-477.
40. A. Jung, S. Cho, W. J. Cho and K. H. Lee, *Korean J Chem Eng*, 2012, 29, 243-248.
41. H. Wang, J. Z. Xu, J. J. Zhu and H. Y. Chen, *J Cryst Growth*, 2002, 244, 88-94.
42. H. C. Song, S. H. Park and Y. D. Huh, *B Korean Chem Soc*, 2007, 28, 477-480.
43. L. Xu, H.Y. Xu, F. Wang, F. J. Zhang, Z.D. Meng, W. Zhao and W.C. Oh, *J Korean Ceramic Society*, 2012, 49, 151-154.
44. G. Lakhotiya, S. Bajaj, A.K. Nayak, D Pradhan, P Tekade, A. Rana, *Beilstein journal of nanotechnology* 8, 1167.
45. Xu, L.; Xu, H.Y.; Wang, F.; Zhang, F.J.; Meng, Z.D.; Zhao, W.; Oh, W.C. *Journal of the Korean Ceramic Society*, **2012**, 49, 2,151-154
46. S. Meghana, P. Kabra, S. Chakraborty and N. Padmavathy, *Rsc Adv*, 2015, 5, 12293-12299.
47. A. Azam, A. S. Ahmed, M. Oves, M. S. Khan, S. S. Habib and A. Memic, *Int J Nanomed*, 2012, 7, 6003-6009.
48. M. Ahamed, H. A. Alhadlaq, M. A. M. Khan, P. Karupiah and N. A. Al-Dhabi, *J Nanomater*, 2014, 2014, 637858-637861.

## ECOFRIENDLY MOSQUITO REPELLENT: RECENT TREND IN ENVIRONMENTAL SCIENCES – A REVIEW

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### ABSTRACT

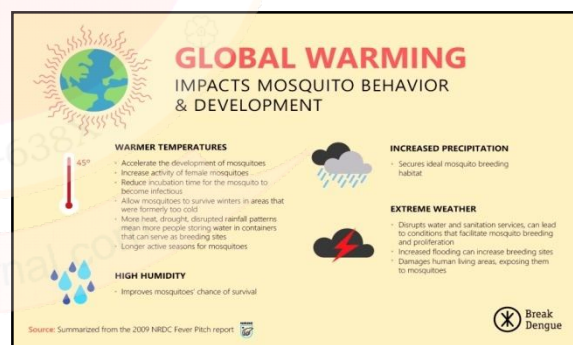
Global Warming is the average rise in temperature of earth which is mainly attributed to the increasing phenomenon of green house effect. Global warming also leads to rise in Mosquitoes. Mosquitoes are responsible for life threatening diseases like Malaria, Dengue, Chikunguniya, yellow fever, filariasis, Japanese encephalitis etc. which remains a major source of death world wide. Malaria is the most commonest and major parasitic infections of Public Health interest through out the globe. Thus the world wide threat of mosquito transmitted diseases demands the need for effective mosquito repellents. Mosquito repellents are important tools for prevention of dreadful diseases as well as uncomfortable painful bites. In recent years, concerns about the potential side effects or adverse health effects of uncontrolled use of synthetic or chemical mosquito repellents have increased. So Ecofriendly Mosquito Repellents is need of hour. Herbal or plant based alternative source of Mosquito repellent agent have gained much popularity, increased interest and recognition owing to easy availability and less environmental impact as these products are safe.

**Keywords :** Global Warming , Mosquitoes, Malaria, Ecofriendly Mosquito Repellents, Safe.

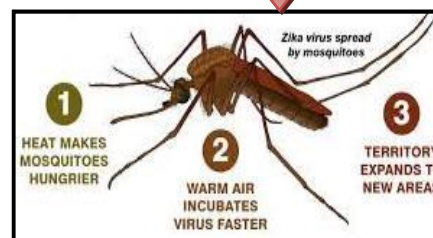
### INTRODUCTION

The rise in the average temperature of earth has been described as global warming which is mainly attributed to the increasing phenomenon of the greenhouse effect. It is believed that global warming can have several harmful effects on human health, both directly and indirectly. Since malaria is greatly influenced by climatic conditions because of its direct relationship with the mosquito population, it is widely assumed that its incidence is likely to increase in a future warmer world.(1)

Diseases transmitted by mosquitoes includes Malaria, Dengue, Chikunguniya, yellow fever, filariasis, Japanese encephalitis etc. remains a major source of death world wide. Malaria is the most commonest and major parasitic infections of Public Health interest in the globe.It still remains the principal cause of morbidity and mortality globally. (2)



### Rise in Mosquitoes





### Mosquito Repellent Tools Used Mainly Contribute Air Pollution



Fogging

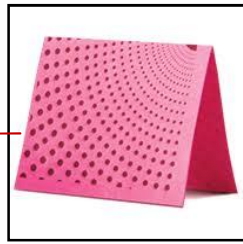


Liquidator



Insence Sticks

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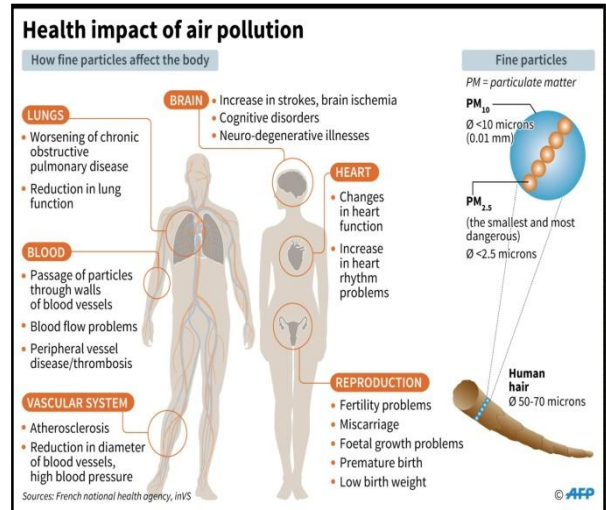
Cards



Mats



Coil



Topical insect repellent is commonly used throughout the world. Active ingredients typically include N,N-diethyl-meta-toluamide (DEET) or picaridin. Reactions to topical repellents have ranged from contact dermatitis to urticaria. Exposure to DEET can produce contact urticaria. Mosquito coils burn for about 8hr without flame and kill or repel mosquitoes. Although they are recommended for outdoor use, or for use in semi-enclosed portions and porches, coils are often used overnight in sleeping quarters.<sup>(3)</sup>

As a result peoples are exposed to a chemically complex mosquito-coil smoke containing small particles (< 1 µm), metal fumes, and vapors that may reach the alveolar region of the lung.

Burning of one mosquito coil would release the same amount of particulate matter (PM) 2.5 mass as burning 75-137 cigarettes; the emission of formaldehyde from burning one coil can be as high as that released from burning 51 cigarettes.

DEET is also a persistent environmental contaminant that breaks down slowly in soil. A recent U.S. Geological Survey report on water contaminants listed DEET as one of the compounds most frequently found in the nation's streams.<sup>(3,4,5)</sup>

*Chemicals used could harm humans in long run, say doctors Many are unaware of harmful effects*

CHENNAI: From conventional mosquito nets to coils, mats, creams, sprays, liquid-vaporisers and electric devices, the mosquito repellents market has no shortage of products.

But are they safe? Though consumers know about the products, many are unaware of the harmful effects of these products. V.S. Raghunathan, owner of Aesthetics, a store that sells repellent incense sticks, asks: "How can something that repels mosquitoes be good for human beings?"



Respiratory physician Jayashree Narasimhan says she advises patients to use topical repellents or cover windows with nets. "Smoke-based repellents can trigger wheezing attacks though it is hard to say if they cause the problem," she says. She does not advise the use of aerosol sprays, lest they trigger nose allergies or wheezing. However, doctors note chemicals such as pyrethrum used in most repellents could harm humans in the long run. R. Kulandai Kasthuri, director, Institute of Child Health, says animal studies show nervous weakness as a major side effect. "We have no studies to indicate the harmful effects of repellents. However, we see that repellents aggravate asthma and other allergic manifestations in people, particularly children.

**ABSTRACT 838: MOSQUITO REPELLENT LIQUIDIZER POISONING IN YOUNG CHILDREN IN SUMMER- WHAT TO ANTICIPATE?**

838

**MOSQUITO REPELLENT LIQUIDIZER POISONING IN YOUNG CHILDREN IN SUMMER- WHAT TO ANTICIPATE?**

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**Background and aims:** Mosquito repellent liquidizers contain synthetic pyrethroids that produce neurological toxicity on accidental ingestion. Recently, these are emerging as a source of hydrocarbon poisoning. **Aims:** To describe the demographic & clinical profiles of children presenting with mosquito-repellant ingestion during Jan-Dec 2013. **Methods:** Descriptive data from children presenting to pediatric emergency were collected and analysed. Informed consent obtained. **Results:** All 5 cases presented during Indian summer (May-July). There was male preponderance (100% boys). All children belonged to urban families of higher socio-economic status; at least one of all parents is a professional. All ingestions occurred during the night hours when the apparatus was 'in-use'. Cough and rapid breathing were present in all five at admission. All five children had respiratory complaints while none had any neurological manifestations. Four out of five required PICU care in view of significant respiratory distress. Seventy five percentage of the patients required nasal prongs CPAP support for a mean duration of 14±6 hours. Chest X ray had bilateral infiltrates in 3 (60%) cases. No secondary pneumonia observed. None required mechanical ventilation. All five remained asymptomatic on follow-up.

	Age (months)	PRISM III*	PICU stay (hours)	Baseline P:F ratio*	Time to onset of symptoms (in minutes)
MEAN ± SD	21.6 ± 1.1	11.8 ± 0.7	52 ± 15	190 ± 12	9 ± 3

**Conclusions:** Mosquito repellent liquidizers are emerging as the 'new hydrocarbon' in urban households. Steps at community level are required to prevent growing incidence. Increasing awareness of physicians regarding the natural course of this entity is important.

associated with indoor air are significantly higher than outdoor air. But unfortunately indoor air pollution has not been given much importance. The mosquito repellents, used in most of houses, are the great source of indoor air pollution. Mosquito repellants coil. Study revealed that smoke generated from one mosquito repellent coil is equivalent to those of 100 cigarettes.

**INDOOR AIR POLLUTION FROM MOSQUITO REPELLENTS**

Use of mosquito repellent is of the significant and consistent cause of indoor air pollution in homes. Different types of mosquito repellents are used- they can be in solid form or liquid. Both pollute our environment. When the liquid repellent sprayed in the room, the toxic chemicals present in it mix with the air and spread in the entire room. These chemicals are toxic and harm not only mosquitoes but also humans. These chemicals have great affect on eyes, dermal and brain cells. Spray causes neuron to die in the regions of the brain that control movement of muscle, learning, memory, and concentration.

An example of solid mosquito repellent is mosquito coil, which is extremely hazardous and effect to human health. Burning mosquito coils generates lot of smoke that controls mosquitoes effectively. However, this smoke contains various pollutants. It has been found in study that smoke emitted from one mosquito coil is equivalent to those of 100 cigarettes. This smoke can cause various health problems. It can affect eyes, throats, nose, kidney and lungs. It is causing head ache, irritation, damage to brain, memory loss and other respiratory problems. But common man is still unaware of this impact of indoor air pollution on humans.

We are using mosquito repellents in our home and are habitual of such kind of indoor pollution. This is working as slow poison to our health and causing various effects. (8,9,10)

**ARTICLES RELATED TO SIDE EFFECTS OF MOSQUITO REPELLENTS (6,7)**

Air pollution can be defined as the presence of foreign matter in the air in excessive amount, that adversely affects the well being of the individual or causes damage to property. These foreign matters are of various natures like organic, inorganic, chemicals and heavy metals etc. There are different types of air pollution which may be a health threat inside the home just as threat outside the home. Studies indicate that levels of pollutants



To stop air pollution Ecofriendly Mosquito Repellent is need of hour. Green Chemistry in Mosquito Repellency will help in stoping air pollution .It will utilise waste in best form which will reduce ,recyle and reuse so as to reduce environmental pollution.

The processing industry creates a large amount of waste by-product in the form of peel, seeds, rag (the membranes between the citrus segments), and pulp (juice sacs), representing ca. 50–60 % of the whole fruit being dis-carded after juicing, for example. Citrus-processing waste (CPW) poses severe environmental problemsas its high carbohydrate content is highly fermentable, leading to rapid degradation and methane production when this type of waste is not managed appropriately . Citrus peel waste is also rich in soluble sugars (glucose, fructose, sucrose), and together with its high moisture content, it is prone to quickbacterial contamination Overall, waste treatment represents a significant cost, and waste is often misjudged regarding its value. Transformation of waste into value-added products would allow compa-nies to cut treatment costs, generate some profits, and improve their competitiveness. Moreover, therecovery and valorization process of by-products is becoming a necessity as part of the existing sus-tainable development and environmental protection required by legislation and by the consumer .

Residues obtained from citrus processing can yield: dried pulp and molasses, fiber, pectin, dietaryfibers, cold-pressed essential oil, essences, D-limonene, juice pulp, pulp wash, ethanol, seed oil,limonoids, and flavonoids (hesperidin, narirutin, naringin, eritrocin). They are used in the production of human food and food supplements, as a fermentation substrate for single-cell protein production, as silage, and as mosquito repellent<sup>(11)</sup>



Green chemistry is need of hour



### PRINCIPLES OF GREEN CHEMISTRY

### WASTAGI



Green Chemistry

Green chemistry is a philosophy of chemical research and engineering that encourages the design of products and processes that minimize the use and generation of hazardous substances. The focus is on minimizing the hazard and maximizing the efficiency of any chemical choice.

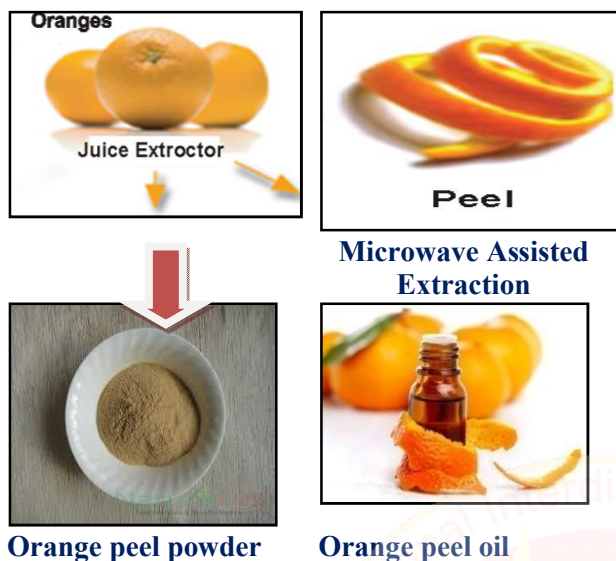
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Recycle

Reuse

Reduce

## RENEWABLE ORANGE PEEL LIFE CYCLE



The epicarp when dried it can be burnt in room to serve as mosquito repellent.

Orange Peel oil provides good promise for topical mosquito repellency as it mask the lactic acid odour and exhaled carbon dio oxide.<sup>(12,13)</sup>

### CONCLUSION

Ecofriendly Mosquito Repellent is need of hour which is an intervention in field of synthetic mosquito repellents which contributes adverse health effects as well as environmental Pollution.Green chemisty in Mosquito Repellency is useful as it involves reuse of waste of orange peel otherwise which is discarded.So it will give best use of waste

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### REFERENCES

1. SA Nabi<sup>1</sup>, SS Qader<sup>2,3</sup> (2009) Is Global Warming likely to cause an increased incidence of Malaria? *Libyan J Med.* 2009; 4(1): 18–22.
2. B.pattanayak, K.Dhal, (2013), Plants having mosquito repellent activity: an ethnobotanical survey, Department of biotechnology, FM. University Balasore, Odisha,
3. Shutty B<sup>1</sup>, Swender D, Chernin L, Tcheurekdjian H, Hostoffer R. Insect repellents and contact urticaria: differential response to DEET and picaridin. *Cutis.* 91(6):280-2.
4. Published by : Data Research Analyst, World of chemicals.com An unhealthy sleep - how safe are mosquito coils? Category : General Chemicals.
5. P.W. McRandle, (2003), The green take on insect repellents and sunscreens for the Green Guide and Molly Rauch on Share Tweet
6. The Hindu Article, (2007) Are mosquito repellents safe? 00:00 IST Updated: September 28, 2016 00:44 IST Share Article 3
7. L.G. Saptharishi<sup>1</sup>; N. Karthik<sup>1</sup>; A. Bansal<sup>1</sup>; S. Singhi,<sup>1</sup> (2014) *Pediatric Critical Care Medicine: Volume 15 - Issue 4 suppl - pp 187*
8. <https://www.researchgate.net> an insight into indoor air pollution – Research gate.
9. <http://www.ghanafilla.net/one-mosquito-repellant-coilequals-100- cigarettes/>
10. [http://www.quantumhealth.com/news/dangers\\_of\\_DEET.html](http://www.quantumhealth.com/news/dangers_of_DEET.html).
11. James H. Clark, Lucie A. Pfaltzgraff, Vitaliy L. Budarin, Andrew J. Hunt, Mark Gronnow, Avtar S. Matharu, Duncan J. Macquarrie, and James R. Sherwood (2013), From waste to wealth using green chemistry, Abstracts of the 7th World Congress on Pediatric Critical Care IUPAC Pure Appl. Chem., Vol. 85, No. 8, pp. 1625–1631.
12. E. Adewole, (2014), Phytochemical Constituents and proximate analysis of orange peel, *Journal of advanced Botany and Zoology*, Vol 6, Issue 3.
13. E. Effiom, O.E. Avoaja C.C Ohaeri; (2012), Mosquito repellent activity of Phytochemical extracts from peels of citrus fruit species ; *Global journal of Science frontier Research interdisciplinary* Vol. 12 Issue 1.