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DIGITIZATION, PLATFORMFOR EDUCATIONAL ENRICHMENT

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Abstract

Digital India is an initiative by government of India to help the country for time saving, decrease in documentation, economy improvement, decrease in corruption, and so many things. Digitisation may covers digital locker to help citizens of India to store their important documents, design frameworks& also digital signing on the documents. This real changes of digitization are visible to us all. The real changes of digitization are becoming visible today to all. Digitization also plays a concrete role in education speedily nowadays.

Introduction:

Information technology & blended learning has reformed each sector of education, it has grasped and it is currently in the promising phases of altering along with supportive academia. In the coming days its approach will be far changed, more immersive and hopefully more constructive to the student, staff & society. For the same digitization arises which is a process of converting the diverse forms of information, such as text, sound, image or voice into digitalized format. The digitization has a proven impact on economy and society by reducing unemployment, improving quality of life, and boosting access to knowledge for education and other public services.

Concept of Digitization:

Digitization is the trending term, describing the 21stcentury in the most precise manner as possibly considered. We are in the era where ideas are unfolding in our educational institute, industry and creating the advancement that can't be matched by lagging behind in terms of technology. In short, digitization is the integration of digital technologies into everyday life by the digitization of everything that can be digitized.

Why &How to Prefer Digitization: After the United States and China, India has been rated as the third largest internet consumer. As our country is a vast with much diversity in culture, language, heritage & so many things along with its educational System. The core existence of online education platforms is being possible with the internet. Most schools and colleges in India make use of the internet and they basically use it for conducting and quizzes or online exams may be for private or government sectors.

Digitization in education industry has totally changed the learning and also the teaching process to a very great extent. Various teachers are ready to accept the wave of digitization but more effort still need to be exercised when it comes to teacher training. Digitization is challenging job for higher education as never before. The digital revolution is edging its way into the classroom. As online education has been adapted by many universities, it has made approachable and shorten the distance between a students and their dreams. Online education is a type of distance learning where there is no need to attend the college or university in person.

Measuring Parameters of Digitization:

This is done by six attributes methods which are listed as,

a) Skill: The ability of users to incorporate digital services into their lives and businesses.

b) Ubiquity: The extent to which consumers and enterprises have universal access to digital services and applications.

c) Usability: The ease of use of digital services and the ability of local ecosystems to boost adoption of these services that is should be flexible.

d) Affordability: The extent to which digital services are priced in a range that makes them available to as many people as possible means in a mass quantity.

e) Reliability: The quality of available digital services.

f) Speed: The extent to which digital services can be accessed in short span of real time.

Effects of Digitization in Education:

The Digital India vision steady onset of government having a supportive effect on our lives. While digitisation also having the new era of efficiency, transparency and accountability, its launching in the field of education has brought about marvellous changes with a potential to radically alter the conventional landscape.

Digitization also changes Old Guru Shishya Relation parampara of 'knowledge transfer'. However, the digital media and the internet has ushered in a democracy of knowledge where education has become a collaborative, self-driven enterprise. Today many tools are available

to transform learning from an academic exercise to an engaging experience in imaginative and experiential learning.

Digitation in education covers the role of administrator, learner & teacher, extension, researcher &evaluator.

Different Educational Technologies Due to Digitalisation:

a) Digital Textbooks: Also called with other names like e-textbooks and e-texts. This digital text books provide an interactive interface in which the students have access to multimedia content such as videos, interactive presentations, and hyperlinks for referring latest changes in education.

b) Online Courses: This provide one kind of distance education to learn a new language or maybe to get trained in some specific course. Online courses are developed by experts who have unmatched proficiency in their specific field and can give you the experience of real-time learning by designing their own online course.

c) Animation: By offering a visual representation of the topic, students realise the captivating approach and grasp the concept in a more understandable manner. Even the toughest topics can be presented in a simplified way with the help of animation.

d) Online Examination: Digitization gave way to the online exam, making the examination process convenient for both teachers and student's nowadays most of universities; boards & private sectors adopt this methods.

e)Online Resources: Connecting Students with their Educators with a high increase in the student strength nowadays, pedagogy is being compromised. Because of online resources are being developed in a way that makes them always available to teachers to educate the mass quantity student's simultaneously. Which, in turn, improves the quality of education and connect the students with their educators.

Different Means of Digitization:

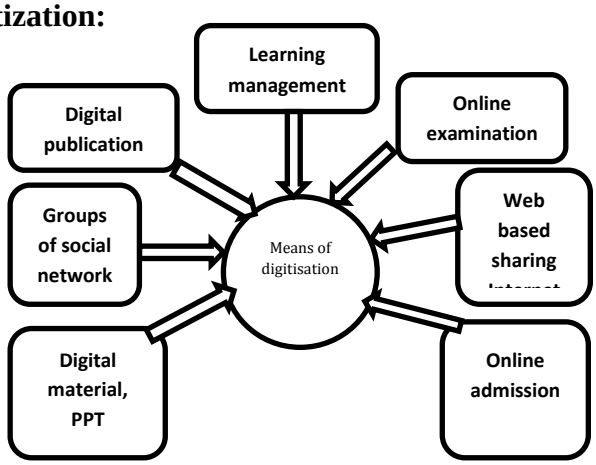

Fig-1

Benefits to Students Due to Digitization:

As students coming from various regions, schools and colleges which are finding ways to develop an integrated solution to meet the educational needs at all levels. By converting the whole of the educational system to digitization, the use of various techniques like online courses, online exams, digital textbooks, quizzes, and e-notes are improving the quality of education for the students.

Different Tools of Digitization:

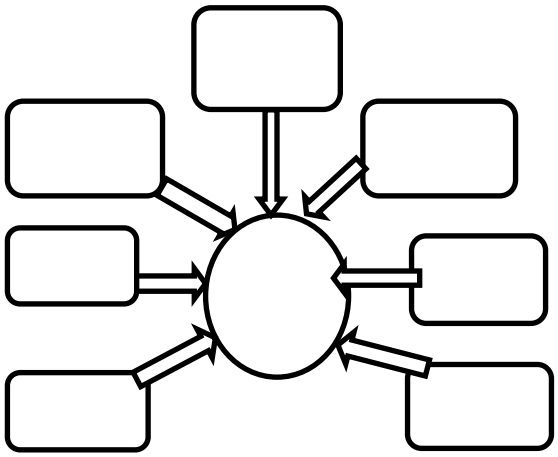

Fig-2

Administrative activitiesfor Digitization:(An Integral Part ofthe Education Industry)

With digital systems being prevalent in education we are experiencing different levels of ease in online education, but the administrative part is not off the table. Keeping the records of students and maintaining their attendance and roll number is a big task. So colleges and schools are adopting more hassle-free computerized methods and avoiding the old manual methods of maintaining the records.

Advantages Due to Digital Education:

a) It reaches and accessible to permeate to a much larger segment of the society which would alone enable the overstretched education system to keep pace with the growing needs and aspirations of society.

b) The 24x7 access to lessons and the self-taught construct allows students flexible learning times and pursue education alongside other commitments.

c) We can find the documents promptly& individually & can be printed directly from web.

d) Students may refer the saved staff references & notes in time &by answering frequently asked questions on the web.

e) Digital education also promotes minimizing infrastructure and maximizing outcomes, significantly reducing the costs of education and making it more affordable

f) Uniform content and learning packages eliminate vastly varying standards between good and better institutions. With hand held internet devices available with most students, the engagement with teachers would extend well beyond conventional school timings.

Conclusion:

Although, digitization is a time consuming and very expensive venture, but, it is a powerful way to cope up with the problems of persistent shortage of periodicals ,images, articles of newspapers , artifacts and other technical literature in institutions, universities and technological schools in the developing world.

Digitization has no doubt changed our education system, but we cannot say that it has diminished the value of our old time classroom learning. Walking hand in hand both act as a support system to each other, which gives a stronghold to our modern students. Digitisation along with education enables higher productivity across the economy, which leads to lower prices, higher real incomes to higher standards of living. It also facilitates the creation of new and better educational tools products and services with fewer resources, reduces physically demanding efforts.

Shortly digitization in education has also proved to be the right method for saving resources. Online examination platforms have restricted the frivolous usage of paper, directly confining the cutting down of trees. This way the digitization of education industry in the 21stcentury proves to be a boon to our society. Most of the studies pinpointed the importance of digitization.

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STUDY OF THE EFFECTIVENESS OF USING TECHNOLOGY BASED STRATEGIES ON STUDENTS LEARNING

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Abstract

The purpose of the study was to investigate the effect of using technology based strategies on students learning. The researcher selected total population 26 students of Final Year B.A.B.Ed Ashoka College of Education, Nashik. Technology based strategies were used for 15 days consisted of one complete unit of final year Present research study was done by Experimental method & one group Pretest & Post test design was used for collecting data. Pre test was given before using Technology based strategies & Post test was given after using technology based strategies. The gain scores were computed after post test for all the students. The mean of Pre test & the Mean of the Post test is which is greater than pre test means it differs significantly. So with the help of data analysis researcher has rejected null hypothesis which was there will be no significant difference between the scores of pre test & post test & there will be no significant effect of using technology based strategies on learning of students. The conclusion of the study was that the use of technology based strategies on learning of students proved significant & effective.

Introduction- A *technological revolution* is a period in which one or more *technologies* are replaced by another *technology* in a short amount of time. It is an era of accelerated *technological* progress characterized by new innovations whose rapid application causes an abrupt change in society. *Technological revolution* is a dramatic social change in important structures brought about relatively quickly by the introduction of some new *technology. Education sector is not exception for this revolution. Previous education system & nature of teaching & learning process is also reformed, the result of this is adaption of innovative teaching-learning strategies in classroom teaching & learning system. Use of technology methods makes teaching & learning more interesting & effective for students. It also makes teachers teaching easy & flexible.*

Statement of problem –

"Study of the effectiveness of technology based Strategies on students learning"

Objectives –

1) To find out the difference between pre test & post test scores.
2) To check the effectiveness of technology based strategies on students learning.

Operational definition –

1. Effectiveness-degree of technology based strategies which produced desired result.
2. Technology based Strategies – Use of Web Based Learning, Mobile learning, Video Conferencing Method in teaching.
3. Students -The students Final Year. B.A B.Ed students of Ashoka College of Education, Nashik.
4. Learning-Scores of ICT Subject after using technology based strategies.

Need & importance – The present research undertaken because using technology in the classroom would help prepare students for the digital future. These 21st-century skills are essential in order to be successful in this day and age. Jobs that may not have had a digital component in the past may have one now. Education isn't just about memorizing facts and vocabulary words; it's about solving complex problems and being to collaborate with others in the workforce. Educational-technology in the classroom prepares students for their future. Today's technology enables students to learn at their own pace. For example, almost all apps allow for individualized instruction. Students can learn according to their abilities and needs. This form of teaching is also great for the teacher because it gives him/her the time to work individually with students who may be struggling.

Research question:

Is there any significant effect of technology based strategies on students learning?

Hypothesis – Null hypothesis

1. There will be no significant difference between the scores of pre test & post test.

2. There will be no significant effect of technology based strategies on students learning.

Method adopted for the present study –

The researcher used experimental method for this present study.

Chosen sample & method –

Purposive sampling method used. The research investigation was carried out on the 26 students of Final Year B.A.B.ED of Ashoka College of Education, Wadala, Nasik.

Experimental design –

In the present research study the one group pre-test and post-test design used.

Scope-

1. This research covers 3 technology based strategies.

2. This research covers the data regarding final year B.A.B.Ed students of Ashoka College of Education.

Limitation-

1. Conclusions are only applicable to the selected sample.

2. The conclusions are only limited to year 2018-19.

Data Collection Tools-

The following tools were used for the purpose of data collection

1.Pre test before using technology based strategies.

2. Post test after technology based strategies.

Procedure

The experiment was conducted in two stages:

Stage-1: Selecting the experimental sample The experiment was conducted on 26 students of of Final Year B.A.B.ED of Ashoka College of Education,Wadala, Nasik

Stage-2: Execution of Program:

The research was conducted in following steps given below:

Step-I Administration of the pre-test.

Step2: Execution of technology based strategies-Use of Web Based Learning, Mobile learning, Video Conferencing Method in teaching.

Step -3: Administration of the Post test.

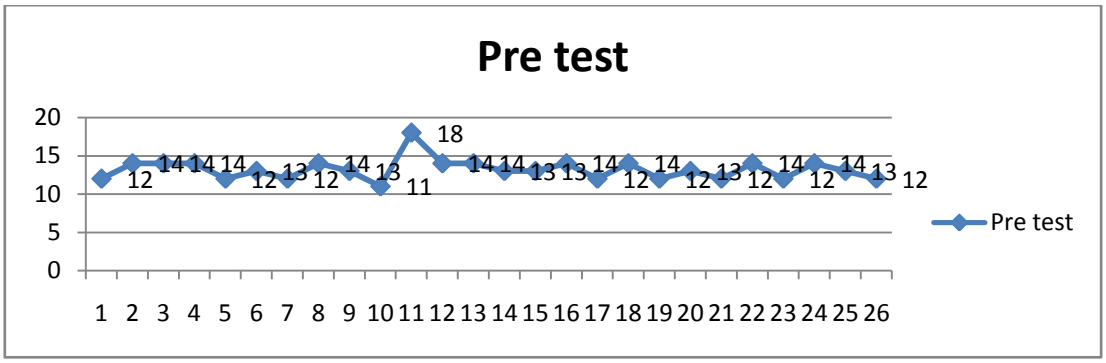
Data Analysis & Interpretation –

The mean, S.D. and 't' value for measuring difference between the means of the pre-test and post test

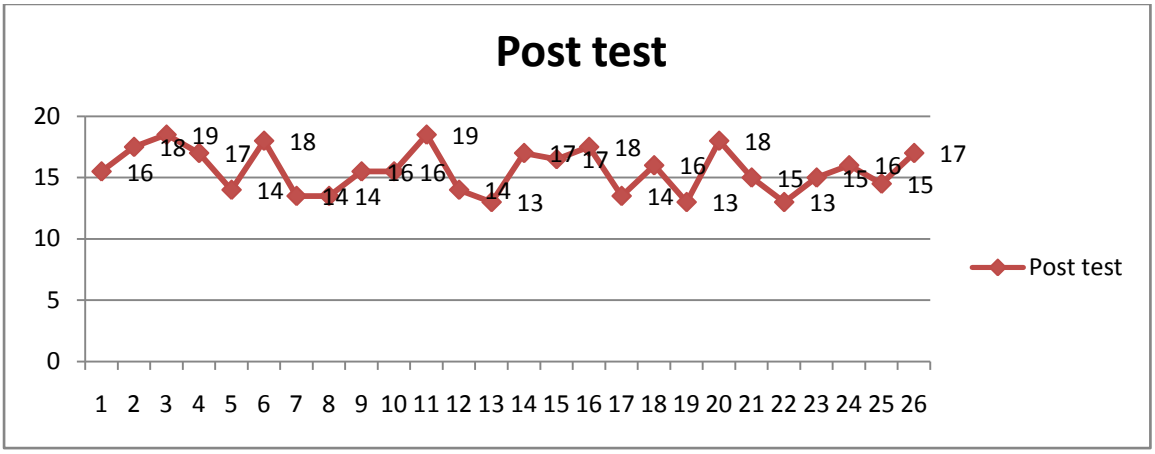
Table-I

Test	No. of student(N)	Mean	Standard deviation (S.D)	Computed 't' value	table 't'	Level of significance
Pre-test	26	13.19				
Post-test	26	15.84	0.479	5.63	2.02	0.05 level

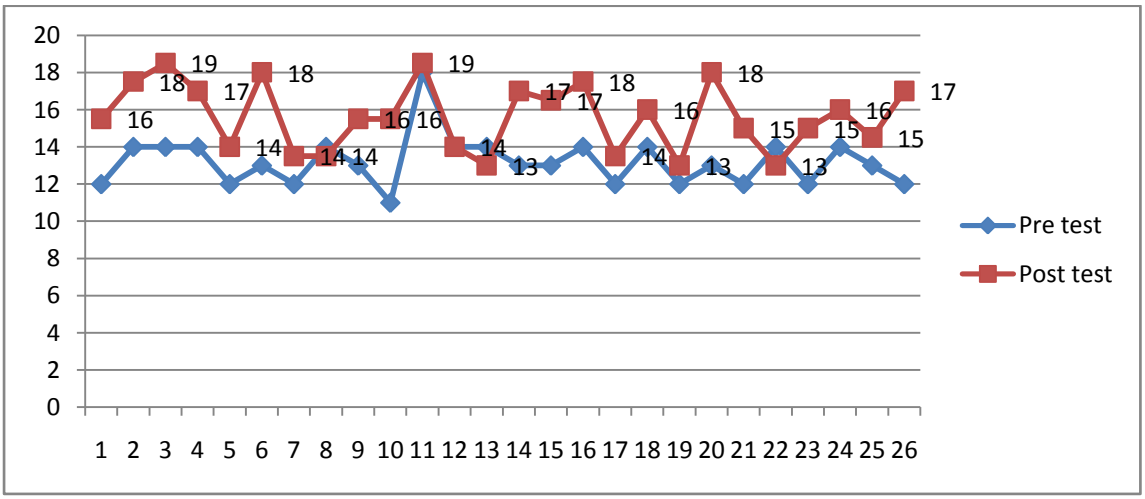
Graph 1 – Pre Test Scores



Graph2-Post Test Scores



Graph 3 – Showing difference in the Pre test & Post test.



Interpretation –

The above table revels that the computed‘t’ value was found to be significant at 0.05 level. It shows that using technology based strategies like Web Based Learning, Mobile learning, Video Conferencing was effective for increasing learning of students. Hence, it may be

inferred that the one group differed significantly in pre test scores and post test scores. In post test the scores are better than pre test as it shows superior mean gain scores.

With the help of above observation researcher has to reject null hypothesis & has accepted research hypothesis.

Findings-

The findings of the present investigation is the scores of Post test are higher that the Pretest. It shows that the learning of students after using technology based strategies like Web Based Learning, Mobile learning, Video Conferencing proved more significant & effective than the use of traditional teaching methods.

Conclusion-

The conclusion is that the use of technology based strategies like Web Based Learning, Mobile learning, Video Conferencing made students learning more interesting. They experienced practical exposure while learning with technology based strategies. Students learning was found to be superior and effective.

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ARTIFICIAL INTELLIGENCE- THE DIGITAL REVOLUTION

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Abstract

The present paper has threefold purpose. It examines the features of Artificial Intelligence, its application and how AI is making the Digital Revolution in present Era. The objective of this paper is to identify the positive changes and the challenges in coming years.

***Keywords**: Digital Revolution, Artificial Intelligence, Cognitive abilities*

Artificial Intelligence (AI):

Intelligence is a cognitive process. It gives humans the cognitive abilities to learn, form concepts, understand and reason including capacities to recognize, to comprehence ideas, solve problems and use language to communicate.

Artificial Intelligence is the branch of Computer Science which deals with intelligence of machines where an intelligent agent is a system that takes actions which maximize its chances of success. It is the study of ideas which enables computers to do the things that make people seem intelligent. In the first half of 20th century, science fiction familiarized the world with the concept of artificially intelligent robots. John Mccarthy (Standford Researcher) is one of the "founding fathers" of artificial intelligence together with Marvin Minsky, Allen Newell and Herbert A. Simon. Mccarthy coined the term "Artificial Intelligence" in 1995

AI is an approach to make a computer, a robot, or a product to think how smart human think…… And finally this study outputs intelligent software systems. The aim of AI is to improve computer function which is related to human knowledge i.e. reasoning, learning, problem solving.

How Does Artificial Intelligence Work

AI works by combining large amount of data with fast interactive processing and intelligent algorithms, allowing the software to learn automatically from patterns or features in the data. AI is the general field that covers everything that has anything to do with imbuing machines with 'Intelligence'

We are not always aware of it; artificial intelligence is a big part of our lives, having a major impact on how we live, and how we work. From customer service application to voice powered assistants such as Apple's Siri or Amezon's Alexa, there are several examples of AI and automation tools which are in use of daily life.

Natural Intelligence	**Artificial Intelligence**
1. Not consistence in every task	1.very consistence
2. Lack of multitasking skill	2. Multitasking
3. Errors may be found in the task	3. No errors
4. Takes own time	4.In a schedule time

Benefits of Artificial Intelligence

- In every sphere of life, AI is present. We use AI to organize big data into different patterns and structures. Also, patterns help in a neural network, machine learning, and data analytics.
- From 80's to now, Artificial intelligence is now part of our everyday lives; it's very hard to believe. Moreover, it is becoming more intelligent and accepted every day. Also, with lots of opportunities for business.

1. Higher quality work, improved reliability
2. Increased and consistent output
3. Gives deeper insights to the professionals about market trends.
4. It is useful in today's business environments including customer service, personalization.

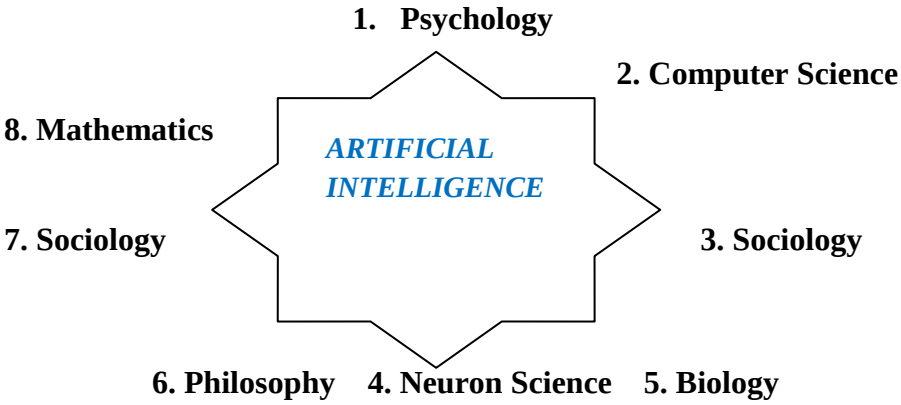
5. It can be used to solve challenges which organizations lack the resources to succeed.
6. Replace day to day low level cognitive tasks such as scheduling calendar invites, routinely ordering food. High level cognitive tasks, identifying connections, analyzing correlation, assessing conclusions.
7. Provide job opportunities.

- **Taking over dangerous jobs**
- In bomb defusing, robots are used to save thousands of lives. Basically, if we see technically they are drones. Although, they require human to control them. Over years, as technology improves, we need AI integration to help these machines.

Where do we stand now?

The next generation of technology is seeing exponential growth. The overall picture is blurry though, due to the extremes, we need to be navigating. According to reports, there are more than 200 AI-based start-ups in India. 160 million WhatsApp users, People of all ages became technosavy. Aadhaar is the world's largest biometric ID system.

SCOPE OF ARTIFICIAL INTELLIGENCE



1. Psychology is the study of mental processes and behavior of individuals. ... So **Artificial Psychology** for the purposes of this paper contains the **artificial** mental process considered necessary to create **intelligent**, autonomous, self-evolving, artificially cognitive systems.

2. In Artificial Intelligence programs are developed to perform specific task that is being utilized for a wide range of activities including medical diagnosis electronic trading robot control and remote sensing.
3. AI has been used to develop and advance numerous fields and industries including finance, healthcare, education, transportation and more.
4. Used in web search engines

5. In video games and toys
6. in Scientific Discovery.
7. in the field of education.

AI in the Field Of Education

1. There are number of companies that create robots to teach subjects to children ranging from biology to computer science, though such tools cannot become widespread yet. There has also been a rise of intelligent tutoring systems, or IT's, in higher education.
2. ITS called SHERLOCK teaches Air Force technicians to diagnose electrical systems problems in aircraft another example is DARPA
3. Defense Advanced Research Projects Agency, which used artificial Intelligence to develop a digital tutor to train its Navy, recruits in technical skills in a shorter amount of time.
4. In the coming years more classrooms will be utilizing technologies such as IT'S to complement teachers.
5. Advancements in natural language processing, combined with machine learning, have also enabled automatic grading of Assignments as well as a data driven understanding of individual student's learning needs. This led to in the popularity of MOOCs,(Massive Open Online Course) which allows students from around the world to take classes online. Data sets collected from these large scale online learning systems have also enabled learning analytics, which will be used to improve the quality of learning at scale.

AI helps to predict which students are at risk of failure and analyzes students' engagement.

(Ref. One Hundred year study on Artificial Intelligence AI 100)

UPCOMING CHANGES IN THE SOCIETY

According to **World Economic Forum Report 'The Future of Job' Dt.17/09/2018**,

As technological breakthroughs rapidly shift the frontier between the work performed by human and those performed by machines and algorithms, global labour market are undergoing major transformation. These transformations if managed wissely, could lead to a new age of good work, good jobs and improved quality of life for all but if managed poorly, there will be the risk of widening skills gaps, greater inequality.

India

India has taken a unique approach to its national AI strategy by focusing on how India can leverage AI not only for economic growth, but also for social inclusion. NITI Aayog, the

government think tank that wrote the report, calls this approach #AIforAll. The strategy, as a result, aims to (1) enhance and empower Indians with the skills to find quality jobs;

(2) Invest in research and sectors that can maximize economic growth *and* social impact; and

(3) Scale Indian-made AI solutions to the rest of the developing world.

Drivers of Change :

1. Ubiquitous High speed Internet
2. Artificial Intelligence
3. Widespread adoption of big data analytics

JOB OPPORTUNITIES PRESENT SCINARIO

- **Software analysts and developers.**
- **Computer scientists and computer engineers.**
- **Algorithm specialists.**
- **Research scientists and engineering consultants**.
- **Mechanical engineers and maintenance technicians.**
- **Manufacturing and electrical engineers.**
- **Surgical technicians working with robotic tools.**
- **Military and aviation electricians working with flight simulators, drones, and armaments.**

JOB OPPORTUNITIES IN FUTURE

1. Data detective or Data broker

In the present era of hyperconnectivity everyday there is the creation of 2.5 quntilayan bite data. According to the Cloud based American Business Operating Firm, (Domo), till the year 2020, situation may come that every person of the world will create 1.7M.B. Data in every second, there will be huge amount of data but it will become difficult to understand and get the required data. In this situation data detective or data broker will play an important role. He will analyse the prioties of the custmoers and also will do

Productive analysis.

2. Man-Machine collaboratoer

The role of Man-Machine collaboratoer will be Tagging, manufactoring, tracking equipments, writing software codes.

3. Cyber Security Specialist

Now a days every business organizationadopting the system based on digital and clouds. Day by day the problem of hacking is increasing so there is the need of cyber security specialist. According to Computer Emergencey Response Team (CERT), 2,200 Indian websites are hacked including 114 Government Portals during April 2017 to January 2018 In coming years cyber security specialist will be in a great demand.

Artificial Intelligence will be beneficial to work smartly, to reduce the hard work, for productive work and so on but at the same time it will bring many changes in the society. It is very necessary for the next generation to become ready to face and also to overcome the challenges. AI and machine learning can help IT security professionals to achieve cyber hygiene and enforce least privilege environments at scale.

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IMPACT OF DIGITALIZATION ON ADOLESCENCES EDUCATION

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Abstract

In the world of 21st century Creation of knowledge based society is the big task in front of education system. Teachers need to be highly skilled in all these areas to excel in their profession. Teaching is the Nobel profession for creating the future society. In this task role of teacher is very important. Adolescence are continuously using the modes of digitalization. Understanding of adolescence in society depends on information from various perspectives, including psychology, biology, history, sociology, education and anthropology. Within all of these perspectives, adolescence is viewed as a transitional period between childhood and adulthood, whose cultural purpose is the preparation of children for adult roles. It is a period of multiple transitions involving education, training, employment and unemployment, as well as transitions from one living circumstance to another. Present study is basically focused on impact of digitalization on Adolescence Education.

Keywords- *Digitalization & Adolescences Education*

Objectives of the paper

1) To explain the concept Digitalization
2) To explain need & importance of Digitalization
3) To Explain the relationship between digitalization &Adolescence Education

Concept of Digitalization

Digitalization is the process of converting information into a digital format, in which the information is organized into bits. The result is the representation of an object, image, sound, document or signal by generating a series of numbers that describe a discrete set of its points or samples. The result is called digital representation or, more specifically, a digital image, for the object, and digital form, for the signal. In modern practice, the digitized data is in the form of binary numbers, which facilitate computer processing and other operations, but, strictly speaking, digitizing simply means the conversion of analog source material into a numerical format; the decimal or any other number system that can be used instead.

Digitization is of crucial importance to data processing, storage and transmission, because it "allows information of all kinds in all formats to be carried with the same efficiency and also intermingled" Unlike analog data, which typically suffers some loss of quality each time it is copied or transmitted, digital data can, in theory, be propagated indefinitely with absolutely no degradation. This is why it is a favored way of preserving information for many organizations around the world.

Need & Importance of Digitalization in School Education

Most schools have access to technology. From computers to tablets, students are able to access high quality internet access for teaching and learning purposes. Today's connected classrooms provide both teachers and students easier, faster, and more affordable access to information, learning resources, experts, peers, and a wider community of educators.

Teachers and professors are using social media channels like Facebook to connect with other schools and individuals who can help them adapt their teaching practices to make the most of the digital tools. On the other hand, students are using digital technologies to connect with other students, not only in their country but across the globe, to engage in self-directed learning in areas of personal expertise and interest.

Digital learning is already happening. According to a recent survey, there are a number of notable statistics that show the digital learning revolution is in full swing:

- 52 percent of high school students are taking tests online
- 53 percent of 6-12th graders want to use their own mobile devices for school work
- 57 percent of middle-scholars say online classes provide them more control over their learning
- 3 out of 5 flipped classroom teachers believe online learning increases student confidence and motivation
- 77 percent of parents consider the effective use of technology as vital to their child's future
- 60 percent of district leaders report positive outcomes from digital content implementation.

The learners of today are different and digital learning is key to students' long-term success. There are a number of reasons why this may be the case. Check them out below and get your classroom in order for this new wave of education:

Personalization

Personalized learning is the goal of many countries such as The United Arab Emirates (UAE), South Korea, and Finland where governments have explicitly prioritized happiness. Apart from this, personalized learning helps schools to modernize teaching simply by adapting the learning pace and teaching method to student's needs, choices, and interests.

Classrooms that adopted personalized learning strategies for their students found that students made significant gains in reading and mathematics, the longer students experience personalized learning, the greater their achievement growth. Digital learning provides a new ability to provide educational experiences that are customized for each student.

Accessibility

Digital learning is appearing as the panacea for all sorts of problems that all the education sector. By embracing digital devices and connected learning, schools can not only connect to one another to boost learning or share insights, experience, and communications skills, but it also lets teachers enjoy a level playing field, where all types of schools have access to the same learning and opportunities.

Accessibility is vital for leveraging technology and providing educational opportunities for all students across the world, including those with disabilities and English language learners.

Efficiency

Digital assessments provide students fast feedback on their understanding, letting both students and instructors concentrate their efforts on where further understanding is most required. Adaptive hinting provides guidance to correct misperceptions, incorrect responses quickly and helps students to figure out issues real-time.

Also, fast assessment, visualizations, games, simulations, videos and annotation technology give a richer learning environment toward a fuller understanding of concepts.

Digital education allows teachers to reach more students by orders of magnitude than via on-campus courses. They can disseminate new concepts and ideas more quickly, and touch more people and impact more lives. Besides, digital learning allows educators to meld across the globe participants into campus teaching and creating global conversations, as a result richer teaching experiences. Digital learning empowers teachers to build courses using the best content previously developed by other educators.

Relationship between digitalization &Adolescence Education

Digitalization plays vital role in the age of adolescence stage. Students are more attracted towards various digital devices for learning new things.

Teachers of 21st century should take positive benefits of digital resources for enhancing various ability of students in the stage of adolescence. Following are the major role can be play by teacher with effective use of digital resources

Adolescence is a pivotal developmental period in which youth begin to form an enduring sense of personal identity and agency about themselves. Self-efficacy is a key belief underlying adolescents' motivation to act intentionally. Neither a trait, like global self-concept, nor an inborn drive for personal control, self-efficacy beliefs are sensitive to variations in the conditions and outcomes of actual performance. The empirical advantages of this contextually- linked measure of perceived capability is considered.

Role of the teacher in the era of digitalization for development of adolescence

Use of digital resources are making teacher stronger for playing various duties. Also teacher need to handled various responsibilities for all round development of adolescence in the era of digitalization

1. Adaptability

In this modern, digital age, teachers need to be flexible and be able to adapt to whatever is thrown their way. New technologies are developed every day that can change the way students learn, and the way teachers teach. Likewise, administrators are changing and updating expectations and learning standards. Being able to adapt is a skill that every modern teacher must have. If it's being able to adapt to the way students learn, the behavior their classroom exhibits, or their lesson plans, it is a definitely a trait that is a must-have.

2. Confidence

Every teacher needs to have confidence, not only in themselves but in their students and their colleagues. A confident person inspires others to be confident, and a teacher's confidence can help influence students to be a better person.

3. Communication

Being able to communicate with not only your students but with parents and staff is an essential skill. Think about it: Almost all of a teacher's day is spent communicating with students and colleagues so it is crucial to be able to talk clear and concise in order to get your point across.

4. Team Player

Part of being a teacher is being able to work together as part of a team or a group. When you work together as a team, it provides students with a better chance to learn and have fun. Networking with other teachers (even virtually) and solving problems together will only lead to success. Doing so fosters a sense of community not only in your own classroom, but school-wide as well.

5. Continuous Learner

Teaching is a lifelong learning process. There is always something to learn when you are teacher. The world is always changing, along with the curriculum and educational technology, so it's up to you, the teacher, to keep up with it. A teacher who is always willing to go that extra mile to learn will always be an effective, successful teacher.

6. Leadership

An effective teacher is a mentor and knows how to guide her students in the right direction. She leads by example and is a good role model. She encourages students and leads them to a place of success.

7. Innovative

A modern teacher is willing to try new things, from new educational apps to teaching skills and electronic devices. Being innovative means not only trying new things, but questioning your students, making real-world connections and cultivating a creative mindset. It's getting your students to take risks and having students learn to collaborate.

8. Ability to Manage Online Reputation

This 21stcentury, modern teaching skill is definitely a new one. In this digital age most, if not all, teachers are online, which means they have an "Online reputation." Modern teachers need to know how to manage their online reputation and which social networks are OK for them to be on. LinkedIn is a professional social network to connect with colleagues, but Snap chat or any other social networking site where students visit, is probably not a good idea.

9. Ability to Engage

Modern teachers know how to find engaging resources. In this digital age, it is essential to find materials and resources for students that will keep them interested. This means keeping up to date on new learning technologies and apps, and browsing the web and connecting to fellow teachers. Anyway that you can engage students and keep things interesting is a must.

10. Understanding of Technology

Technology is growing at a rapid pace. In the past five years alone we have seen huge advancements and we will continue to see it grow. While it may be hard to keep up with it, it is something that all modern teachers need to do. Not only do you just need to understand the latest in technology, but you must also know which digital tools are right for your students. It's a process that may take time but will be greatly influential in the success of your students.

11. Know When to Unplug

Modern teachers know when it's time to unplug from social media and just relax. They also understand that the teacher burnout rate is high, so it's even more critical for them to take the time to slow down and take a moment for themselves. They also know when it's time to tell their students to unplug and slow down. They give their students time each day for a brain break and let them kick their heels up and unwind.

12. Ability to Empower

Teachers inspire, that's just one of the qualities that come along with the title. Modern educators have the ability to empower students to think critically, be innovative, creative, adaptable, passionate, and flexible. They empower them to be able to solve problems, self-direct, self-reflect, and lead. They give them the tools both digital and knowledgeable to succeed, not only in school but in life.

Conclusion

Use of digital resources are very effective for making skill development of Adolescence. In this age basically students are totally attracted towards the digital resources so it is the responsibility of teacher to take positive benefits of it & make Lerner engage for learning new skill day by day.

Teacher can think that if we would like to do the students centric teaching that time digital resources are very benefited in the age of adolescence education. Digital devices are responsible to develop knowledge, understanding & application ability of child in adolescence age. 21st century is only demanding teacher's effort & positive mind set of learner for making learning process healthier.

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INFLUENCE OF DIGITAL CLASSROOMS IN TEACHING INDUSTRIAL CHEMISTRY

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Abstract

This paper reports the experience of using digital classroom based learning conducted in chemistry department for undergraduate students under faculty of science. Third year undergraduate were taken into consideration for students' perceiving the observation, understanding of basics of chemistry relating to day today life. The branch "Industrial Chemistry" unit was taught using lecture based method in which different mode of teaching employed as questionnaire, quiz, posters, activity based and digital learning. It was observed that 80 percent students agreed that digital classroom was most effective in mentoring collaborative learning strategy. The students found the digital learning most helpful for achieving learning outcomes. The results were also very remarkable for teacher who is open to use digital learning methods. This branch of Chemistry includes study of many industries having different raw materials, processes, yield, purification, thermodynamics and catalyst usages. Moreover side-products in the reaction, side effects of harmful chemicals are also studied deeply. Along with this different case studies can be considered if a production unit. All these aspects require an imagination, practical training, alternative methods are to be discussed with the students. Then there will be creatively new ideas and critical thinking develops about the process. Reasoning, justification and implementation of new ideas develop. For this learning content of industrial chemistry content is delivered from internet, audio and video, images, animated videos, live working in industries video, their problems solutions are successfully discussed in the presence of teacher. These methodologies help in connecting maximum number of students in conceptual learning, critical thinking and creativity in ideas. This paper gives an idea about usage of digital classroom connecting maximum students in learning process and also its defects of digital classroom.

***Keywords**: digitalisation, Industrial Chemistry, conceptual learning, critical thinking, reasoning, creativity.*

1. Introduction

In the present day of education it was suggested that chemistry subject is not only taught to the so the student for their academic career in chemistry but also it helps them to become informed citizens in society (Ware 2001)[1]. Industrial Chemistry is an important subject in Bachelor of Science since it plays an important role and connects student with industries and life. It develops students' way of thinking and scientific attitude. This gained scientific way of thinking is used by the student in day today life.

This teaching method connects a student with the industrial world and present resources. The Indian classroom was once characterized by students sitting through hour-long teacher monologues. Now a day's up gradation in the technology is making life easier for both students and teachers. Schools and colleges are increasingly adopting digital teaching solutions to engage with a generation of pupils well-versed with the likes of PlayStations and iPads, and trying to make the classroom environment more inclusive and participatory.

Kempa (1983)[2] , for example, suggested that future developments of teaching and learning chemistry (as well as the development of learning materials) should include the following interrelated six dimensions:

The concept of industrial chemistry makes the following aspects clear:

- The chemistry involved in the industrial processes.
- The technological manifestations of industrial chemistry.
- Scope of Industrial Chemistry as an individual subject.
- The societal implications of industrial chemistry.

Teachers should be provided with tools (teaching materials and the act of giving knowledge) that will help them not only in coping with the subject matter, but also in decision-making regarding the instructions of teaching and learning science. In this paper it is suggested that(and demonstrate) that development and implementation of industrial chemistry learning materials and its related imparting knowledge in teaching chemistry are an important component in our attempt to attain these goals in the area of teaching and learning industrial chemistry.

2. DIFFERENT TEACHING METHODS AND TECHNIQUES IN TEACHING:

2.1 LECTURE METHOD:

Lecture is a classic instructional method where most obvious shortcoming is the lack of interactivity and the difficulty to capture continuous attention of the learners (Wessels et al., 2007; Edwards et al 2001)[3] . Despite the shortcomings; lecture is still a very common approach in teaching. Over past decade, the shortcomings have been improved with various innovative methods as audio- visual technology.

2.2 POSTER METHOD:

Poster is often used to convey some specific knowledge; this instructional method requires a great deal of self-motivation to learn. It was revealed in a study that audience with higher age group and higher education qualification would be more responsive to poster (Saha et al.

2005)[4] Various teaching methods and techniques are used in chemistry teaching to facilitate students' learning and understanding several chemistry topics. Recently, because of tendency towards student centred teaching approaches teachers are requested to employ those teaching methods and techniques that are consistent with these approaches. Students are active participants of their learning and teacher role is mainly that of facilitator in student centered teaching approaches. A key advantage of this approach is that students are exposed to academic knowledge and skill simultaneously where connection can be made to the content encouraging higher order thinking (Demirci, et al. 2010)[5]

2.3 TEACHING WITH CASE STUDIES

Knowledge of various case studies is helpful in imparting the knowledge of industrial chemistry. There are many ways in which discussing case studies is very helpful as:

- Knowledge of Lab safety is given by using fire safety videos, handling acids, handling toxic chemical etc.
- Big disasters in the world can be taken as a case study which gives practical experience about the post disaster. This opens the path of precautions in perfect way and accountability amongst the students.
- Hands on experiences of different case studies by experts in industries.
- Responsibility can be generated among students regarding resources like water, air, fossil fuel , soil, etc

All these aspects are successfully given with the help of digital classroom methods it gives a very high impact on the student's understanding, scientific observation, scientific attitude and creativity among the students.

2.4 TEACHING DURING INDUSTRIAL VISITS

It helps the student to come close to the industries. A student applies the acquired knowledge and finds the chemistry behind the formation of product in the industries. All reasons of using the applied processes in the making of product .This knowledge gained by the student will retain with them forever. There is a constraint that conducting multiple visits is not possible and the time, money required is more. These aspects are more approachable through the digital teaching methology.

3. RESULTS AND DISCUSSION

Comparison between digital classroom and traditional method of Teachings comes out to be:

3.1 Benefits of with digital classroom in teaching Industrial Chemistry

This method leads to more and deep learning. Effective relation developed between students and teacher and also between students with themselves. They can share their views, experiences and investigations. This method is effective for all students especially for student with low learning speed and even for those with high learning speed. Traditional classrooms were place and time bound but asynchronous digital class has no limitation in time and place. On the contrary, in traditional class source of knowledge and learning was only teacher but now it is beyond the teacher, beyond the school and even beyond the country. The other benefit of digital classroom is that in this method education is open and flexible which gives an opportunity for deep learning. The process of learning in traditional class was: listen, remember, synthesize and interpret the acquired knowledge but with digital tools it will be effective because there is a chance to repeat, practice and fail. In digital classroom, efficiency increases since students attention is 100% on learning rather than on his notes and spellings. Students at various universities can swap their notes in a fraction of time, and share their knowledge and experience with each other.

3.2 Defects of digital classroom in teaching Industrial Chemistry

Critics viewed digital classroom as cold and impersonal, and cannot replicate the experience of a real classroom. The other defect is that it almost certainly requires more student initiative than traditional classroom learning. Because in a virtual classroom, teachers are less likely to notice when students daydream or slack off. It can be difficult to manage student classroom behaviour: During class sessions, it may be hard for the instructor to maintain the attention and participation of the students in the class. If only the instructor is present during the meeting, it is easy for students to become distracted by other things and not pay attention. It is probably this fact that leads to this belief that e-learning is less effective than traditional classroom learning. The other defect is that, flexibility doesn't necessarily mean better student performance: Though it is nice for students to work at their own pace, it doesn't necessarily mean that flexibility will facilitative skill or knowledge acquisition. Its other defect is that, web-based learning requires relatively sophisticated technology and knowledge. This may be beyond the scope of some individuals, though it probably is not an issue for a school or organization of any size. One disadvantage of this type of learning is that learners need to have access to a computer as well as the Internet. They also need to have computer skills with programs such as word processing, Internet browsers, and e-mail. Without these skills and software it is not possible for the learner to succeed in eLearning. Learners in this method

need to be very comfortable using a computer. Slow Internet connections or older computers may make accessing course materials difficult. This may cause the learners to get frustrated and give up. Another disadvantage of asynchronous learning is managing computer files, software comfort ability and learning new software. For learners with beginner-level computer skills it can sometimes seem complex to keep their computer files organized. The lesson points you to download a file which the learner does and later cannot find the file. The file is downloaded to the folder the computer automatically opens to rather than a folder chosen by the learner. This file may be lost or misplaced to the learner without good computer organizational skills. Building a powerful digital classroom needs to powerful management on students, teachers, lessons and so on. Teachers have critical role on course contents, leadership of student to finial objects and so on. And the last but not the least is that some restriction exists for information transmission.

3. Conclusion

A well-designed module to teach industrial chemistry from a societal context can have the following impact. Through presenting industrial chemistry, as the useful science.

- Make industrial chemistry knowledge accessible to a broader range of students.
- Increases interest among students' in the course.
- Extend the path of teachers to integrate the industrial methods with the learning of day today life of student.
- Result in students staying longer in the science pipeline.
- Through green chemistry, convince students majoring in other sciences that chemistry is both an intellectually exciting and ethically responsible career choice.
- Greater emphasis on industrial chemistry.

We live in an era in which chemistry should be presented to the student not only as a body of knowledge, but also as a vehicle for presenting the technological manifestations of chemistry and its influence on the students' personal life and the society in which he/she lives. The need for relevance in chemistry education has always been clearly recognized even if its realization has been elusive. The different industrial chemistry learning materials as well as instructional techniques developed in Israel in the context of high-school chemistry have attempted to place greater emphasis on applied chemistry (teaching chemistry in its context) and on its socio-economic and environmental consequences.

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IMPACT OF DIGITIZATION OF HIGHER EDUCATION

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Technology can become the 'wings' that will allow the educational world to fly farther and faster than ever before; if we will allow it." - Jenny Arledge

Abstract

We are running into the 21st century where technology knows no bounds. This is the phase of radical development where technology is taking over everywhere. Smartphone's, laptops, and tablets are no more unknown words. During this phase the education system is evolving for the sake of betterment. . Our old educational system lacks the capability to stand a chance in the 21st century. So we are compelled to use digitization in our educational system. Digital education means digital learning. Digital education includes the combination of modern technology & electronic gazettes it is possible in schools, colleges in all other fields. Digitization gives an online platform for learning that converts normal classroom as a digital classroom & makes learning easy. Lots of examples for students are available on internet.

Keywords *– Digitization, Higher Education, Education, learning*

Introduction

Education is very important in overall development of individuals & hence contributes immensely to the overall development of nation. Education globally is one of the important sectors to witness revolutionary changes in recent times. Higher education cannot remain isolated from these changes. The modes of teaching in higher education have drastically changed in last 15-20 years. Abundant information on any subject is available on such sources as "Youtube", "Google", "Wikipedia", "Facebook", "Whatsapp" etc. The only constant is change & mankind is in a period of rapid technologically driven change. So Digitization of higher education was a part of this change. Digitization means a platform that includes electronic tools, electronic gazettes & resources that are used to produce data, store them &processes it.

"*Digitization is the integration of digital technologies into everyday life by the digitization of everything that can be digitized*."

Digitization of Higher Education

The traditional education system was based on old guru shishya parampara - which established a clear teacher taught relationship. Today there are tools available to transform learning from an academic exercise to an engaging experience in creative and experimental learning. Digital age will positively impact on all forms of higher education, it cannot take the place the teacher which is important to the social, moral and emotional development of the child.

Unique ways of learning

- Collaborative learning
- Digital content can be accessed from e- library
- Assessment of project
- Reporting progress online
- Smartphone Video Projects
- Skype A Speaker Into The Classroom
- Field Trip Without Leaving The Classroom
- Create A Classroom Podcast
- Get An Interactive Whiteboard
- Blended games with virtual learning

Advantages of Digitization

- Digital education is modern technology that facilitates learning through game & fun.
- Digital education also promotes minimizing infrastructure and maximizing outcomes, significantly reducing the costs of education and making it more affordable.
- It is useful for increasing student concentration & information retention as well as their ability to do their own research & work in teams.
- It is useful to make students pay more attention to subjects.
- Useful to develop language skills
- From recorded sessions absent students can learn the concepts.
- It is user-friendly platform, where the student can access their courses very well from anywhere.
- The students can use exclusive online study modules of various subjects, which help in enhancing their knowledge even without a teacher

Advanced Trends of Digital Education:

- **Digital textbooks**

  Digital textbooks, e-textbooks and e-texts provide an interactive interface in which the students have access to multimedia content such as videos, interactive presentations, and hyperlinks.

- **Online courses**

Online distant learning programmes gives a great opportunity to avail high quality learning with the help of internet connectivity. Online courses are developed by experts who have unmatched proficiency in their specific field and can give you the experience of real-time learning by designing their own online course. For Online Course everyone can access education no matter the location. Meanwhile, it is easier to accept it at home. This makes people feel comfortable. Speaking of comfort, online courses help to avoid long classes and uncomfortable classrooms. You can learn about anything and whatever you like with the help of online course. You can save time and cut the cost of commuting from home to the campus. Online learning will help to enhance knowledge and skills. The greatest advantage of online learning is that it's to a great degree adaptable. You can think about whenever, from anyplace and at a pace you like.

- **Online exams**

Digitization gave way to the online exam, making the examination process convenient for both teachers and students.

- **Animation**

This is a captivating approach in which students learn in a better manner. By offering a visual representation of the topic, students grasp the concept in a more understandable manner. Even the toughest topics can be presented in a simplified way with the help of animation.

- **Accumulation Of Students On The Same Platform**

With students coming in from various regions, schools and colleges are finding ways to develop an integrated solution to meet the educational needs of all students. By converting the whole of the educational system to digitization, the use of various techniques like online courses, online exams, digital textbooks, quizzes, and e-notes are improving the quality of education for the students.

- **Online Resources: Connecting Students with Their Educators**

With a high increase in the student population in recent times, pedagogy is being compromised. Because of that, online resources are being developed in a way that makes

them always available to teachers to educate the masses. This, in turn, improves the quality of education and increases the number of literate students.

- **Internet: Making Digitization Possible**

After the United States and China, India has been rated as the third largest internet consumer. The core existence of online education platforms is being possible with the internet. Most schools and colleges in India make use of the internet and they basically use it for conducting online exams and quizzes.

- **Administrative Activities: An Integral Part of the Education Industry**

With digital systems being prevalent in education we are experiencing different levels of ease in online education, but the administrative part is not off the table. Keeping the records of students and maintaining their attendance and roll number is a big headache, that too when the students are outnumbering the administrative heads. So colleges and schools are adopting more hassle-free computerized methods and avoiding the old manual methods of maintaining the records.

Challenges of Digital Education

- Poor internet connectivity in urban area**.**
- A major issue in digital education in rural area is the lack of knowledge & skilful teachers, formally trained on digital technology.
- In urban areas maintenance & up gradation of digital equipment is one of the major challenges.
- Language is one of the main barriers for the development of Digital Education because in different states different languages are spoken.
- Insufficient funds & Infrastructure

Role of Teacher

Modern teachers will need to reinvent themselves by embracing technology and constantly evolving to remain ahead of the knowledge curve. They will have to reach out to their students and play catalysts for converting information into knowledge. Application of academic concepts in real life situations, ensuring universal assimilation and creating a healthy and conducive learning environment will be challenges that newer technologies can never overcome. A student-centered approach is more likely a teaching methodology and instructional activities involving students in doing things and thinking about what they are doing. The learner-centered instruction attempts to engage students in activities that support

knowledge constructions through media use, but which are not designed to control learning. Students are involved in more than listening.

The modern education needs demand teachers not only to accept technology but to also harness it in an innovative manner. Both conventional and digital systems have their unique strengths and true progress will invariably come from constructive and collaborative approach. Teaching in the digital age is increasingly challenging. The teacher not only has to acquaint and harness modern aids, but also has to infuse age old and time tested virtues of social, physical and mental well-being in an increasingly cluttered and a highly competitive environment.

Conclusion

Digitization has no doubt changed our education system, but we cannot say that it has diminished the value of our old time classroom learning. The best part about the digitization of education in the 21st century is that it is combined with the aspects of both; classroom learning and online learning methods. Walking hand in hand both acts as a support system to each other, this gives a stronghold to our modern students. Digitization in higher education has also proved to be the right method for saving resources. Online examination platforms have restricted the usage of paper, directly confining the cutting down of trees. This way the digitization of education industry in the 21st century proves to be a boon to our society.

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AN ASSESSMENT OF PERCEPTION OF PRIMARY AND SECONDARY SCHOOL TEACHERS OF NASIK ON USE OF SOCIAL PLATFORMS IN TEACHING – LEARNING

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Abstract

In the age of increasing e-interactions, teachers need remold themselves to be able to shape the future netizens. This paper tries to throw light on preparedness of teachers and students for using social platform for improved teaching and learning. Questionnaires were distributed to school teachers to assess the extent to which the teachers use social platform for content enrichment. The findings demonstrate the ***perception of primary and secondary school teachers of Nasik on use of social platforms in teaching – learning***

Keywords: *social media, education, teachers, content enrichment,*

Introduction

"The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn and relearn." – Alvin Toffler

The visionary writer has aptly mentioned the idea of being literate in the age of social networking. Technology is booming rapidly from year to year, and the younger generations are the ones caught in this rapid change. They are learning, unlearning and relearning very happily without any exams but **'what'** is the question.

Social Media: The World of Networking

Here's a quick look at the user statistics of a few social media platforms, which only prove the growing popularity of these websites.

- Facebook—1.6 billion
- YouTube—Billion-plus visitors
- WhatsApp—950 million
- Google plus—440 million
- Instagram—430 million
- LinkedIn—420 million
- Twitter—230 million

- ResearchGate—9 million

The platform is all about community-based input, contact, content-sharing, and alliance. This interactive medium has a multitude of interesting things like forums, micro-blogging, social networking, social bookmarking, wikis and podcasts.

Social media is an emerging trend in education as it is very easy for personalized use. Pearson, a leading group in publications as put to use this very platform for use in education. '… It is non-centralized in both form and content, it is user created, user controlled, flexible, democratic and transparent.' – Pearson Review

Collaborative learning can be greatly achieved using social media as it has greatly influenced lives of young generation. MOOCs and online media are using this feature effectively. Coursera, Edx, Futurelearn are some of the leading providers offering courses in the magnitude of thousands!

Are our teachers ready to shape the gen-next? Can we teach them how to use the boon in disguise wisely?

Here is an attempt to find out where our teachers stand in this.

The teacher's discussed in this research paper are school teachers. A few of the platforms they use are Facebook, YouTube, Google, WhatsApp, Instagram and many others that will be discussed in thefindings of this research. The teachers are the individuals that will lead our world in the future, they mustbe enriched with knowledge to be able to impact this world and make India a better country on the road to success. Therefore,research must be conducted about the different things they are exposed to in order to enrich their teaching. All these questions will be answered through this research paper.

2. Literature review:

Title:A model of using social media for collaborative learning to enhance learners' performance on learning

Researcher: Waleed Mugahed Al-Rahmi *, Akram M. Zeki

Abstract:

Social media has been always described as the channel through which knowledge is transmitted between communities and learners. This social media has been utilized by colleges in a way to encourage collaborative learning and social interaction. This study explores the use of social media in the process of collaborative learning through learning Quran and Hadith. Through this investigation, different factors enhancing collaborative learning in learning Quran and Hadith in the context of using social media are going to be

examined. 340 respondents participated in this study. The structural equation modeling (SEM) was used to analyze the data obtained. Upon analysis and structural model validities, the study resulted in a model used for measuring the influences of the different variables. The study reported direct and indirect significant impacts of these variables on collaborative learning through the use of social media which might lead to a better performance by learners.

3. Research methods:

The sample consists of 65 primary and secondary school teachers in Nasik city.They were given a 15-point questionnaire.

The data obtained was analyzed for following points:

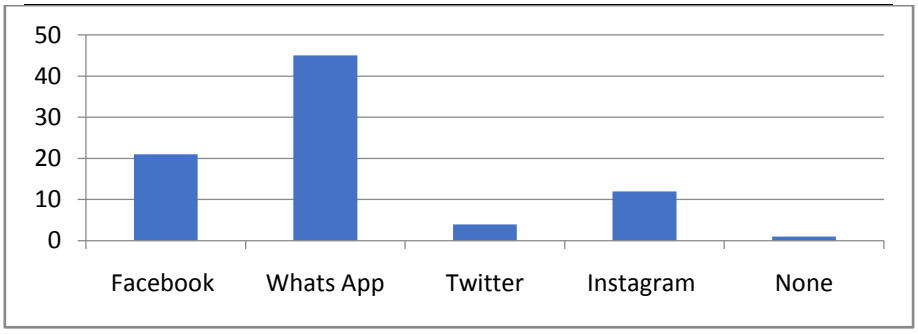
1. Extent of use of social media by teachers for content enrichment
2. Encouragement given by teachers to students for using social media
3. Teacher student interaction using social media
4. Teachers' overall perception

4. Observations:

Following are the observations based on the questions asked.

Q 1. Mark the social media that you use

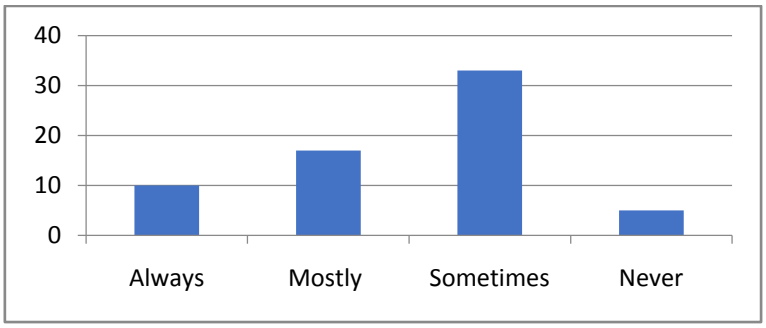
	Facebook	Whats App	Twitter	Instagram	None
Response	21	45	4	12	1
%	32.31	69.23	6.15	18.46	1.54



69.23% teachers use WhatsApp, while 32.31% teachers use Facebook.Approximately half of the WhatsApp users among teachers use Facebook and few use Twitter, Instagram

Q 2. Do you receive/share media related to topics that you teach?

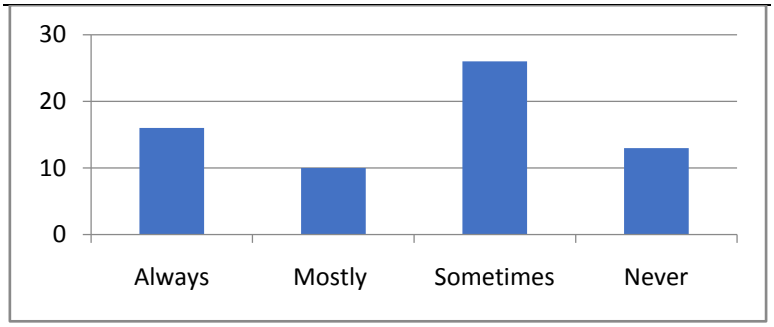
	Always	Mostly	Sometimes	Never
Response	10	17	33	5
%	15.38	26.15	50.77	7.69



Half of the teachers find media shared on social platform sometimes useful for their own content enrichment.

Q 3. Do you share the stories from social media with the children in your class?

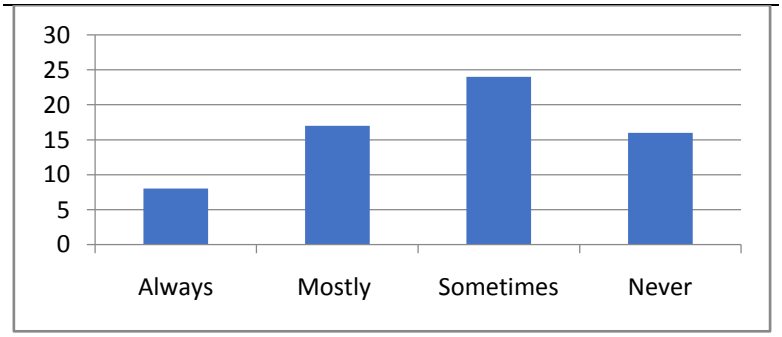
	Always	Mostly	Sometimes	Never
Response	16	10	26	13
%	24.62	15.38	40.00	20.00



40 % teachers share stories sometimes. 40 % teachers share more frequently.

Q 4. Do you allow your students to share the stories from social media in your class?

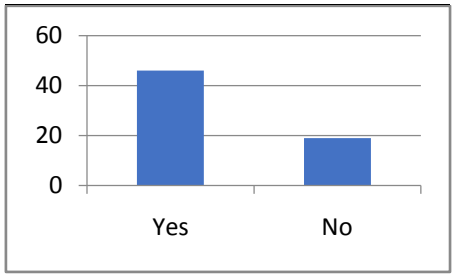
	Always	Mostly	Sometimes	Never
Response	8	17	24	16
%	12.31	26.15	36.92	24.62



36.92% teachers sometimes allow students to share something new that they have seen on social platform

Q 5. Have you noticed that some of your minor students have accounts on social platforms?

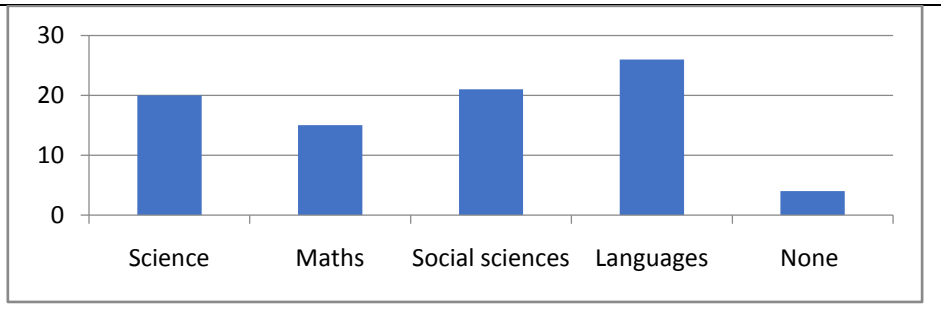
	Yes	No
Response	46	19
%	70.77	29.23



70.77 % teachers have found their under agestudents using social platform

Q 6. For which of the following subjects do you find social platform useful?

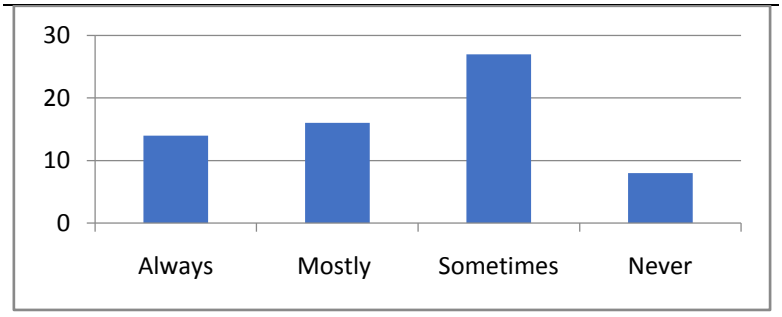
	Science	Maths	Social sciences	Languages	None
Response	20	15	21	26	4
%	30.77	23.08	32.31	40.00	6.15



Teachers find social platform the most useful for languages, followed by social sciences.

Q 7. Do you use inputs from TV, radio and newspaper while teaching?

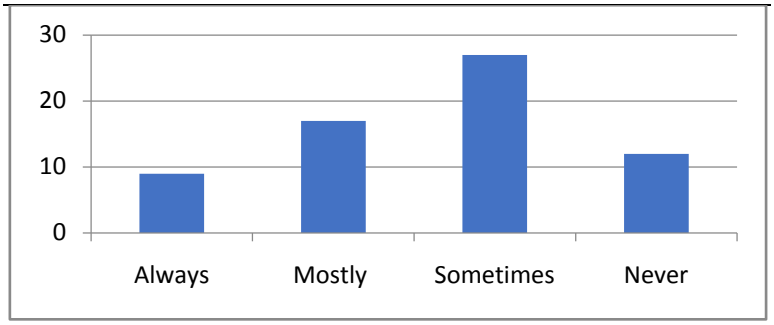
	Always	Mostly	Sometimes	Never
Response	14	16	27	8
%	21.54	24.62	41.54	12.31



41.54% teachers use these sources sometimes.

Q 8. Do you compile cuttings from newspaper in a file for use in classroom?

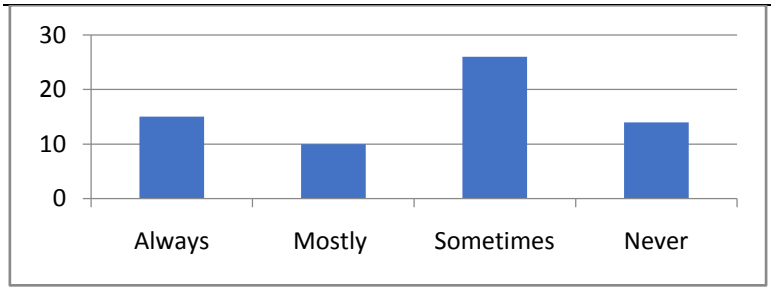
	Always	Mostly	Sometimes	Never
Response	9	17	27	12
%	13.85	26.15	41.54	18.46



41.54% teachers file the cuttings from newspaper for use in class during teaching.

Q 9. Do you save the media shared on social platform in your documents?

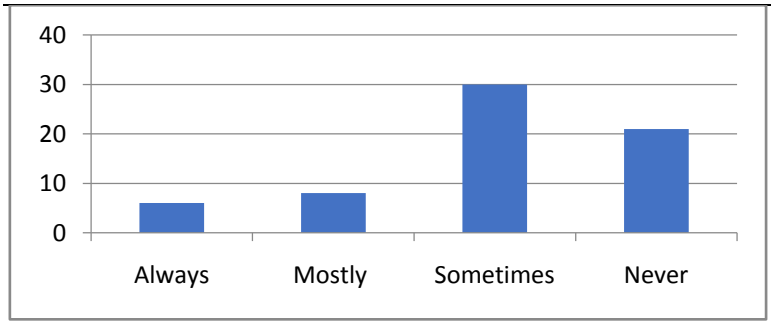
	Always	Mostly	Sometimes	Never
Response	15	10	26	14
%	23.08	15.38	40.00	21.54



40% teachers save the content in their files for showing them to students in their class

Q 10. Do you give assignments to your students based on social media?

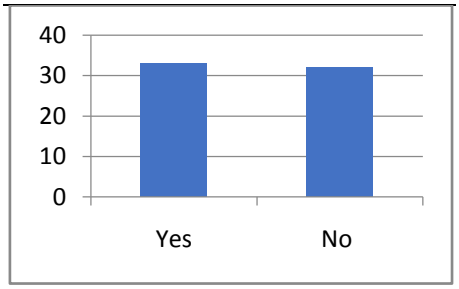
	Always	Mostly	Sometimes	Never
Response	6	8	30	21
%	9.23	12.31	46.15	32.31



46.15 % teachers give some assignments based on social media.

Q 11. Do you encourage your students to use social platforms for preparation of content for competitive exams?

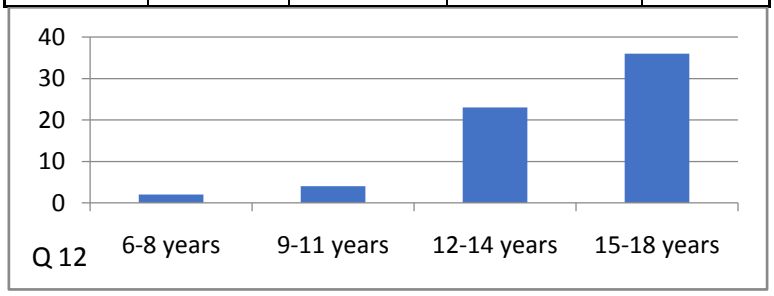
	Yes	No
Response	33	32
%	50.77	49.23



Half of the number of teachers encourages students to use social media for preparation of competitive exams.

Q 12. According to you, which age group of students should be exposed to social platform for content enrichment?

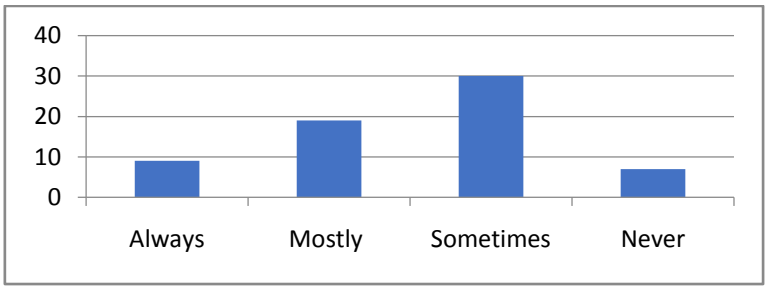
	6-8 years	9-11 years	12-14 years	15-18 years
Response	2	4	23	36
%	3.08	6.15	35.38	55.38



Teachers generally think that children should not be exposed to social media purposefully below a certain age as they will get carried away. 35.38% believe that children can be exposed to media by age 12 and 55.38% teachers believe they should not be exposed before age 15 years.

Q 13. According to your experience as a teacher, do the parents also encourage their ward to use social media for content enrichment?

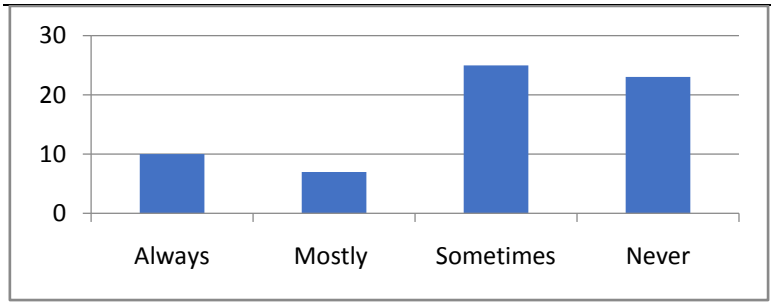
	Always	Mostly	Sometimes	Never
Response	9	19	30	7
%	13.85	29.23	46.15	10.77



46.15% teachers have noticed that parents encourage the children to use social media.

Q 14. Do you interact personally with your students on social platform?

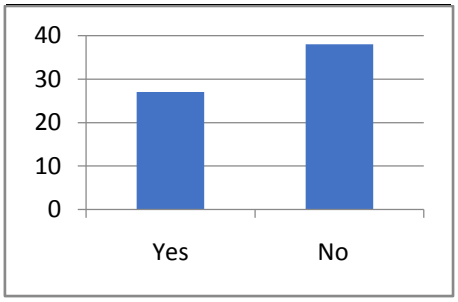
	Always	**Mostly**	**Sometimes**	**Never**
Response	10	7	25	23
%	15.38	10.77	38.46	35.38



38.46% teachers communicate with their students sometimes on social platform.

Q 15. Do you find something negative in using social platform in teaching?

	Yes	**No**
Response	27	38
%	41.54	58.46



58.46% teachers think that social media poses many ill effects

Teacher's perception about negative and positive effects of social platform

There's no doubt that students are actively engaged in online communities, but what kind of effects are these sites having and how can parents counteract the bad and bolster the positive?

- **The Negative**

1. Students search for quick answers on media, which can affect their cognitive abilities. Students don't even take efforts on memorizing the content and practicing the application.
2. Not only children but adults also get addicted to social platform and internet in general that they end up wasting a lot of time.
3. Some teachers strongly believe that social media should not at all be used for content enrichment. It is good only for communication
4. The veracity of stories on social media is in a great doubt. Many users just share it because they are fascinated but hardly attempt to verify the content.
5. Children and adults equally are thus exposed to unnecessary junk and advertisements. Children cannot distinguish between the good and the bad.
6. With all the effects being discussed these days, parents are worried and they question children. As a result many children tend to be even more secretive and hide their identity.
7. Parents often get misguided by how finely the child is using computer, mobile, internet and social media. They conclude that the child can be a software engineer!

5. Conclusion:

The teachers are a representation of the society. They are exposed to the social platform like every other individual. They are fascinated by the amusing content shared on social platform and like to share that with their students. However teachers also are worried about the veracity of the content. The similarity of number of teachers saving the newspaper clippings and media from social platform indicates that teachers are not overwhelmed by the social media but are keen to give their students the best by selecting the apt input. Teachers themselves should first develop skills to verify the content and also follow Do's and Don'ts on social platform and educate students about them.

The varying degree of responses to the questions indicates the personal interest of teachers according to their age prominently.

To conclude, we should admit that this will be the major point of influence in days to come and we can't keep the young generation away from it. We should however train them to filter and select what is right for them without getting carried away.

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ROLE OF EDUCATION IN BRIDGING THE TECHNOLOGY GAP

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Abstract

This paper reports on a education role to bringing the technology gap because of education we handled this technology and its used teachers and learners in the teaching. Additionally, the relationship between the educational uses of technology and the overall educational patterns of interactions between education and technology. Moreover, the results indicated differences in technology usage in some different patterns of educational interaction in each learning activity. Conclusion is because of education effective bridge between the education and technology, its education that fill up the technology gap.

Introduction:

The era of 21st century is often regarded as an era of technology. So Technology, today play an important role in our life. An economy which is poor in technology can never grow in today's scenario. This is because technology makes our work much easier and less consuming. The impact of technology can be felt in every possible field one such field is education. It's because of education we see the lots of use of technology. It's education which today we handle the technology successfully.

We see how class teaching seems to change in the era of digital media. Today we face a different environment for information and communication technology. Technology increases the flexibility of delivery of education so that learners can access knowledge anytime and form anywhere. It can influence the way students are taught and how they learn now the process are learner driven and not by teachers with the help of technology learning as well as to improve the quality of teaching and learning. The most vital contributions of technology in the field of education is easy access to learning with the help of technology students can now browse through e-books. Sample examination papers, previous years papers etc.

Recent advances into information and communication technology have been revolutionary in nature which has affected entire human activities. The field of education is not untouched. Internet and www have revolutionized the education system wide use of audio-visual aids in education. It's because of education. Its educations impact that its fill up the technology gap. Now a days because of education we used technology in teaching and learning with the help of education we totally know technology and its uses, that's why teaching and learning make easier. The recording of lecture or presentation may use any combination of the following tools.

Microphone, camera, screen capture, presentation capture. Document camera and many of technology use in teaching learning that is – LCD Projector, Smart Board, Flipped classroom teaching, Computer, Television, Overhead Projector, Internet. Because of education we use this technology and reach to technology and get knowledge about technology, used this technology in teaching and learning.

The following are the aims and Objectives of ICT implementation in Education :

1) To promote equal opportunities to obtain Education and information.
2) To implement the principle of life-long learning education.
3) To promote technology literacy of all citizen especially for students.
4) To promote the culture of learning at school.

Education & Technology: Active Knowledge Creation

The factor that distinguishes the 21st century from the past is the powerful impact that technology is making in almost every sphere of contemporary life, like an unstoppable tsunami, it totally transforms any landscape it decides to visit.

Traditional education replied heavily on students retaining facts with in their long term memory but with emergency cloud technology, obligation to remember individual and corporate how has become less important than active knowledge creation, the activity of producing unique knowledge through collaborations and information gather.

The technology gap in education although technology has brought learning to life for many students who would be otherwise less than enthusiastic learners. It also preparing challenges unique to this generation of teachers. It is so important that teachers and students work together to bridge the technology gap that exits between them.

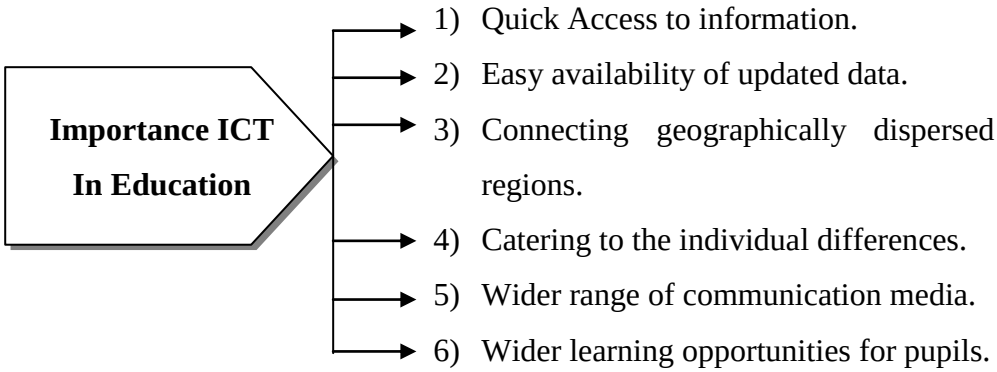
Technological development like projection digital cameras, software, computers power point presentations, 3D visualization tools all there are became great sources for

teachers to help students grasp a learn concept easily. It has to be understood that visual explanation of concepts make learning fun and enjoyable for students.

Importance of ICT in Education:

Because of education its possible to fill up the gap between ICT and education, that's why process of education became easier with the help of ICT.

ICT encompasses all those gadgets that deal with the processing of information for better and effective communication. In education communicative process takes place between teachers, students, management and administrative which requires plenty of idea in the desired format.



Areas in which technology has Influenced Education :

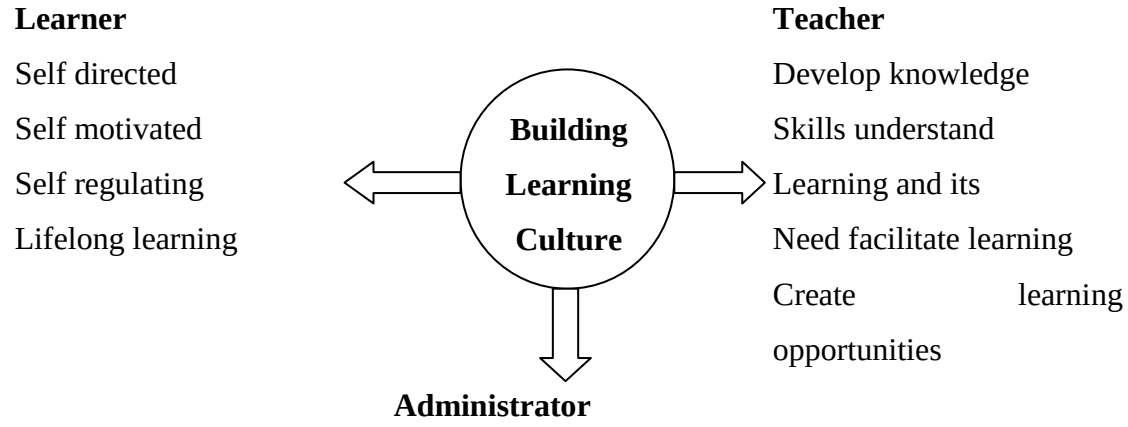
1) Curriculum and development
2) Revolutionary change in teaching and learning methodology and practices.
3) Shift in emphasis from teaching to learning
4) Media application in education and the development of media taxonomy.
5) Quantitative and qualitative expansion of education.
6) Emphasis on non-formal education and special education systems.
7) New assessment criteria and procedures.
8) Emphasis and research, continued evaluation and recycling process in education.
9) New role and position of teachers and increasing emphasis on in service training of teaching.
10) Appearance of resource libraries and teachers centers.
11) Application of economic considers and cost-effective criterion in education.
12) Use of ET in the field of lifelong and continuing education.

With the help of education we use wide range of ICT in teaching and learning and outcomes in following statements:

1) In education ICT impacts positively on educational performance in primary schools.
2) Use of ICT improves attainment levels of school children.
3) There is a positive association between the length of time of ICT use and students performance.
4) Schools with higher levels of immaturity demonstrate a more rapid increase in performs courses than those with lower levels.
5) Schools with good ICT resources achieve better results than those are poorly equipped.
6) ICT investment impact on educational standards most when there is fertile ground in schools for making efficient use of it.
7) Teachers are become more and more convinced that the educational achievements of pupils improve through the use.
8) Academically strong students benefit more from ICT use, but ICT also serves weak students.
9) A very high percentage of teachers state that pupils are more motivated and attentive when computers and the internet are use in class.
10) ICT has a strong motivational effect and positive affects on behavior, communication and process skills.
11) Pupils state that they do assignments more their own way when using a computer and their parents consider that they solve assignments more at their own level.
12) Teacher use ICT to plan lesson more efficiently and are effectively. ICT increases efficiency in planning and preparation of work due to more collaborative approach between teachers.

Now the utilization of modern machines and gadgets in the field of education to increase the rate of learning to develop the learners interest for effective learning. Educational technology plans various roles, educational technology can be conceived as a science of techniques and methods by which educational goals could be realized.

Building a Learning Culture



Technology can play a traditional role i.e. as delivery vehicles for instructional lessons or in a constructivist way as partners in their learning process.

In a constructivist way technology helps the learner build more personal interpretations or life in his world. Technology is a learning tool to learn with not from, It makes the learner gather think analyze. Meaning with what technology, presents proper implementation of technology in the classroom gives students more control of their own learning and trends to move classroom from teacher dominated environments to ones that are more learner centered.

The technology Gap in Education

There is no doubt it, in todays academic world a very noticeable gap exists between the technology and education. Technology features are being used in their lesson plans and the level of technological savy most students have. It is so important that teachers and students work together to bridge the technology gap that exists between them. Teacher using the latest technology in the classroom generate additional students interest and also pique the interest of students who are disengaged in school. Student interest also increases the level and amount of student engagement in opening the door to greater learning experiences and opportunities.

Technology has a place in the education to everyone from the very earliest learner to adults. But for it to be used most effectively, the gap between teachers and students and the gap among teachers themselves must be closed. Through student led classes quest speakers and professional development days dedicated to technology literacy as well as a bigger

emphasis on technology applications for the classroom in education colleges the gap can effectively be closed in the near future. It is an education consultant who provides quality resources for the school community and each field.

Across the globe more than two billion of us have access to the internet with five billion owning or having access to a mobile phone. |Children an growing up in a world where social media, mobile, technology and online communities are fundamental to the way that they communicate learn develop.

Increasingly, technology is being seen as a power but tool for development and change, where it is currently supporting the battle to achieve youth focused targets in global education, livelihood and health. The combination of education and technology has been considered the main key to human progress. Education Reads technology in technology has potential to be a huge force for good as it will undoubtedly play an increasingly important part in millions of young people lives across the world. So today we use technology widely only because of education.

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IMPACT OF DIGITIZATION ON EDUCATION

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Abstract

This study was conducted to investigate the effect of digitization on education. It is about the sweeping changes that digitization has brought in the field of education. In the 21st century, the integration of technology within the education sector can fundamentally transform how learning is received and delivered. Technology in the digital era has created a new level of personalized learning. The purposive sampling technique was used to gather data of 30 teachers. Data was collected via questionnaire. The data was analyzed and interpreted. Research findings revealed that teachers are ready to use the different digitalized apps. New technology also allows students to advance at their own pace as they learn.

***Keywords**:-digitization, technology*

Introduction:

"Technology can become the 'wings' that will allow the educational world to fly farther and faster than ever before; if we will allow it." - Jenny Arledge

We are running into the 21st century where technology knows no bounds. This is the phase of radical development where technology is taking over every niche and corner. Smartphones, laptops, and tablets are no more unknown words. During this phase the education system is evolving for the sake of betterment, as this generation's students are not born to be confined by the limits of simple learning; their curiosity is vast and cannot be catered with educational systems that were designed earlier. If we kept on teaching our children the way we taught them yesterday, we would deprive them of their tomorrow. Our old educational system lacks the capability to stand a chance in the 21st century. So we are compelled to use digitization in our educational system.

Digitization is prompting higher education as never before. Nothing is unavoidable and we have the supremacy to form the way we use technologies. The digital revolution is edging its way into the classroom. It is now possible to have archive in every classroom or even in the

pocket. As Google Chief Eric Schmidt has said, ' the internet isn't making inevitable change faster, it has become the engine of change'.

In a digital world where the technological landscape continues to change, impacting the way business is done and how people communicate, the need for quality education is ever more critical for our younger generation, who need the right skills and knowledge to meet the demands of a constantly changing environment.

Rote learning is a characteristic of a bygone era. Pedagogical methods today demand an emphasis on critical thinking, creativity and innovation. That requires modifying education curriculums and emphasizing skills of a new economy, where the technology continues to disrupt the traditional way of doing business and changes the demands of the job market. These are the prerequisites of a knowledge economy and intrinsic to making our nation more competitive. With the backing of our wise leadership, which since the union of this nation has placed an emphasis on education as a strategic imperative, we at the Abu Dhabi Education Council and Ministry of Education have worked diligently to ensure our education system evolves congruently with the digital age, also known as the Fourth Industrial Revolution. As ever, teachers play a pivotal role on this journey. They are not only role models for the youth but integral architects who help redefine the education system and equip students with the skills required by a knowledge-based economy. We recognize that learning no longer revolves around the ability to just read, write and perform arithmetic. In the advent of the digital age, drivers of change such as artificial intelligence, robotics, nanotechnology and 3-D printing have a resounding impact on the evolution of education, the demographics of the business landscape and the skills required to meet the demands of the future.

Meaning of Digitization

"*Digitization is the integration of digital technologies into everyday life by the digitization of everything that can be digitized*."

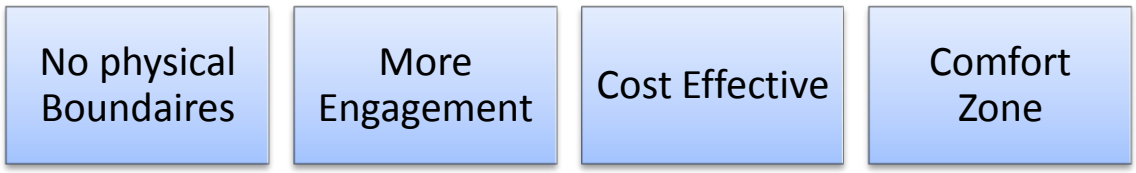
Yes! Digitization is the trending term, describing the 21st century in the most precise manner as possible. We are in the era where unprecedented ideas are unfolding in our education industry and creating the advancement that can't be matched by lagging behind in terms of technology. Computer-assisted instruction in the classroom is that the computer can serve as a tutor. Teachers can only help students in the learning process to a certain level and only during school hours. Computers and other similar forms of digital technology allow the student to continue their studies at home and can act as a tutor for the students who are falling behind. Another advantage of new technology (such as the smart board, electronic readers,

handheld dictionaries, ipads, etc.) information can be presented in such a large variety of ways (visually, orally, differently sized fonts, different colors etc.) that almost any type of learner can benefit and learn through the new technologies.

The internet and other forms of technology give students access to a huge wealth of knowledge that previously was not as accessible to students. Efficiency is a huge benefit from having technology in the classrooms. Teachers and students alike can quickly access vast amounts of information and present in through a variety of mediums.

Another benefit that people argue is that technology, especially the internet, allows for equality within education. The information and the technology that students use are available for everyone, they just have to go get it. Of course, this is referring more to the use of the internet because certain educational technologies are too expensive for less fortunate people to afford access to.)

Advantages of Digital education



"***The beauty is in finding the right balance between online and in-class learning, and the best way to make progress is to experiment with different combinations**,"*

No Physical boundaries

Digital learning has no restrictions. In case of face to face learning the location limits the group of learners to those who have the ability to participate in the area. But this is not the case in digital learning.

More Engagement

Digitization is more engaging experience as compared to traditional learning. Through digital learning a course can be designed in a way that makes it interactive and fun through the use of multimedia.

Cost Effective

Digital learning is cost effective way of education as compared to traditional learning.This is directed towards both teachers and students. In digital learning here is a good chance that you don't have to pay exorbitant amounts of money to acquire textbooks for school or college.

Comfort zone

Comfort zone can be established in digital learning as you can study at the time that suits you. In case of traditional learning where all the students have to be present in the class when the teacher is teaching. The same is not the case in digital learning**.**

Objectives:-

To study the impact of digitization on education.

Research Methodology:-

Purposive sampling technique will be used for which 30 teachers will solve the questionnaire.

Findings:

The questionnaire was distributed to the teachers and analyzed. The following things were recorded which showed the effectiveness of using digital tools in the teaching-learning process.

Level of acceptance of using digitalized tools:-

Sr. No.	Criteria	Yes	No
1.	I prefer to use digital apps in teaching-learning process.	100%	-
2.	I know how to use the different digital tools.	97%	3%
3.	Using digital tools helps me in my professional development.	98%	2%
4.	I want to do enrichment activities in leisure time.	98.2%	1.8%
5.	It will save my time.	98%	2%

a. Extra marks:

Extra marks includes various tools like animations, videos and virtual labs to make teaching easy and engaging. It follows a comprehensive method of learning, practice and test for deep immersive learning. It includes virtual lab too. It is also beneficial for audio, visual and kinesthetic students. It also gives up a summative check up.

b. Serosoft / Edunet

Serosoft is the app which is very useful. The teachers can upload job sheets, send videos, even daily attendance is recorded. Even homework assignment job sheets can be uploaded on serosoft. This app is very beneficial to the teachers as well as the students. It

c. Youtube:

It has contributed to much greater flexibility in instruction. Not only can teachers display accurate charts and graphs, but they can use video to show the students in various subjects. Even it has privacy control through a feature called safety mode. Teachers can create their own channel and students can subscribe it. This app can even be used globally.

d. **Animation**

This is a captivating approach in which students learn in a better manner. By offering a visual representation of the topic, students grasp the concept in a more understandable manner. Even the toughest topics can be presented in a simplified way with the help of animation.

e. Online exams

Digitization gave way to the online exam, making the examination process convenient for both teachers and students.

f. Imax

Imax is the app which is used by the teachers. It helps the teachers while teaching the lesson. It includes different presentations of the lessons. It helps the students to experience new methods. It helps in the execution of the plan for the teachers.

g. smart class/smart boards

A smart board is a brand of interactive whiteboard. It allows teachers and student to control the computer through touching the screen. This technology can help make lessons interesting to students by allowing them to play important roles in the lesson by interacting with the technology. It also makes differentiated learning much easier because teachers are able to accommodate different styles.

h. Digital Library

A digital library is a collection of documents in organized electronic form, available on the Internet or on CD-ROM (compact-disk read-only memory) disks. Depending on the specific library, a user may be able to access magazine articles, books, papers, images, sound files, and videos.

i. Virtual Laboratory

It allows students to explore a topic by comparing and contrasting different scenarios, to pause and restart application for reflection and note taking, to get practical experimentation experience over the Internet.

Conclusion:-

Digitization has no doubt changed our education system, but we cannot say that it has diminished the value of our old time classroom learning. Neither do we want something so priceless to turn into dust. The best part about the digitization of education in the 21st century is that it is combined with the aspects of both; classroom learning and online learning methods. Walking hand in hand both act as a support system to each other, which gives a stronghold to our modern students. Digitization in education has also proved to be the right method for saving resources. Online examination platforms have restricted the frivolous usage of paper, directly confining the cutting down of trees. This way the digitization of education industry in the 21st century proves to be a boon to our society.

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USE TECHNOLOGY TO ENHANCE YOUR YOGA PRACTICE

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Abstract

The calmness and soothing feeling that comes with yoga is irreplaceable. Technology has made our lives easier and for yoga, it is all about getting the right balance and posture for that perfect experience. One cannot deny the fact how convenient it is to have technology infused yoga products that are making a huge difference to the whole practice. Tech yoga is terms that is quite influencing and is making many people choosing yoga as help is always at hand. Technology has made the whole process of striking a perfect balance between tight schedules and yoga quite simple. As the world evolves, two paths have emerged that appear to be seemingly irreconcilable. There are those who are moving forward through science and technology, and others who are seeking ancient wisdom and inner experience. In light of these two viewpoints, however, a third path has emerged. As the world evolves, two paths have emerged that appear to be seemingly irreconcilable. There are those who are moving forward through science and technology, and others who are seeking ancient wisdom and inner experience. In light of these two viewpoints, however, a third path has emerged.

Keywords*-Tech Yoga, Technology Infused Yoga, moving forward through science and technology, ancient wisdom and inner experience.*

Introduction

There are a number of people who are desperately trying to find balance between an advancing technological world and the serenity of a life focused on consciousness and awareness. Thankfully, this is a time when the divide between the old, beneficial practices and current advancements in yoga is disappearing.

For yoga enthusiasts, there have been several products introduced to the market which intend to enhance your practice through technology. Aside from apps and websites dedicated to yoga, there are hardware devices which can also help you. Here are a few technological advances that are making waves within the yogi community. Even though some of these products haven't been released yet, their development is promising for the future of the yogic lifestyle and consciousness-based medicine

Techy Yoga Clothes

One of the mergers between yoga and technology has been the creation of interactive clothing. A few innovative companies are weaving sensors into common garments, such as

yoga pants, shirts, and even shoe inserts, to give you feedback about your body and positioning. These clothes are designed to be paired with a corresponding app on your Smartphone or tablet, which receives and translates the data for your use. Some of the more ambitious brands go so far as to actually give you guidance about your practice.

For example, Wearable X has launched their *Nadi X* yoga pants, which provide gentle vibration during your yoga flow to let you know when you are out of alignment. Imagine the progress you could make in your at-home practice if your yoga pants "told" you where your imbalances are. The *Nadi X* can be pre-ordered via their website and is scheduled to ship as early as August 2017.

Another upcoming release is *Move* by Electricfoxy, an app which will allow you to:

- Set specific goals
- Challenge friends
- Share progress

Move also uses sensations from your garment to correct inconsistencies in your movements. If this particular product holds up to it promises, you will be able to receive direction from your instructor or other experts via the app on specifics of your practice.

Another company taking advantage of this kind of technology is Athos, a brand which offers activated apparel for athletes of all kinds. While their clothing is not specifically geared toward yoga, their usefulness in giving detailed feedback is something to get excited about. Athos gear works similarly to the aforementioned clothes, while also monitoring your heart rate and real-time muscle activity. They have even partnered with professional athletes and organizations to aid in player injuries. While you may not be an NFL player or tennis pro, this kind of data can be useful in rehabilitation efforts and for those yogis who face specific physical challenges.

Intelligent Yoga Mats

Intelligent yoga mats may be the most promising future technology on the horizon for yogis. Once again, using sensors synced to your smart phone or tablet, these products could really be a boost to your yoga practice when used correctly. Several forward-thinking companies have been looking into producing a yoga mat that will not only guide you in your yoga flow, but also correct the inconsistencies in your balance and posture. While most of these are still "in the works," you may see them at your local yoga studio sooner than you think.

Smart Mat is great for yogis who think committing multiple hours a week to attend yoga classes is too much. This portable yoga mat makes it possible to practice and learn yoga at home. Promoted as "the world's first intelligent yoga mat," Smart Mat is built with responsive sensors that link to your Smartphone or Tablet and guides your practice through a series of audio and visual indicators. It corrects your pose through a two-step process by taking the user's height, weight and various micro-readings into account. The flexibility of Smart Mat allows you to have a more customized yoga tutorial, and even includes Hot Yoga Sessions. The electronic components in Smart Mat are rated to withstand temperatures up to 110 degrees

Interactive Apps

Yoga-centered apps for your smartphone or tablet are another form of technology already available on the market. There are many options out there, but a few stand-outs have a lot of promise. For the most part, these apps are very similar. They all offer guidance from experts with pictures or videos to support your practice. Three effective apps to explore include:

- Down Dog
- Daily Yoga
- Yoga Studio by Gaiam

Since this form of yoga technology has been developing for some years now, there are many apps to check out. When selecting the app that's right for you, take into account important things such as:

- Usability
- Validity of information
- Feedback features
- Logging personal information
- Tracking progress

While you are exploring yoga-centric apps, you might also consider using Muse during meditation. This headband uses brain-sensing technology to measure whether your mind is calm or active, and translates those signals into guiding sounds. Through the iOS app, you can choose sessions based on Dr. Deepak Chopra's teachings around essential nature, breath, and inner quiet. Learning how to calm your mind is an important tool for improving your yoga practice, and can do wonders for Savasana.

Dr. Deepak Chopra also co-founded an app with Poonacha Machaiah called Jiyo, which yogis will find especially helpful. While it is not specifically asana-focused, this app works

by syncing with your phone and/or fitness trackers to help you monitor your health in a holistic way. Depending on your condition and activity, *Jiyo* will suggest:

- Materials for you to read or watch for guidance
- Yoga postures to try
- Foods to eat
- Other relevant practices to help you bring about your best health

With this and other similar apps being developed, you can spend less time thinking about your health practices and focus more on living them.

There are a lot of promising technological advancements coming your way soon or already available to enhance your yoga practice. Take some time to check them out to see if they support your practice. While these developments may not tend toward the traditional ways of a yogic lifestyle, technology may soon make these principles accessible to a wider audience. The marriage of modern-day technology with valuable ancient wisdom traditions may one day prove to be a key element in the evolution of humanity.

Athos

Frustrated by their workouts at the gym, the co-founders of Athos tried to help people reach their fitness goals through technology. Promoted as a "much less expensive version of a personal trainer," Athos can be divided into three parts: the gear, the technology and the app. The gear reads your muscle effort, heart and breathing rate, which gives you a touch of comfort with flat seam construction and sweat wicking while special features help to reduce fatigue and soreness. The core is in charge of collecting and interpreting information from the gear and can be visually displayed in the app. It also helps you keep track of your exercising progress and avoid injury.

Writings on Yoga & technology

In the introduction to the 2014 book *Gurus of Modern Yoga*, editors Mark Singleton and Ellen Goldberg tell readers that throughout the history of yoga "teachings, and gurus, have always adapted to the times and circumstances in which they find themselves." The use of new forms of media and technology are one of the most significant ways that yoga has adapted over the last 125 years in America. The current popularity of yoga is due as much to its charismatic and influential teachers as it are to the printed page, the television camera, and the DVD. It may seem strange to place PBS stations on par with B.K.S. Iyengar, but it is doubtful that yoga in America would be as popular and prominent as it is today without both.

Conclusion

For many who see direct, in-person instruction as the touchstone for valid yogic practice, teaching through various forms of media can seem inferior, or even invalid, but they have also been incredibly democratic and given millions of people access to yoga despite being separated from direct contact with a teacher because of geographical distance, circumstance, or cost. A close look at many of the teachers who have used the printed page or screen finds them to be both aware of the limitations of their mediums and actively trying to expand beyond those limits.

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ROLE OF EDUCATION IN BRIDGING THE TECHNOLOGICAL GAP

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Abstract

Education is the process of facilitating learning, or the acquisition of knowledge, skills, values, beliefs, and habits. Education can be thought of as the transmission of the values and accumulated knowledge of a society. As far as technology in society is concerned, it has changed significantly over the last 200 years. Technology can be viewed as an activity that forms or changes culture. Additionally, technology is the application of math, science, and the arts for the benefit of life which is role of education.

Keywords: *Role of education, culture, technology, society*

Introduction:

In many ways, education in the schoolhouse has remained fairly constant with teachers and textbooks being the primary way that students learn while at school.

Educational methods include storytelling, discussion, teaching, training, and directed research. Education can take place in formal or informal settings.

Formal education is commonly divided formally into stages as preschool or kindergarten, primary school, secondary school and then college, university, or apprenticeship. Education is also the study of methods and theories of teaching.

Technology is the collection of techniques, skills, methods, and processes used in the production of goods or services**.** Technology, the application of scientific knowledge to the practical aims of human life or, as it is sometimes phrased, to the change and manipulation of the human environment.

Types of Education:

Education goes beyond what takes places within the four walls of the classroom. A child gets the education from his experiences outside the school as well as from those within on the basis of these factors. There are three main types of education, namely, Formal, Informal and Non-formal.

Formal Education

Formal education or formal learning usually takes place in the premises of school, where a person may learn basic, academic, or trade skills. It is associated with a specific or stage and

is provided under the certain set of rules and regulations. The formal education is given by specially qualified teachers they are supposed to be efficient in the art of instruction. It also observes strict discipline. The student and the teacher both are aware of the facts and engage themselves in the process of education.

Informal Education

Informal education may be a parent teaching a child how to prepare a meal or ride a bicycle. People can also get an informal education by reading many books from a library or educational websites.

Non-formal Education

Non-formal education includes adult basic education, adult literacy education or school equivalency preparation. In nonformal education, someone (who is not in school) can learn literacy, other basic skills or job skills. Home education, individualized instruction, distance learning and computer-assisted instruction are other possibilities.

Role of education to bridge technological gap:

Education with technology is a systematic application of relevant technological processes and resources in teaching, with a goal to improve students' performance. It involves a disciplined approach to identifying the needs of students, applying technology in instructions, and tracking their performance.

Education should be a means to empower children and adults alike to become active participants in the transformation of their societies. Learning should also focus on the values, attitudes and behaviours which enable individuals to learn to live together in a world characterized by diversity and pluralism.

There is no clear indication or widely used measurement of effective teaching. It is controversial because it is seen as a vehicle to promote an education system that has been creating inequalities of social and intellectual capital. It is open to debate because effective teaching is one of the many variables that may affect students' academic performance, and there is no agreed-upon definition of effective teaching .This is especially pertinent in the discussion of the use of technology and how it may enhance the effectiveness of teaching.

Conclusion

The timing has never been better for using education in technology to enable and improve learning at all levels, in all places, and for people of all backgrounds. From the modernization of E-rate to the proliferation and adoption of openly licensed educational resources, the key

pieces necessary to realize best the transformations made possible by technology in education are in place.

Although the presence of technology does not ensure equity and accessibility in learning, it has the power to lower barriers to both in ways previously impossible. No matter their perceived abilities or geographic locations, all learners can access resources, experiences, planning tools, and information that can set them on a path to acquiring expertise unimaginable a generation ago.

All of this can work to augment the knowledge, skills, and competencies of educators. This all is made more likely with the guidance of strong vision and leadership at all levels from teacher-leaders to school, district, and state administrators. For these roles, too, educational implementation in technology allows greater communication, resource sharing, and improved practice so that the vision is owned by all and dedicated to helping every individual in the system improve learning for students.

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TO STUDY THE EFFECT OF AUDIO-VISUAL TEACHING AID ON SCIENCE SUBJECT TEACHING TO 6TH CLASS STUDENTS

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Abstract

The purpose of the study was to check the effect of use of e-learning on the teaching learning process. For this study the sample consists of 30 students of 6th class from Ashoka Universal School. The pre test was conducted then the treatments will be given to the sample. After treatment the post test will be conducted then the data will be analysed and interpret. Now a day's students become more techno savvy. They love to play video games and watch movies. The students feel boring with the traditional teaching learning process. The science subject is very hard for the students. To make the students to learn science subject with interest the researcher will use the audio-video teaching aid. This will help to increase the student's participation in teaching learning of science subject.

Introduction

The term e-learning has been defined as delivery of learning by electronic means. E-learning involves the use of a computer or electronic device (e.g. a mobile phone, power point presentation, audio-video device) in some way to provide educational or learning material. The concept of e-learning is one of the effective methods in the 21st century for the effective teaching learning process. The learning material is kind of audio-video teaching aid. There are mixed learner present in the class, some are visual learners; some will learn with the hearing, some are kinaesthetic learners also. The researcher will use audio-video teaching aid to teach the difficult concept of science for the students.

Statement of Problem

To study the effect of audio video teaching aid on science subject teaching to 6th class students

Objectives

- To check the effectiveness of learning science by audio-video aid.
- To find out the difference between pre test and post test.

Operational definitions

1. **Teaching aid:** The material which is used for effective teaching process
2. **Science:** a compulsory subject for the secondary school students
3. **6th students:** students who are studying in 6th standard and division of Ashoka Universal School.

Need and Importance

The regular teaching learning process is traditional in many schools. Students found it boring. They never use to get interest in teaching science subject. The concepts of science subject are very hard to understand and explaining the concept with traditional method is not sufficient. Hence researcher thought to use the audio-visual teaching aid to explain the difficult concept. This research is important to improve the quality of education system. The research will help to increase the interest of the students in science subject.

Research question

Is there any positive effect of audio-visual aid on the teaching learning of science?

Hypothesis- Null Hypothesis

There is no significant difference of audio-visual teaching aid on the learning of science subject.

Method adopted for the present study

The researcher has used experimental method for the present study.

Sample and method of sampling

The research investigation was carried out on the 30 students of 6th from Ashoka Universal School, Wadala.

Simple random sampling method was used.

Scope and limitations

Scope:

1. It helps in learning both in classroom as well as at home.
2. It helps for the better understanding of the science concept.

Limitations:

1. Conclusion of the present research is limited to the selected sample only.
2. The present research is related only for the learning of science subject.
3. The present research is related to academic year 2018-19 only.

Tool used

The researcher has used pre test and post test as data collection tool.

Procedure of research

1. A sample of students is randomly selected form the 6th A class of Ashoka Universal School with the lucky draw method.
2. The researcher will get the sample of 30 students.
3. Pre test will be given to the sample based on the topic REPRODUCTION of science subject.
4. After the pre test the same topic REPRODUCTION will taught by using the audio-visual teaching aid.
5. Immediately the post test will be conducted on the same topic to check the effectiveness of teaching by audio-visual teaching aid.
6. Mean and result was calculated.

Data analysis

	N	M	SD	T Value Calculated	T Value from the table
Pre Test	30	M1= 13.867	2.893	-8.145	2.01
Post Test	30	M2= 18.567	1.148		

Interpretation

Our computed value of‘t’ is -8.145 does not reach the critical table t-value 2.01. Hence it is to be taken as insignificant. Consequently, we can reject the null hypothesis at 5% level of significance.

Findings

There is significance difference in the learning of science subject by using audio-visual aid for the teaching learning process among the 6th standard students.

Conclusion

The result of the study shows that there is significant difference in the learning of science among 6th standard students with the help of audio-visual teaching aid. Thus audio-visual teaching aid is more effective learning tool for the science subject teaching among the 6th class students.

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DEVELOPING A PHILOSOPHY OF SOCIAL MEDIA

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Abstract

At its most fundamental level, philosophy involves careful, reflective and self-aware thinking about a range of topics that are central to the question of what it means to be a human being. Through philosophical discussions, students learn to analyse problems and issues, and to provide adequate answers and solutions to these problems and issues. They acquire the ability to examine and evaluate their own reasoning as well as that of others, and in this way become more confident of their own views and actions. However, teaching philosophy in a secondary school context can be very challenging, because the students' thinking skills are still at a developmental stage, whereas philosophy discourse seems to require rather advanced thinking abilities. This essay suggests how films and podcasts can be used to overcome this challenge.

Keywords- *Introduction, Make it optional, Minimize distraction, Clarify course expectations and connections, Practice clear and effective communication, Respect student privacy*

Introduction

Regardless of one's view on its merits, social media has quickly become a necessary component of our daily lives. Social media apps weave a thread through every area of our lives, connecting our professional, consumer, and personal decisions and actions. Businesses, schools, and government entities have picked up on the value of social media and have integrated it into their day-to-day operations.

The impact of social media is no different in the classroom. Instructors and school administrators have taken to social media to connect with students, share important information, and establish a presence outside the classroom. Despite the value of employing social media in the classroom, it carries some dangers as well. Social media can sometimes blur the lines of professional relationships, or it can alienate those who don't like social media or don't know how to use it. To avoid these potential pitfalls, it's important to develop a philosophy of social media so you can ensure that you properly represent the institution and maintain the instructor–student distinction. The following are some best practices for using social media in your course.

Make it optional-

- Not every student uses social media or wants to interact with classmates through social media. If some students don't wish to participate, then respect their decision. If students feel pressured to go on social media against their will, their motivation for the rest of the course will suffer. By keeping the social media component optional, you do not penalize students who would not benefit from it.

Minimize distraction-

Social media should supplement education. Too much emphasis on social media can distract students away from course content and requirements. For example, sending students to search YouTube for videos on a certain topic can easily lead to a rabbit trail of funny animal videos. Instead, you could assign a unique article or video to each student, and students are then responsible to post their material to the class Face book group and explain how it relates to that week's course objective. The social media component should point students back to what they are doing in the course, not consume their time and energy to the detriment of their course involvement.

Clarify course expectations and connections-

Set clear expectations for social media use in the course. Give students an idea of how much time they should expect to spend on social media, and remind them of basic netiquette guidelines. Also make sure to set clear objectives for using social media that connect with the course objectives. For example, if one of your course objectives is for students to be able to explain how to develop a brand, you could have students go to different companies' Twitter pages and re-tweet posts that they think reinforce each company's brand identity.

Practice clear and effective communication-

Because it's important to maintain the distinction between your role as the instructor and their role as students, be aware of how a status update or post can come across to students. Generally, some students might not receive jokes and sarcasm well, especially if a student's relationship with the instructor exists only within the bounds of the online classroom. Keep social media communication professional and relevant to the course objectives.

Respect student privacy-

Let students know that they can either create a new social media account specifically for your course or use an existing account with appropriate privacy settings. Finally, keep in mind FERPA regulations when posting in the social media platform. That means no public communication about an individual student's grades or progress in the course.

Conclusion-

Social media provides a creative platform where you can interact with and instruct students. Because of its prevalence in today's culture, most students have access to social media, making it an easy and accessible tool to supplement online education. Developing a philosophy of social media helps you maintain respect and integrity in your course.

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DIGITIZATION: TRANSFORMING INDIA INTO A KNOWLEDGE HUB

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Abstract

Even though India is known today as a powerhouse of software, the availability of electronic government services to citizens is still comparatively low., Therefore there is need of digitization in each and every field i.e. social, economic , and educational. Digitization is the initiative about empowering the common man in the country. With new and stimulating business opportunities, stakeholders who are willing to contribute proactively and fairly claim their stake in the progress and growth of the country. With this, the days can't be better for a digital marketer aspirant as the opportunities are increasing exponentially year on year. Digitization is important to prepare India for a knowledge future. On being transformative that is to realize IT (Indian Talent) + IT (Information Technology) = IT (India Tomorrow). So the present study is related to the concept of digitization and its importance from the present and future context of India.

Keywords- *Digitization, Knowledge Hub*

Introduction-

India , a nation which has so many variations, so many varieties. These varieties are on the basis of Nature, (related to environment) ,social , Economic, and religious. Though there are so many varieties , All these varieties are united in Indian Constitution which is the largest constitution in the world. Indian constitution provides equal opportunity to every individual or human being. There is the provision of equal justice to each and every individual.

Today India is recognized as a developing country. But if we see the history of India many rulers have ruled over India since many years, means the journey of India is has become from monopoly to Democracy. After independence the progress of India has been getting in many fields such as agriculture, Education, Science, Economic, Social And Technological aria. Today India has moved its footsteps towards the digitization. The vision of Digital India aims to transform the country into a digitally empowered society and knowledge economy.

"Digital India has been envisioned as an ambitious umbrella program to speed up progress and make India into a digitally powered economy along with ensuring that the government is transparent and participative. It comprises of several initiatives beneath the single program each aimed to prepare India for becoming a knowledge economy and for bringing excellent

governance to citizens via synchronized and coordinated engagement of the entire Government". (Source: Press Release issued by the Ministry of Communications and IT)

Aim-

The vision of Digital India aims to transform the country into a digitally empowered society and knowledge economy. Digital India is a big campaign commenced by the Indian government, This campaign has launched to empower the country digitally. The aim of this campaign is to strengthen the E-services of government ; its motto is to reduce the paperwork in every field. Digital infrastructure, digitally delivering services and digital literacy are the three major aspects of digital India campaign. Let's see the short description of these points.

A) Digital infrastructure-

Digital infrastructure means preparing a space for digital identity to all the registered citizens, which will be helpful to get fast and easy government services. All the people should become empower in managing a bank account, financial management, safe and secure cyberspace, education, distance learning, E learning etc. Through digital india project High speed internet as a core utility shall be made available in all Gram Panchayats. As well as mobile phones and Bank account would enable participation in digital and financial space at individual level.

B) Digitally Delivering Services-

Digital delivering services facilitate for connecting to all the people to the system. All the people should get immediate benefits of all government plans and policies as soon as they are launched and as when it is needed. It will also promote online business as it makes the financial transaction easy by electrification and classless transaction.

C) Digital literacy-

Digital Literacy or the E Literacy helps to connect people on globalization level. It enables the individual to connect to the whole world through mobiles and computers, E literacy decreases the paper work in school, colleges, offices, or any other institutions. Universal digital literacy.

Digitization is the need of today's world. Digitization is useful for the village people as well as for those people who are settled in the remote area of the country or are very away from urban area,

Digitization: A Background Perspective-

Digital India is a A programme to transform India into digital empowered society and knowledge economy. This is a follow up to the key decisions taken on the design of the programme during the meeting of the Prime Minister on Digital India Programme on August 7, 2014, and to sensitize all ministries to this vast programme touching every corner of the government. This programme has been envisaged by Department of Electronics and Information Technology.

According to our Communications and IT minister, in digital India project there is worth 1 trillion dollar business opportunities in India such as the primary sectors in IT/ITeS, electronic manufacturing and telecom companies. Let's see how they are going to create new opportunities for the youths in India.

Start-ups –

Start Ups is one of the fundamental aspect in digitization. As per this programme every individual has given an opportunity develop his skill and to enrich his or her ability. In Start up there are many ideas that individuals can capitalize on to contribute to India's digital growth story. Budding entrepreneurs have ample opportunities to receive information and advertise their business on a government platform under Start-up India. It is forecasted that the start-ups will generate employment for more than 2.5 lakh people in India by 2020.

Information for All-

This is one of the important pillar in digitizationin India. And under this pillar our Maharashtra government has started one programme that is ***Mahitidoot.*** In Mahitidoot campaign, college students visit the families and they tell information to the people about various schemes of government by using mobile app of Mahitidoot. The major idea of mahitidoot campaign is to connect the rural area with urban technology, also to provide e-services as well as various schemes of government to remote villages that happen to suffer a lot to do pity works which involve a lot of official work, now all this will be done at the very efficient time and at low labour just at their phone's length. Maharashtra government has started E- Seva Kendra, As well as E- Doot on every Grampanchayat level. Every Grampanchayat has become now Digitalized. It has connected to the higher level administration. 'Information to all' encompass making information online and hosting websites and documents. This would result into an easy and open access to information by the public in general along with development of open data platforms. As usual, the Government would pro-actively engage through social media and web based platforms to

inform citizens. The platform 'MyGov.in' would foster 2-way communication between citizens and government. Also, it would enable sending online messages to citizens on special occasions/programs.

Conclusion-

In this way in the conclusion we can say that digitization is the need of present era. India is putting her footsteps towards the success of this campaign. Today India has become the hub for many IT companies, education sectors. Therefore there is need of digitization in each and every field i.e. social, economic, and educational. Digitization is the initiative about empowering the common man in the country. Various government departments have shown interest in the digitization project, like the IT, Education, Farming or agriculture, NGOs etc, as it gives a show sight of bright and more knowledge equipped future of the country.

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INFLUENCE OF DIGITALIZATION ON EDUCATION: TRENDS AND ISSUES

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Abstract

Digitalization is a key term in this special era of abrupt development of mankind. Now a day we are living in an age where technological innovations are so fast that each day newer technology has been emerging leading to advance knowledge. We are dragged in a stage we cannot survive without Technologies. Digitalization is expanding the educational system beyond traditional classroom teaching to accommodate students preference of time, place, style and previous levels of attainments. Digital content focused on an interactive online learning rather than static classroom lectures. Digital Education can be defined as the use of a combination of technology, digital content and instruction in the education system to make it more effective and efficient than the traditional education system. Current paper discuss the upcoming trends in digital education system and influence of digitalization on education that will shape the future of our coming generations for the better.

Introduction

Digital technology in India evolving over the last few years, changing the way students learn in the schools. The traditional classrooms have paved the way for more interactive teaching methods as schools are increasingly adopting digital solutions to keep themselves abreast with the technological changes. Today's smart generation of students are well- versed with laptops, i-pads and smart phones, these innovative methods of teaching guarantees more participation from students.

To cater the need of smarter learner schools must provide the digital classrooms such as Tata Class Age, Tech Next, Pearson ect. with interactive software to aid teachers in classroom teaching.

Latest Trends of Digital Education:-

1. **Digi Class/ Flipped Classrooms –** A complete revolution in the way we learn today has been brought by Technology. Teachers uses the digital Screens to teach the whole class thus making each and every student to get the same content and input from the teachers. This feature of digital era has increased the students engagement as it combines various teaching styles. Each student get the richest learning experience which is almost impossible by traditional classroom teaching. This new style of learning is more

interesting, personalized and enjoyable. Digital classes makes studying enjoyable, easy and interesting.

2. **Massive Open Inline Course (MOOCS) –** A Massive open online course (MOOC) is an online course aimed at unlimited participation and open access via the web. India is considered to be the largest market for MOOCS in the world after USA. Due to large population of India massive open online course are said to be the gateways for a lot of Indians in terms of bringing an educational revolution.
3. **Distance Learning Programme-** Online distance learning programme gives a great opportunity to avail high quality learning with the help of Internet connectivity.
4. **Video Based Learning -** Video based learning as a part of digital learning has geared up in Indian education sector and has made education engaging, entertaining and exploring. It enables learning with creativity, fun and entertainment on cards via the wonderful Apps, podcasts, videos, interactive software, e- books and online interactive electronic boards. Children's are excited and operative with internet to manage the showcase via their intelligence, exploring the weak technological skills.
5. **K12 sector Game based learning** – K12 school is a terminology used for Kindergarten through XII grade. Various start-up companies have been the contributor for this sector. Today the world is of Y- generation people who are acquainted with technological developments taking around them, and they are also surrounded with the required skills and abilities. K-12 creates the game based learning environment, which enables the learner to easily get the word of education in India and give us a better self- trained Y generations.

Advantages of Digitalized Classrooms:-

- Technology allows teachers to weave internet, audio, video animation and software resources into classroom discussions, lecturing, training, brainstorming, note taking and other activities.
- Flash animated disc allow learner to play board games using the interactive white boards classrooms. Teachers are constantly developing their own board games.
- United streaming, which allows teachers to view and download educational movies, images, less on plans and teaching tools related to any and every topic.
- The software has a large teaching material resource database which helps in supporting planning and the development of resources.

- Visual and tactical lessons lend to multisensory engagement in the learning process.
- Digitalization of classroom helps in feedback by creating records of each step of a lesson activity for students to review at a later time.
- Digital class room teaching saves money, time and energy by allowing user to deliver or handle large amounts of information or group of people.
- Technological fulfilment helps in informing their skills in using ICT by discussing with peer or observing teachers and peers operation.
- Use of digital class-room enhance professional motivation and innovation of teachers.
- It creates the virtual learning environment (VLE) and learning objects repository and it helps in widespread sharing of resources.

Issues regarding Digital Classrooms:-

In the recent years, the digitalization has emerged as a popular learning and collaborative tool. While digitalization have several distinct advantages they have several disadvantages also-

- Digitalization is more expensive than traditional teaching.
- It requires the proper financial planning for the state government schools as compare to the central board school.
- Still the proper trained technical hands are not available to provide the training to the school teacher.
- The attitude of school teachers are quite focus on the conventional patterns teaching.
- The teacher using the digital class-room teaching as the complimentary and losing their personality as a teacher.
- By using the technology the teacher forget that every student in a class is having different I.Q. level so that it requires the situational attitude of teacher.

Conclusion :-

Digitalization is an innovative approach of learning. It is holistic way of teaching and learning that meets the need of today's techno savvy students. It is an environment made up of collaboration, choice, and an array of technological resources that supports a successful online learning experience. Teachers and students must embrace the shift away from traditional classroom practices to the digitalized approach to education.

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IMPACT OF DIGITALIZATION ON EDUCATION

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Abstract

Traditionally education is centred on sources such as schools, teachers and print media. The learners reached the information sources by enrolling with schools, teachers and libraries. Prior to the digital era, information was not accessible by the majority of people, and even those accessed were unable to obtain current information with respect to today's context. The modern society wants to know the information as it happens and when it happens, and the world is moving from an information society to a knowledge society. Thus education is given the highest priority and brainpower is becoming the most valuable asset of an organisation. Advances in digital technology have opened up many avenues of learning. Technology has made information accessible or transmittable from anywhere and to all groups of people. Education has reached most parts of the world and ICT has become an integral part of human life. Digitalization is transforming business models across industries. As information technology (IT) is becoming embedded in products and services, IT leadership has an increasingly dualistic role in supporting the organization and also serving its customers' changing needs. This research report summarizes some of the key research findings, providing scholars and practitioners with insights into and understanding of digitalization and changes in IT leadership in Finnish information intensive organizations.

ELECTRONIC AND DIGITAL ERA

"The use of technology coupled with bold decisions can help India leapfrog into inclusive growth and improve the quality of health and education." – Bill Gates

Electronic era commenced with the use of wireless electronic communication over 100 years ago. Transmitting telegraph messages and the radio are among the important applications of this technology. The messages were passed through the air, invisibly, on radio waves. Since then the technology use has moved from radio, to recordings, to movies, to television, to computers, to CDs, CD ROMs & the Internet. This technology was very useful to convey instant urgent messages and well as to make people be aware current local and international news. This has become an informal but effective form of education.

SUPPORTING TECHNOLOGIES AND APPLICATIONS

There are a number of technology components available to built knowledge management systems. Local area networks, Internet and intranets are the backbones. They provide transparent speedy transfer of knowledge among people and applications. Internet applications built using software and tools allow collaborative intelligent access to knowledge. Appropriate access and authentication layers ensure the security aspect of such systems. Data and document bases act as the repositories to generate the knowledge.

ORGANISATION OF EXPLICIT

Knowledge Organisation and managing explicit knowledge includes generation, creation or acquisition of knowledge. Such activities could be performed through tools such as RDBMS and EDMS.

MEDIA FOR EXPLICIT KNOWLEDGE

Explicit knowledge could be represented using different media. Text, graphics, animation, sound and video are the media to represent them . Unlike the traditional media in forms of books information stored digitally can be preserved without any forms of distortion and they can be accessed easily and quickly from any part of the world.

TEXT

Text is one of the most effective components of representing knowledge. The words embodied as text, convey a powerful message and this has been widely used in handwritten and print media. Most data and information is represented through this medium. It is impossible to convey an unambiguous message without text. To convey a message effectively the message should be specific, definite, concrete and precise. Selection of suitable fonts and size is important for legibility and aesthetic effects.

CLASSROOM LEVEL

Use of technology at classroom level was not possible until the teachers delivery mechanisms were aided with technology. Originally delivery mechanism was through verbal communication and then through the introduction of written media such as blackboards. Later through overhead projectors teachers were able to do the writing in advance and project them directly. Use of overhead transparencies allowed them to reuse written material but without improving them.

TEACHERS ROLE

In the modern global learning environment teacher’s role shifts from "dispenser of information" to "facilitator of learning" as he has only to guide the active students who are

involved in using the e-learning material. Classrooms have been fully equipped with permanent multimedia projectors and computers and the facilitator needs to access the e-learning system through the Intranet. Teachers should not control the learning process as well as they should allow students to perform collaborative work and make some decisions on their own. The changes that are happening in teaching and learning were discussed in with the aid of two case studies. The key technologies and practices of e-learning at University of Western Sydney were highlighted there and it was compared with the activities of the external degrees program at UCSC

"***Digitalization deemphasizes the top-down dissemination of standardized knowledge***.

"*Digitization is the integration of digital technologies into everyday life by the digitization of everything that can be digitized*."

As an educator, you go from disseminating knowledge orally, via in-class lectures, to putting it online in a variety of formats, including written text, videos, quizzes, and so on. While, almost by definition, oral lectures are prepared in advance, providing such content online frees up class time for more discussion.

"*But there are other advantages too. Notably, **digitalization opens up higher education to people who wouldn't be able to afford or access it otherwise**, such as people living in remote locations. Similarly, digitalization makes it possible for some people to pursue higher education with less disruption to their lives. Individuals who are already managers in a company, with heavy workloads and important responsibilities, may find that **online learning makes it easier to combine their professional and family commitments**. The possibility with online learning to access your sessions when you want and learn at your own pace is a major advantage for many students. It all very much depends on individual learning styles and short or long-term professional goals*."

The traditional education system was based on the concept of 'knowledge transfer' - the age old guru shishya parampara - which established a clear teacher taught relationship. However, the digital media and the internet has ushered in a democracy of knowledge where education has become a collaborative, self-driven enterprise. Today there are tools available to transform learning from an academic exercise to an engaging experience in imaginative and experiential learning.

This has often led to a misplaced apprehension that the relevance of the teacher would gradually diminish in an era of e-learning. The institution of teacher remains a sacrosanct pillar of the education system - a beacon which not only inspires and connects but also

creates the human interface that prompts students to exploit the digital resources gainfully. The multiplicity of sources and sheer magnitude of digital information available requires students be guided through the immense clutter to harness knowledge. While the digital age will positively impact all forms of education, it cannot replace the human interface which is so vital to the social, moral and emotional development of the child

But digitalisation offers fluidity to the Indian education sector by being a supplementary form of the system as it is available to students as per their need. While the traditional education system has a uniform approach, Ed-Tech can be customized as per students' requirements. It can be molded as per the student's capability to understand and imbibe any particular subject.

The new phase of learning has begun and involves various advanced techniques like:

- **Online courses**

want to learn a new language or maybe to get trained in some specific course, but have no time to cover the distance? Online courses are developed by experts who have unmatched proficiency in their specific field and can give you the experience of real-time learning by designing their own online course.

- **Online exams**

Digitization gave way to the online exam, making the examination process convenient for both teachers and students.

- **Digital textbooks**

also prevalent with other names like e-textbooks and e-texts, digital textbooks provide an interactive interface in which the students have access to multimedia content such as videos, interactive presentations, and hyperlinks.

- **Animation**

this is a captivating approach in which students learn in a better manner. By offering a visual representation of the topic, students grasp the concept in a more understandable manner. Even the toughest topics can be presented in a simplified way with the help of animation.

ADAPT TO TECHNOLOGY

Secondly, as the world is moving towards digitalisation India has no option but to keep pace with it. We know that the traditional education system in India is here to stay for the long haul and that no one can take away that learning experience. But our education system needs to be dynamic and needs to adapt to technology.

There is no need to fear a subject like math's as there are fun ways to learn it with the use of E-Tech. Today there are apps to learn languages or any other subject. Hence, what is the point in learning a traditional system when there are so many impactful means of learning through digitalisation?

PRACTICAL APPRAOCH

Thirdly, digitalisation brings in a more practical approach of tracking students' performance. One can easily evaluate a child's progress by going through his exam scores, attendance, assignments, etc. For instance, one has a choice to choose a tutor, schedule class as per one's time availability and study offline or online as per their convenience.

TIME SAVER

In today's world where time is money, digitalisation is a big time saver. Apart from metros, there are many tier II and tier III cities where transport system is not fully developed. Students have to commute for hours to reach their educational institutes.

In this scenario, a digital course comes as a rescuer to students from even the remotest parts of the country. One just needs to log into a website or switch on their dish TV channel to learn a subject rather than spend long hours in the commute from one spot to another.

TRANSPARANCY

Lastly, digitalisation offers a safe mode of learning which is transparent and accountable. Parents can keep a track of their wards' progress by logging into the website.

It also offers them a platform to air their views and suggestions which can be used to improve the system, unlike the traditional method where one has to be quiet fearing reprimand from the teacher. Digitalisation helps in creating a solid partnership between parents and teachers with one goal in mind - better learning for students.

CONCLUSION

Over the last five years computers have been introduced to most educational institutes although its ratio to a student is very high. By making the educators aware of the available technology and some taking initiatives to implement them, some forms of reforms may take place. Whatever Sri Lanka do with respect technology requirements the world will be flooded with information and some people will use them effectively. They would be the People who have developed their skills to the level of finding problem-relevant information and interpreting and applying them in solving of problems.

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ROLE OF TECHNOLOGY AS A RESOURCEFUL TOOL IN SCHOOL EDUCATION

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Abstract

In the recent years, the education system has changed due to the effective integration of technology in the teaching and learning process. The present study focuses on the role and effectiveness of technology used in an innovative manner in the school education. The researcher for the same adopted the case study method and used questionnaire and interview as a tool to support the findings of the study. The samples used in this are the teachers of Strawberry group of schools. The school also promotes effective education with the use of technology in education, in essence to video conferencing, Thing Link and they also follow the Seed curriculum for the overall development of the students which is basically developed according the philosophy of the great Educationist Mr. Howard Gardner. The use of technology in an innovative way in education, such as, Thing Link and Video conferencing makes learning easy and interesting at Strawberry. In present times, technology based education has also become one of the principle constituent in modifying world towards the subsequent progress.

Introduction:

Albert Einstein has rightly said that "Necessity is the mother of all inventions".

In all spheres of life, man has always toiled for brilliance. This aspiration and determination has brought forth new inventions and innovations in all walks of life. The world of education has also been influenced by the expansion in the use of technology. Technology can be used to strengthen student learning and can also be efficiently as a cognitive tool for teaching and learning in the classrooms.

In the past several years, Educational Technology has become an increasingly essential constituent of education system. This could be highlighted by the remark made by **Kothari Commission (1964-66) i.e. "The destiny of nation is being shaped in its classrooms"**, which throw enough light on the importance of use of technology in education.

"The most important thing that schools can do is not to use technology in the curriculum more, but use it more efficiently."

Students learn, understand and implement knowledge in a better way when the teaching - learning process is innovative and joyful. Now a days, schools have been focusing and striving for the students to be digitally literate but the mere existence of technology in education does not change the teaching and learning process. The teachers, in this, play an equal important role. It is observed that no subject can be taught without the use of technology. The teachers nowadays, use technology mostly for their administrative work as well as for imparting the knowledge in an effective way to the students.

Considering the present scenario of education with technology, the researcher found the methods used by the Strawberry group of schools to be very appealing and effective.

Sri Vyankatesh Education Society's strawberry English Medium School follows CBSE curriculum. The pedagogy which is experimental based, gives more space for critical thinking of students which helps them to cross the traditional boundaries. Here, the students are encouraged to expand their horizon beyond the books, their thoughts are given a proper direction, so they can gain confidence. Child centered methodology of education is adhered, which develops innate skills of the students which enables them to e a lifelong learner.

Strawberry is the only school in Maharashtra to introduce Banking (Finance Literacy Course) at school level. The school also promotes effective education with the use of technology in education, in essence to video conferencing, Thing Link and they also follow the Xseed curriculum for the overall development of the students which is basically developed according the philosophy of the great Educationist Mr. Howard Gardner.

Innovative technology as a resourceful school education:

- **Thing Link:**
  - The name itself indicate that, the website where we link the different things (In the form of video, photo, Wikipedia, audio etc).
  - Basically it is a one kind of Facebook, Instagram etc application where the system provides the user name and password. User name is nothing but your e-mail id, and password of this system you can set according to your choice.
  - The account of user is divided into two categories:
    1. **Thing link happy user (free user)**
    2. **Premium user (pay some amount)**
  - Happy users are trial basis and it has limited functions. While the premium user has one year validity, security and advance accessibility.
  - **Uses:** We can use this application for business and educational purpose.

- Education purpose :-
  - We can make the presentation on every topic.
  - How to make presentation: In this application we can take image related to our topic, on the image we can give tag. Such as labeling of parts of tree in a figure.
  - In that tags we can provide the link of different websites which are related to your topic.
  - Basically we can link the Wikipedia, YouTube video and images. User can also type self information on related topic in text form.
  - 360 degree image: For better understanding of concept or to feel real environment of particular topic this rotating image presentation can be made and we can give the same tag as we are giving to images.
  - Why is it required?: Even if we can watch videos on YouTube, educational websites, Wikipedia directly also but separate surfing of particular topic makes inconveniences in study, instead of separate surfing we can link the website in single image itself by this application.
- Our Thing Link account acts like a book. In which we can save the projects and we can access it anytime and anywhere.
  - How it makes study easy: Students learn the particular topic in both the ways-
    1. By reading information through Wikipedia or other sources.
    2. By watching a video on the particular topic.
- Hence, if student really follow this methodology for study definitely study becomes easy and knowledgeable.
- Best thing of this application is that, there is no downloading of any video or any information. It is just the link of that particular website.

➢ **Video conferencing:**

- Thanks to the development of technology, nowadays education does not only happen in classrooms. It has greatly changed its way, especially with video conferencing. As a matter of fact, video conferencing brings education to a brand new world.
- It is a technology based interactive tool that makes teaching – learning live and simpler. It helps to understand the concepts more clearly and deeply.

- Here at Strawberry, some of the effective teaching learning methods are adopted and implemented from Finland which as a matter of fact, ranks number 1 in the world, in the field of education.
- Video conferencing method is used for teacher training as well as for the students by some of the well known educationists from Finland.

Review of Related Literature:

Dalwadi N. (2011) studied the development of Computer Assisted Instruction (CAI) in science for the students of standard 9th. The study found that CAI is an effective individualized instructional technique for teaching science also found that students as well as teachers have a positive opinion towards the CAI.

Prakash Ahire (2018) in Scholarly Research Journal for Interdisciplinary Studies studied the effectiveness of ICT approach on the academic achievement of class 7th in Mathematics. Pre test and post-test were used by the researcher and the study found to be more effective for academic achievements of the students.

Dr. Satnam Singh (2018) studied the various emerging technology tools that can assist teachers in making teaching and learning process much easier, much more fun and explore potential future development.

Statement of Aim:

To study the effectiveness of innovative technology as a resourceful tool in school education.

Objectives:

1. To find out the effectiveness of use of innovative technology in teaching learning process.
2. To know the concept and effectiveness of Thing Link in education.
3. To study the impact of the use of video conferencing in classroom teaching.

Operational Definitions:

Technology- It refers to the electronic based methods.

Education- The action or process of being educated is called as education.

Innovative teaching- Refers to Thing Link & video conferencing methods used in teaching.

Significance of the study:

In today's world, computer-based technology is not a frill, but an essential constituent of any modern curriculum. The term "technology" can be use to coin down various things, from computers to pencils. In consideration to understand the impact of technology on education, it is advantageous to take into account the motives to which technology is applied. Technology

is used by the students to help them develop higher order thinking skills, critical thinking, analysis, problem solving and so on.

In this attempt, the researcher makes an effort to examine the effectiveness of the use of technology in the success of schools.

Hypothesis:

In view of the above stated objectives the following hypothesis were formulated:

1. There is no significant difference between Thing Link technique and traditional teaching – learning process.
2. There is no significant difference between video conferencing and traditional teaching – learning process.

Research Methodology:

In the present study, the researcher has adopted the Survey method for this present stydy.

Sample:

In the present study, the samples used by the researcher are 30 teachers of the Strawberry group of Schools.

Scope:-

1. This research covers two innovative methods on the basis of technology.
2. This research covers the data regarding to Strawberry group of Schools.

Limitations:-

1.The conclusions are only for theStrawberry group of Schools.

2.The conclusions are limited for the yr.2018-19 of the Strawberry group of Schools.

Tools used:

The researcher has used questionnaire and interview as a tool in the present study.

Analysis of data:

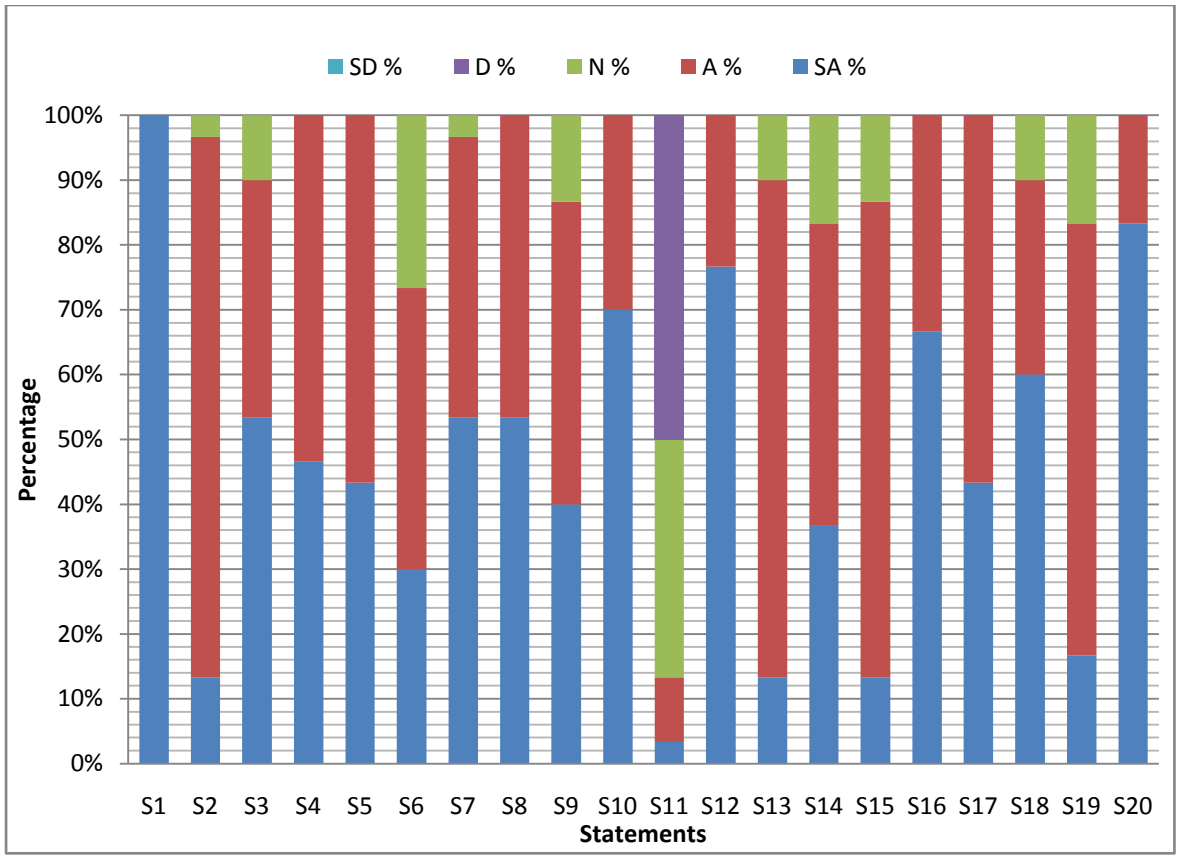
Percentage Analysis of Effectiveness of Innovative Technology In School Education

Statements	SA %	A %	N %	D %	SD %
S1	100.00	0.00	0.00	0.00	0.00
S2	13.33	83.33	3.33	0.00	0.00
S3	53.33	36.67	10.00	0.00	0.00
S4	46.67	53.33	0.00	0.00	0.00
S5	43.33	56.67	0.00	0.00	0.00
S6	30.00	43.33	26.67	0.00	0.00
S7	53.33	43.33	3.33	0.00	0.00
S8	53.33	46.67	0.00	0.00	0.00
S9	40.00	46.67	13.33	0.00	0.00
S10	70.00	30.00	0.00	0.00	0.00
S11	3.33	10.00	36.67	50.00	0.00
S12	76.67	23.33	0.00	0.00	0.00

S13	13.33	76.67	10.00	0.00	0.00
S14	36.67	46.67	16.67	0.00	0.00
S15	13.33	73.33	13.33	0.00	0.00
S16	66.67	33.33	0.00	0.00	0.00
S17	43.33	56.67	0.00	0.00	0.00
S18	60.00	30.00	10.00	0.00	0.00
S19	16.67	66.67	16.67	0.00	0.00
S20	83.33	16.67	0.00	0.00	0.00

SA- Strongly Agree, A- Agree, N- Neutral, D- Disagree, SD- Strongly Disagree.

Graphical representation of the data:



Interpretation of data:

As per the data collected, it is found that 100% of the teachers involved in the study strongly agree upon the fact that technology has become an integral part of education system. The Strawberry group of schools provides ICT training to their teachers which is beneficial to both, teachers as well as students. The use of technology not only helps the teachers in the teaching and learning process but also in planning effective lessons and efficient evaluation process.

The only drawback to some extent found through this study is that the use of technology in education does not always help in the development of the students Higher Order Thinking

Skills (critical thinking, analysis, problem solving), as it does not involve any brainstorming activity through this type of learning.

Discussion:

In the present study, the researcher personally visited the schools and had a one to one conversation with the staff members and also obtained some precise information through questionnaire. The school really takes an effort for the overall development of each individual at the school and very effectively uses the technology in the teaching and learning process.

The use of technology in an innovative way in education, such as, Thing Link and Video conferencing makes learning easy and interesting at Strawberry. In present times, technology based education has also become one of the principle constituent in modifying world towards the subsequent progress.

Conclusion:

The study focused on the role and effectiveness of innovative technology as a resourceful tool in school education. It is significantly found that the use of technology is an innovative manner makes the teaching and learning process simpler, effective and joyful. The methods Thing Link and video conferencing used at Strawberry group of schools for education makes it unique and it has a positive impact over the teaching and learning process.

It improves the class climate, students are more engaged and it encourages the students to work in a collaborative way. The use of technology in teaching and learning process not only positively impacts on students' motivation and achievements but is also essential to prepare them to live and work in the 21st century.

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IMPACT OF SOCIAL MEDIA

Pratiksha Ahire (Pg. 92-99)

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Abstract

Digitization, social media are the websites and application that enable users to create and share content or to participate in social networking. Social media is important topic to discuss in 21st century. In today's era people get addicted to the internet most, they don't use library more, but in day they continuously check their social accounts. Actually, social media is the useful thing for us, we can get easily information in a second, and it doesn't having any restriction of place. In this research I talk about the challenges of social media and how the teacher and student facing the problem of improper knowledge of internet. Social media is facing the so many challenges now a day, like lack of technology skill, online abuse, large class strength, internet access, and skilled teacher. These are the important thing to discuss. Without having the knowledge of technology the student and teacher both understand the concept of technology and don't aware about use of internet and social media. The everyone should have the knowledge of internet and their rule and regulation, and safe them from online abuse especially for young youth. The Social media playing the important role in today's condition, we can easily get the information within a minute and we can solve our problem by own. It doesn't need to carry the whole library with us; we can goggle and get the quick information related to the topic. The positive sides of internet are student-teacher relation in education, positive effect on Business, environment usage, Environmental campaigns. As the internet has good impact on students as well the social media having some negative effect on society and people, that is Depression and Anxiety, Cyber bullying, Unrealistic Expectations, General Addiction, &Unhealthy sleep pattern. These are some general topic and people don't know about it. In my research I am going to express my thought on it. And how can we as a citizen or a guide give our contribution in Global and Digitalization India.

➢ Introduction :

Social media, now a days it is very important topic to discuss its things. Social media is that concept which is important as well as harmful also. People are addicted to the social media. In this modern era people are using social media for their various purposes, like studies, entertainment or just for the fun. We as the citizen of this country should be responsible and have to take precautions against the negative impact of social media. Social media is not a bad thing but the negative use of it makes it bad.

Through social media we connect with people from other country also. As we can do online conferencing with people from any part of the world. We do our online business transactions and fulfilled our materialistic needs through online marketing, but again at a maximum level these steps are causing humans to become lazy.

Social media is also helpful in searching the information on study materials or for education purpose, for instance if the student are not able to buy it subject books then they can search the topics on the internet. Now a day people are using ample of websites/ apps such as whatsapp, Instagram, Facebook, Twitter, YouTube, bijou, amazone.in etc., for their various purposes. Social media gives us the opportunity to express our thought and views to the world with the help of various kinds of online applications. Through social media we can update our knowledge or skill. It gives the platform to showcase our talent or express it.

In today's era students are addicted to the internet and social media, according to The Cable News Network, the average teenager spends nine hours a day media. Children from the ages of eight to twelve spend around six hours. This time includes watching television, video games plying and continuous checking social media.

Objectives:

1. To identify challenges of social media.
2. To overcome the problem to related social media.
3. To find out the positive and negative effective of social media in education.

Purpose:

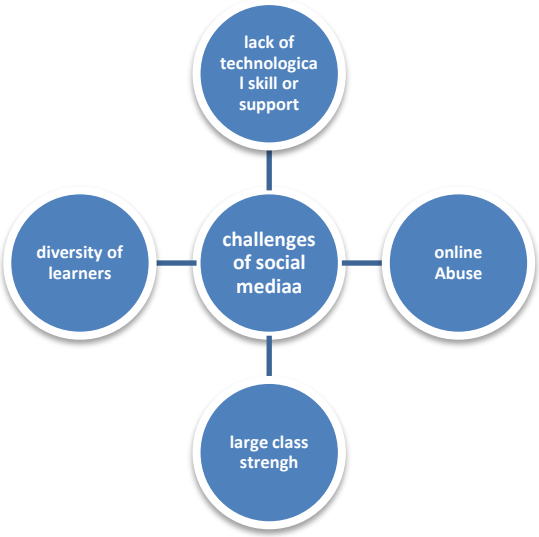
- To find out the use of internet in school either it is in rural and urban area.
- To make people aware about the negative use of social media.
- To know the importance of social media on education level.
- To find out the importance of social media in today's world.

➢ **Challenges of Social Media**

In today's world social media acts as a boon for today's era, but still reflects certain challenges that become disadvantage for less technosavy people. Such as people who become the victims of cyber crimes don't have much knowledge of the use of social media.

Another instance will be the village people who are not aware about the upcoming new applications and websites that may help them in their work.

These are certain challenges among Indian citizens that should be overcome and ruled over, and at school and education institution level, it should be promoted as an important subject to be learn.



1. Lack of technology skill or support :

The school and colleges have the proper technical thing like computer, projector, OHP etc. And as well as skilled teacher who has the proper technical knowledge and they knows the how the handing computer and the use of Social Media, and its importance and the barriers. In most of the school and colleges they have the proper computer lab and it has the computer but they don't have either internet or the skilled teacher, so that they doesn't have any idea about how to handle it. In every school there should be the trainer who guide the teachers how to handle the technology and their uses and importance. First teacher should have the knowledge of computer then and then only they can able to teach the students. Rather than supposed teacher doesn't know their system and how it works then they can't express their knowledge to the student, due to the half knowledge of computer.

2. Online abuse :

Internet has provided a new avenue to enhance personal growth academic enrichment, expression and widespread social interaction. Social media use has becomes integral part of adolescent lives but with its use, teenagers are facing the problem of cyberbullying, cybercrimes and problematic internet use which are highly often associated with various health and legal and ethical issues.

Cyberbullying is defined as any kind of aggression perpetrated through technology. It includes any type of harassment or bullying that occurs through various applications.

Internet and social media is the important source, and every person should has the knowledge about the handling the technology. Now a day's people are using bad use of social media. They are make the funny video which are harm to those people who suffering from it.

Sometimes blackmailing to the others through making the video and photos of our real photos its very ridicules things, especially for women its very harming because, women are posting their photos on social sites and their followers bad using of that photo with comparing very cheap photo on very wrong way. Sometimes boys make their fake account on social site and through that blackmailing to girls who are innocent.

3. Large class strength:

In some schools the administration gathers large size of students which become out of range and it becomes impossible situation to handle such large class strength and expect that the technological terms and its use can be directed towards the students.

Another example can be given of computer labs where more no. Of students can't be adjusted with the less number of computers and it creates disadvantage way of learning for students.

4. Internet access :

It's a very common issue in Indian public schools, that even though the schools have computers and labs but the student doesn't experience the use and access of internet connection which causes their learning procedure.

Due to unavailability of internet sometimes some schools don't get the important news regarding school curriculum, competitions or examination dates in right time.

5. Teacher should have technical skill :

Now a day's technology is the important source and every person should have knowledge about technology and its uses. In every school it has the computer lab and proper net connection as well as school has the skilled and trained teachers. The teacher should know about the each and every things related to the computer. If there is problem regarding computer teacher or the school having the computer teacher but he/she don't have the much knowledge of it, so first school should take the initiative participation to provide the guide who teach the computer to the teachers and then teachers get teaching the students. And school recruit the new teacher for the teaching computer subject so first interviewer should check their computer knowledge and also check that either they are using net on good way or not or doing any fraud or illegal work on the net.

6. Diversity of learners :

Every individuals on this earth are different and such are their perspective and ability to learn things in a classroom every child has a diverse background and learning habits and when talk about explaining subjects with the help of technology then it's not necessary that

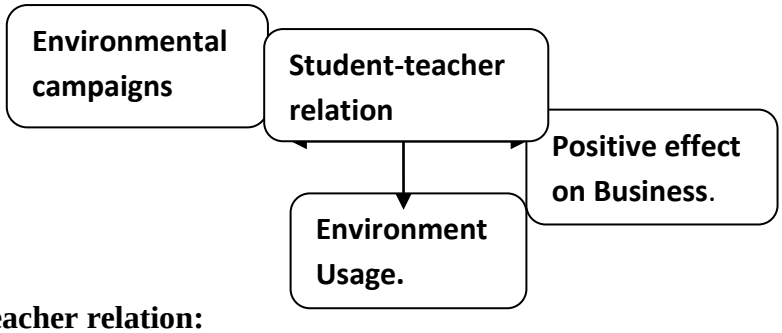
every child will be able to understand the concept in the same way, which makes it a challenging situation for the teacher.

- **Need and Importance:**

- Reliable and fast
- We are seeing education institution adapting the technological development into their system and relying on group resources and mechanism to improve the students life the use if social media in the education provides students with ability to get more useful information to connect with learning groups and other education system that make education convenient .
- There is valuable knowledge to be gain through social media such as analytics and insights on various topic or issues for study purposes.
- Social media is also a medium where student can established beneficial connections for their careers, as an educational institution.
- It is crucial to be active in many social platforms possible, this helps create better student training strategies and shapes students culture.

- **Good Impact of social media on education / environment:**

Social media marketing has the power to increase customer loyalty. Social media plays an important role in every student's life it is easier and convenient to access information, thoughts and communicate via social media.



1. **Student- teacher relation:**

Teacher and student are connected to each other and can make good use of these platforms for the working of their study and education.

2. **Positive effect on Business:**

It is very powerful and effective way of communication there s a positive effect on business, politics, socialization and many more field.

3. **Environment usage:**

The ability for organization to use the "crowd", highly connect through social media, to support and spread environmental massages in rapid dynamic format.

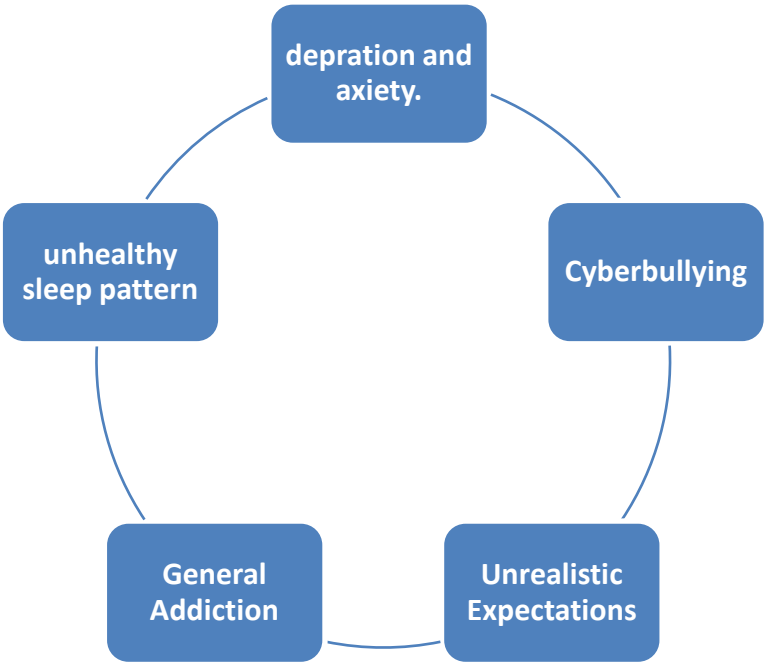
Generally speaking about technology has given us the ability to change some of over behaviours and conduct "greener" business, but where still not keeping up with the pace of the environmental changes happening because of over extra use of resource.

4. **Environmental campaigns:**

It is using the medium to support environmental campaigns and to connect people locally and cross nationally on major environmental issues such as natural and climate change.

- **Negative impact of social media:**

The positive effect of internet (social media) on education or business purpose as well as some negative effect also there such as cyberbullying, privacy and fake news



1. **Depression and Anxiety :**

Spending the much time on social networking sites could be adversely affecting your expression and mood; in fact you are more likely to report poor mental health, including symptoms of anxiety and depressions. Due to more use of social media causing you psychological distress.

2. Cyberbullying:

Now a days due to social media someone can be bullied online anonymously today everyone knows what cyberbullying and most of us have seen what it can do to a person.

In this age "cybebullying" is quite common, and occur to any young person online, and can cause profound psychological outcomes including depression and anxiety sever isolation, and tragically suicide.

Cyber bulling impacts on society in a negative way because it is harm young teenagers mind mentally.

3. Unrealistic Expectations:

Social media helps you to form unrealistic expectation of life and friendships, it is probably comes as no surprise.

The networks that do it most are social networking sites, apps like facebook, instagram, snapchat these are the platforms that several lack online authenticity.

4. General Addiction:

Social media is often described as been more addictive than any harmful things like alcohol and all, various social networking apps being comes to addiction of teenagers

The people can't stay in a single day without checking their social media accounts; just think when was the last time you went a full day without checking your account?

The persons are too mush addicted to the internet and if they don't use social media one day they feel empty and depressed and completely disappeared tomorrow.

5. Unhealthy sleep pattern:

On the top of increase level of anxiety and depression from the more use of social media it is spending too much time on social media can be lead to poor sleep

Numerous studies have shown that increased use of social media has a negative effect on your sleep quality.

➢ **Discussion :**

- To provide use of various technical instrument for their better understanding.
- To guide people to protect their private accounts and change their passwords regularly.
- Now a days for avoiding computer unavailability schools set computer lab as per the number of student's requirement.
- Students can develop their knowledge through using the various educational websites and also update their knowledge.

- Educationalist always in search of modern technologies that enhance quality of education and also serve as a tool of social media. ex- project based learning, smart classroom, video conferencing so for developing technosavysklill among the education sector various experts seminar are arranged
- By creating awareness about proper use of social media pupils can avoid negative impact of social media.
- Through assembly teacher can develop positive technosacy approach among the student.

➢ **Conclusion:**

Every coin has two sides, as the same Social Media have the positive as well negative effects on society and education. Social media play a central and growing role in providing cancer information and the different social media is platforms have a lot of offer for the students. Social media is the tool which can be important space for public discover for development especially among youth.

Social media addiction will rise in future. Internet users will increase in future because it will be much cheaper and accessible thing. Social media is affect on health, work place, education and social life will increase by the end of 2020. In today's youth have constant access to many different way of media through TV, mobile, music, movie, games and internet, Due to social media student and teacher get connected with each other and it can make good use of these platforms for the working of their education. Through social media people can discover new ideas and trends and it is beneficial for society.

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IMPACT OF DIGITALIZATION ON STUDENT TEACHERS IN TEACHER TRAINING COURSE

Chetana Suresh Bhamare (Pg. 100-106)

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Abstract

Now a day each and every person using technologies for various purpose. People are becoming technosavy, by using different various digital technologies and devices. Because of digitalization doing of any work it is easy. There are different uses of digitalization, which people are using for different kinds of work. Like, bank field, administration, commerce field, etc. In sameways ineducational field also digitalization used. Because of digitalization educational process means teaching learning process becomes more interacting, effective and interesting also. In present day have the knowledge of technology it is very important, because now a days world is in the way of digitalized. Many works are totally depend on computer. Because one machine can do the work of many hands. In educational field also teacher can use various kinds of digital learning materials in teaching learning process. It will be helpful for students also and for teachers also. The sample consisted 30 student teachers of teacher training course or college, in Ashoka college of Education, Nashik. The researcher adapted survey method. The findings of the study were, significant of digitalization in teacher training centres or colleges teachers are using various ways for teaching learning process like web-based learning, virtual classroom. Student teachers are having the knowledge about digital learning materials, digital technologies, knowledge about various social networking sites etc. There is another findings that student teachers are using various social medias but they don't have proper knowledge about a particular social media. There is another finding that student teachers are mostly of the time used than doing any other work.

Introduction:

Nowadays or we can say world is going in the way of globalization. Because in every field and everyone using technology in their life. No one we can find in today's time who is not using any technology in their life. In every field technology is used by people. No field is their now a time which is working without technology. In that way in education field also technology, digital learning is using for effective teaching-learning process.

In education field also technology plays important role. Digitalization in educational field important for student's development. Digitalization means the coordination of digital technologies, which are using in everyday life by people. Digitalization is the combination of digital technologies into every of everything that be digitized.

In education digital learning means, 'learning which facilitated to the students with the help of technology. Digital learning is a process facilitated with technology i.e. overhead projector, internet, and smart classroom etc.so teaching learning process becomes more interactive.

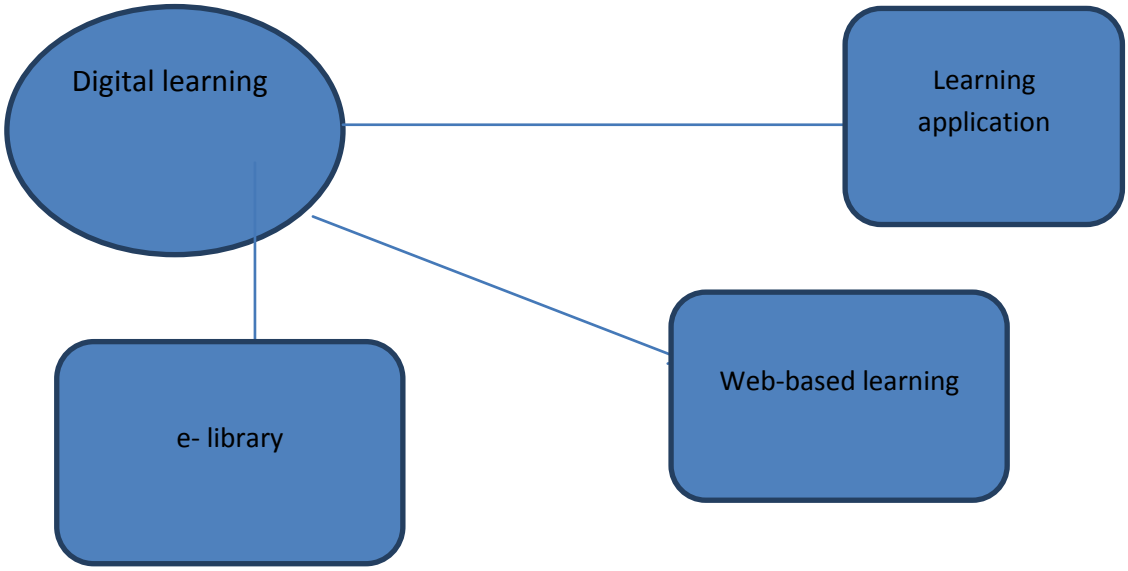
Though digital learning takes place in classroom practice. But technology cannot be replaced by teachers. Its main use of technology bestly use for , to enable students learn easily and through that students engagement and involvement in school activities. The main purpose of technology based learning process becomes lively, and gives direct experience to the students. Through digital learning process will be effective and long term memorable.

One of the important terms that is 'educational technology' that is also one of the area. Means it is the study and it is facilitate learning for improving performance by using technology with the help of using proper technological resources.

Digitalization it is very helpful in educational field. Not only it is helpful for students but for teachers also. Because with the help of digital learning teacher can easily facilitate learning process. One of the term that is smart classroom it is the best example of digital learning. Because with smart classroom learning becomes very interesting and interacting. Because in smart classroom includes smart board, then PowerPoint presentation, internet access also includes in smart classroom. Teacher can show to the students various videos related any content, immediately with online facility. In this way teacher can use digital learning in teaching –learning process.

Way to study through Digital learning includes:

1. Edusat
2. Educational websites
3. Learning apps [application]
4. E-learning
5. Web-based learning
6. Recorded lectures
7. Webinars
8. Blogs
9. PDF files

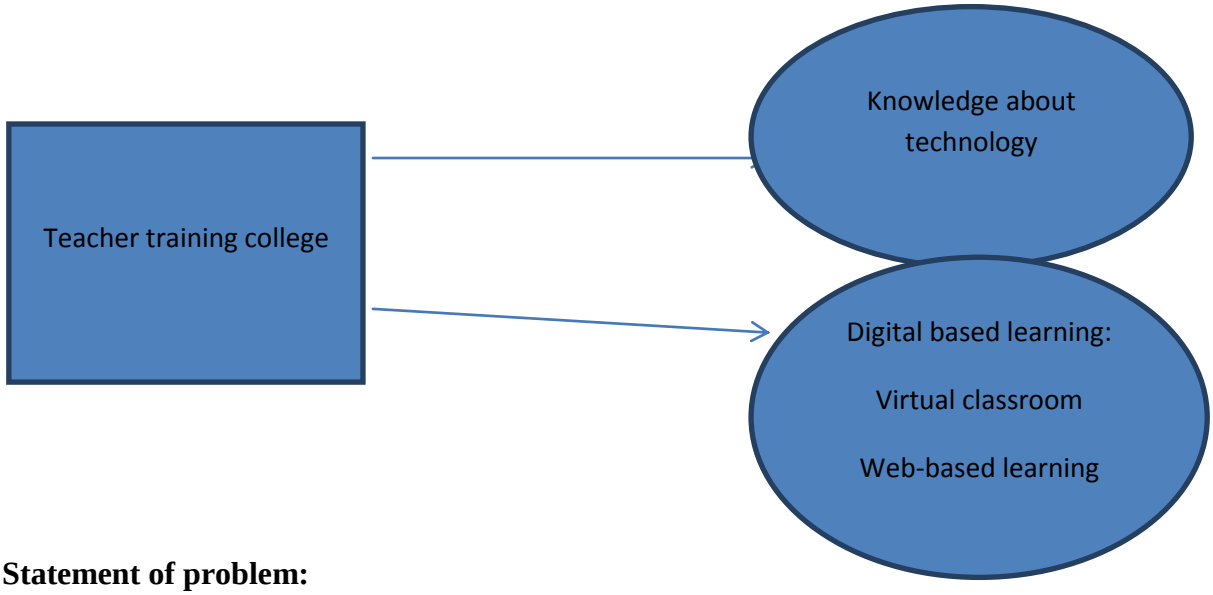


Because of digitalizationwhole world in the way to the globalize citizens. Each and every age of people technosavy. Because of with all these resources and tools technology is also one of the powerful tools in education. Through using all these materials which are online available, it can be called as digital learning.

Digital learning can be done with mobile, smart phones, laptop, tablets all these devices. Now a days in Indian education system also using digital learning in classroom teaching practices. It is very positive change in Indian education system. Traditional teaching process transforming into technology-based learning. But we cannot it is fully replacing into technology based but in some percentage we can say that as per the society change their thoughts also change and demands of society also changed.

In some of the teacher training colleges teachers are using digital learning. Because of that student teachers are also aware about various technologies. As per the society changes in every field way of working and modification also changes. In teacher training centres or colleges also teacher training their student teachers as per the today's need of society.

In this way teacher training colleges teachers training their student teachers about used of technology.



Statement of problem:

- To study of impact of digitalization of student teacher in teacher training course.

Objectives:

1. To find out about the awareness of digitalization of student teachers in teacher training course.
2. To find out impact of digitalization in teacher education course.
3. To find out whether there is any significant awareness about digital learning in student teachers.
4. To find out need of digital technology in education.

Operational definition:

Digitalization is a process where use of technology, which people are using in their life with various technological devices.

Need and importance:

Need:

i) For development of student teachers.
ii) For individual development of student teachers.
iii) For giving right direction to students life.

Importance:

- With the helpful of digitalization teaching learning process becomes easy and interesting.
- It is helpful for student's engagement in classroom.
- It is helpful for acquire software skills.

Hypothesis:

1. There is significant impact of digitalization on student teacher in teacher training course.
2. There is significant need of digitalization on student teacher in teacher training course.

Research Methodology:

Researcher used survey method for this research work. For doing this research work researcher did survey by using tool that is questionnaire.

Sample:

Researcher used sample of 30 student teachers from teacher training college that is 'Ashoka college of Education' Nashik.

Tool for data collection:

Researcher used tool that is questionnaire for this research work. For taking review about 'Impact of digitalization on student teacher in teaching training course'.

Interpretation of data:

Researcher used tool for data collection that is questionnaire. Through that researcher analysis or interpret data through questionnaire.

By using questionnaire research interpret data. As per the researchers questionnaire researcher used questions related about digital learning materials, social media use, knowledge about social media, digital learning.

The questionnaire was prepared by the researcher for student teachers of teacher training course of 'Ashoka college of Education'. By using this questionnaire research got data that is 'Impact of digitalization in teacher training is positive. Because after solved questionnaire researcher got the result that student teachers are making use of digital learning for educational purpose, then whatever social media are using by student teachers, they have knowledge about that social media.

Statement	**Response**		**Percentage**	
	Yes	No	Yes	No
1.	30	00	100%	-
2.	30	00	100%	-
3.	30	00	100%	-
4.	12	18	40%	60%
5.	30	00	100%	-
6.	30	00	100%	-
7.	12	18	40%	60%
8.	30	00	100%	-
9.	28	02	93.33%	6.66%
10.	30	00	100%	-

11.	18	12	40%	60%
12.	07	23	23.33%	76.66%
13.	27	03	19%	10%
14.	16	14	53.33%	46.66%
15.	26	04	86.66%	13.33%
16.	11	19	36.66%	63.33%
17.	08	22	26.66%	73.33%
18.	15	15	50%	50%
19.	30	00	100%	-
20.	30	00	100%	-
21.	08	22	26.66%	73.33%
22.	24	06	80%	20%
23.	21	09	70%	30%
24.	25	05	83.33%	16.66%
25.	30	00	100%	-

The researcher took 30 samples of student teachers from teacher training college that is 'Ashoka college of Education'. Where questions were asked by the researcher about personal response and some questions were asked by the researcher that was objective type questions, it was related to the knowledge about digital learning materials and about knowledge about the social media.

Objective questions were asked by the researcher that was 17. Out of 17 also there are 3 questions related to personal use of social media. In third chart there are right answers given by student teachers out of 17. Then there are personal responses questions mean yes/no type questions were asked in questionnaire that are 8. So it was related to the individual opinion about the use of social media and digital learning resources. There are yes/no type questions that was asked in questionnaire, all 8 yes/no type questions considered by the researcher that all are right. Because it was everyone's opinion.

In questionnaire there are 25 questions were asked by the researcher that is objective type and yes/no type questions. So what researcher wanted to find about 'Impact of digitalization on student teachers of teacher training course' this objective found by the researcher, that there is a positive impact of digitalization on student teachers of teacher training course.

Discussion:

All the objectives set by the researcher is fulfilled. The researcher wanted to check that student teachers awareness about digitalization, as per solved questionnaire researchers objective fulfilled. There is another objective set by researcher that is impact of digitalization on student teachers of teacher training course, as per solved questionnaire it is proved that there is positive impact of digitalization on student teachers. There is another objective about need of digital technology in education , so as per researchers findings student teachers are

feel that there is a very much importance of digital technology in education, student teachers are also aware about digital learning and they are also making use of digital learning for educational purpose.

Conclusion:

In education system digital learning should be used. So as per the questionnaire which researcher used for research work through that researcher conclude that student teachers are using digital learning, digital technologies, digital devices, various digital learning materials, and social media. All the objectives set by the researcher are fulfilled. Because all student teachers are aware about digitalization, they also know the importance and need of digital learning in education.

Hypothesis by the researcher that is there is significant of digitalization on student teacher of teacher training course, also fulfilled.

It will be helpful for academic achievement of students.

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EDUCATIONAL TECHNOLOGY AND 21ST CENTURY SKILL GAP

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Abstract

Today fast changing world requires students who not only possess strong skills in areas such as language, arts, math, science but must able to adept at skills such as critical thinking, problem solving, persistence, collaboration, cooperative skill and curiosity. The requisite 21st century skills fall into three broad categories:

1. learning and innovation skills
2. Digital literacy skills
3. Career & life skills

Today's world is technology based & it demands for technosavy person only. So Digital literacy skills are the base of the technology world & technosavy person too. This Digital literacy skills consist following aspect in it;

- *Social media*
- *Search engine marketing*
- *Analytic*
- *Content marketing*
- *Email*
- *Mobile*
- *Strategy & planning*

So all this skills makes people able to stand in front of the world and showcase their technosavy skills, abilities, & aptitude in front of them.

Key concepts: *Educational Technology, skills of 21st century, digital skills*

Introduction:

21st century Skills comprise skills, abilities & learning depositions that have been identified as being require for success in 21st century society & workplaces by educators, businessman, leaders, academics, & students. This is part of a growing international moment focusing on the skills required for students to master in the presentation for success in a rapidly changing digital society. Many of skills are also associated with deeper learning, which based on mastering skills such as analytic, reasoning, complex problem solving, & teamwork.

During the latter decades of 21st century, society has under gone an accelerating pace of change in economy & technology. Its effects on work place & thus on the demand on the education system preparing students for the workforce, have been significant in several ways.

Today, India is one of the world's top destinations for education. Now a days technology has advanced rapidly to transform the way students in India consume educational content. Education is being imparted to them through flexible & non intrusive formats.But now a days pupils, & parents are not able to handle technology appropriately. So they need to have to learn 2st century technology skills.

Statements of problem:

To study the scope of education technology & the gaps of 21st C skills.

Objectives:

1. To study the scope of education technology in today's world.
2. To find out the technology skill gaps in 21st century.
3. To identify various ways to solve skill gaps in 21st century.

Conceptual definition:

- The Association for Educational Communications and Technology (AECT):

  "Educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using and managing appropriate technological processes and resources."

- The Encyclopedia of Educational Technology:

  "Educational technology is a systematic, iterative process for designing instruction or training used to improve performance."

- Michael Spector

  "Educational Technology involves the disciplined application of knowledge for the purpose of improving learning, instruction and/or performance."

Operational definition:

The study of technology used in education & teaching learning process to enhance its proficiency & efficiency for better outputs & results.

Need and Importance:

1. It helps to defined the concept of education technology.
2. It make pupil & teacher aware about various technologies of 21st century.
3. It make us aware about various skills of 21st century.
4. It helps teacher to use different technology in classroom.
5. It enhance digital skills of pupils.

Educational Technology (ET) :

Educational technology is "the study & ethical practice of facilitating learning & improving performance by creating, using & managing appropriate technological process & resources. Education technology is the use of both physical hardware & educational theoretic. Education technology try to analyze, design, develop, implement & evaluate process & tools to enhance learning. Education technology is an important part of society today. Education technology encompasses e-learning, instruction technology, computer based instruction, internet based training, flexible learning, online education, cyber learning, virtual learning, network learning, project based based learning, P.L.E, & digital education.

Education technology is a process of integrating technology into education into positive manner that promote more diverse learning environment and a way for pupil to learn how to use technology as wall as their common assignments. Education technology in not restricted to high technology but is anything that enhance classroom learning in the utilization of blended, face to face, or online learning.

Education technology emphasizes communication skills & approaches to teaching and learning through the judicious use & integration of divers media. By the mid 1970s education technology borrowed the term "system approach" from management studies & "corrective feedback" from cybernetics. This winded the scope of education technology as the teaching learning process was examined in holistic manner. The arrival of digital convergent media encourage interactivity & inter-connectivity. This added a new dimension to education technology.

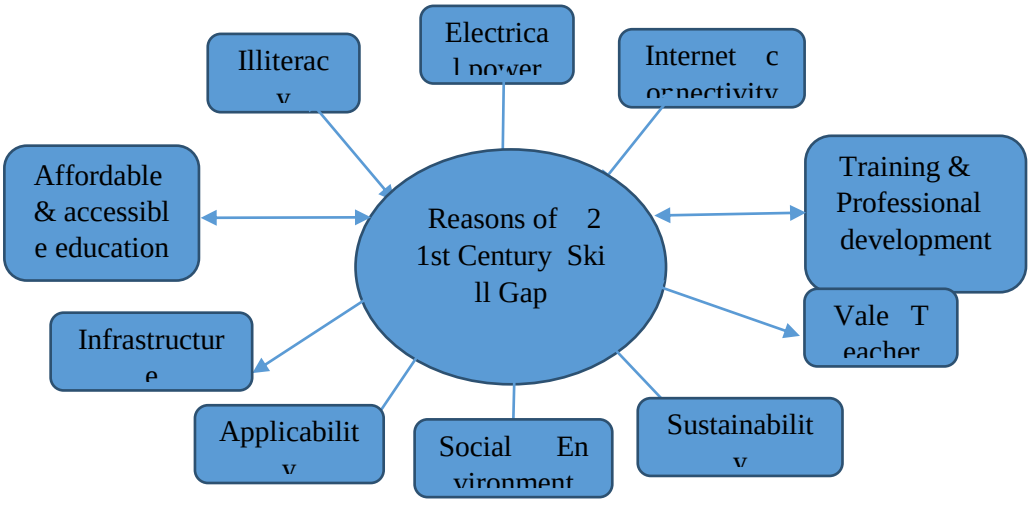
Characteristics & Nature of Education Technology:

1. It is based on scientific & technological advancement.
2. It is more a practical discipline & less a therotical one.
3. It is a fast growing modern discipline.
4. It make sure of the research findings of psychology, sociology, engineering, science & social psychology etc. & applies the some to the filed of education.
5. It brings pupils, teachers, & technical means together in an effective way.
6. The basis of education technology is science.
7. It is dynamic & ever-evolving in nature as per its aspects & discipline needs.
8. Education technology is a continues dynamic, progressive & effect producing method.

9. Education technology studies the effect of science & technology upon education. In other words, science & technology are used under education . Hence, it is the practical aspect of science.
10. New conceptions are possible due to education technology such as programmed learning, micro-teaching, simulated teaching, interaction analysis, video tape, tape recorder, projector & computer etc.
11. Education technology can't solve each & every problem of education. It can be used successful in teaching & instructional system only.
12. Education technology is comprehensive. It is associated with all aspects of educative process method, teaching strategies, learning materials, handling of various equipment, etc.
13. It is process oriented technique.
14. It is wider as like education only.

Reasons Behind 21st C Skill Gap:

Education technology will continuous to be implemented incrementally in many parts of the develop world. But so many factors are affecting on them that create barrier to education technology processing. That are the reasons behind 21st century skill gap. That are follow as;



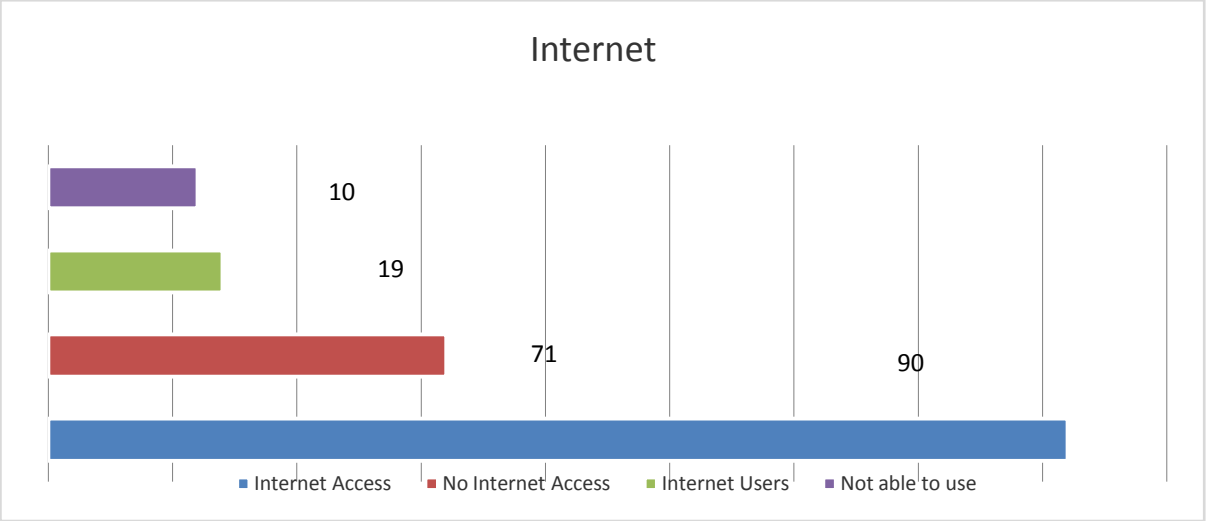
- **Electrical power:**

It is fact you need power to run technology device & until power is widely available reliable and affordable for many in India. Even if people could not afford to perches various electronic gadgets, access to power as noted above, would improve their lives because may

would be able to read after dark & would be healthier as may would not be expand to fumes caused by burning fossil fuels & plant maters.

- **Internet connectivity:**

Only 71% of Indian people know how to access internet. The potential to increase internet connectivity as risen sustainability during the last four years due to the laying & planned installation of marine technology & telecommunication cable.



3. Training & Professional Development:

Electrical power, internet bandwidth & electrical device may all be present, but teacher need how to use them effectively.

4. Value teacher:

Teacher should be valued more, yet in many places they are not. Today, one needs teacher who are willing to try new methods and technology & willing to fail as may strive to in improve themselves. Trying, failing & succeeding is what learning is all about.

5. Sustainability:

The outcomes of any educational technology project in the developing world must have at least to aspects. First how does the technology or instructional method improve learning & second, how will the technology or method be sustained once initial.

6. Social Environment:

Technology can either enable or restrict depending on the context & depends on the environment.

7. Applicability:

As education technology goals is to provide quality learning for the students with the use of technology, it is important that the tools that the teacher will going go use in the classroom is applicable with the students.

8. Infrastructure:

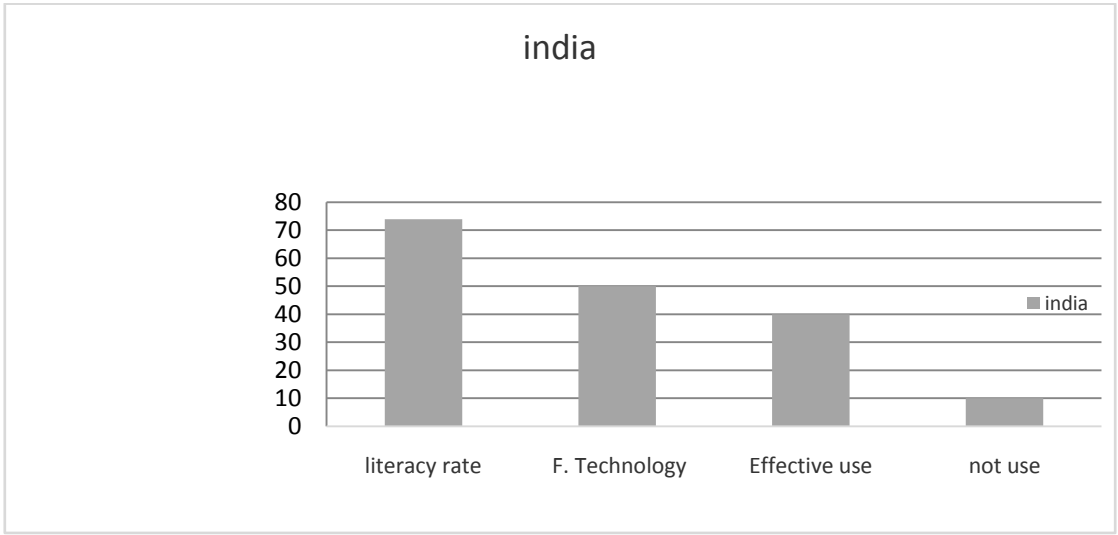
Lack of disabled friendly schools, clean & adequate atmosphere for learning, computer lab, high technology tools, electricity, projector etc. are require high coast. And all Indian educational institution are not able to afford this things.

9. Affordable & accessible education

India is a developing country. Indian economy badly affect on people's use of technology because they are not able to connect with the education technology. There is massive deficit of access to high quality education both at the primary & high school level. The coast of education technology one of world's greatest population has been increasing at a steady pace.

10. Illiteracy

India has only 74% literacy rate and only 50% of Indian are familiar with the technology but not able to handle it thoroughly. So Illiteracy is stand as barrier in education technology & skill gap in 21st century.



21st Century Skills:

India ranks 3rd among the most attractive investment detestation for technology transaction in the world. So for that every one need to have different education technology skills that make them technosavy.

- Enthusiasm for learning
- Deep understanding
- Application for learning
- Examination, inquiry, critical thinking & reasoning
- Technology
- Electronic presentation skill
- Word processing skill
- Computer network knowledge application to your school
- Knowledge of pads
- Educational copy-right knowledge in that
- Computer security knowledge

10 Tech Skills Every Student Should Have:

1. Internet Search: Students need to know how to do a proper internet search, using search terms and modifiers. This skill is needed for school, work and life in general.

2. Office Suite Skills- students need to now how to create, edit, and modify documents, presentations, and spreadsheets. Businesses still use MS Office for the most part, but i works, Open Office / Libre Office, and are all getting more popular. They all work similarly so the learning curve when switching isn't that big.

3. Self learning of tech and where to go for help- knowing how to search a help menu on software or hardware, where to go to find user forums for help, and where to find the manual for technology is a huge skill that many do not know about.

4. Typing - yes, typing.I can get much more work done since I know how to type, then people who don't. It's a skill that is necessary for any kind of writing.

5. Social Media- how to properly use social media for school and work, how to protect yourself on it, the issues of cyber bullying, connecting with others in your profession (PLN).

6. Netiquette - Internet/Email/Social Media etiquette- proper way to use the internet, write professional emails, use social media in relation to your job (not complaining about the boss.

7. Security and Safety - antivirus, spam, phishing, too much personal information sharing, stalkers, and more are all issues they need to know about.

8. Hardware basics and troubleshooting- knowing what different parts of technology are called, how to make minor fixes, and how to do basic troubleshooting for Wi-Fi, networks, OS won't load, etc.

9. Backup data - with all of the data that students create for school and work, it is important to back it up and have access to it at any time.

10. Finding apps and software- how to find, evaluate, and use apps for school and business. Also, how to find quality, free alternatives to paid software, apps

11. Copyright and Citing Sources- students need to understand copyright laws and rules, how to cite a resource, and how to integrate someone else's work into theirs properly.

Suggestions:

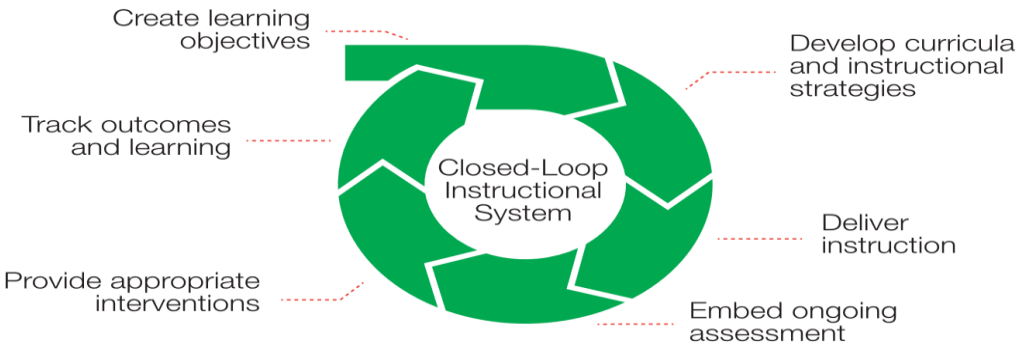
The potential of technology to help close the skills gap

Numerous innovations in the education technology space are beginning to show potential in improving education and helping address skills gaps. To help lower the cost and improve the quality of education, education technology is being used to:

4. Find creative solutions to fundamental challenges in many countries, such as a lack of well-trained teachers and broadly accessible technology infrastructure
5. Make education available to a broader audience at a much lower cost or provide higher quality instruction at the same price
6. Enable easier scaling up of promising models within local markets and the transfer of best practices across markets in ways that can be sustained over the long term
7. Gain insight into how and what students learn in real time by taking advantage of the greater variety, volume and velocity of data
8. Increase teacher productivity, freeing up valuable time from tasks such as grading and testing, which can be used for differentiated teaching of competencies and character qualities

Of course, technology is only one element in a portfolio of vital solutions that aim to close the 21st-century skills gap. These include strategies such as better teacher preparation, new modes of learning and wraparound services for struggling families.

But when educators add education technology to the mix of potential solutions, we find they are most effective if applied within an integrated instructional system known as the closed loop. As in engineering or manufacturing, the closed loop refers to a system that requires an integrated and connected set of steps to produce results.



Conclusion:

Technology is the foundation of digital world. So education technology is the source of digitization in Education system. Education technology is taught as a subject, education technology is a value addition to quality, relevance, appropriateness, & other such attributes, transforming education by making it dynamic & responsive to the passions that move the learners & arouse their curiosity & desire to learn. The desire on the part of some people to leave the term education technology behind is rooted in the awareness that historically the implementation of education technology in India has been centered on machines & the educational software related to them. Such interpretations are easy to understand. So in this way education technology helps educationalist to solve 21st century skill gap. And in this way through the means of education pupils, teachers, & other resourceful people learn 21st century skills and can become technosavy & digitalize person.

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BRIDGING THE GAP: ENVIRONMENTAL EDUCATION AND INTEGRATION OF TECHNOLOGY

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Abstract

Environmental education is very important issue. It is duty of teacher to inculcate environmental awareness among students. Students in Indian school come from diverse background .Some may not have easy access to technology. As 21st century educators it is our duty to find strategies that level the educational playing field for all learners. Teachers can foster the student engagement in activities that support appreciation of the environment and natural resources in understanding the environmental issues. Across the nation, schools are increasing access to technologies in the classroom. Therefore, providing education with appropriate resources and strategies supports environmental literacy should be essential component of all technology plans.

Introduction

Students in India come in school from diverse needs, particularly in terms of their access to nature and technology. It is our job as a teacher to help level the playing field and provide all students an equal chance to success. By integrating the two seemingly opposed areas of nature and technology, we can create an opportunity for young children to become both technologically and environmentally literate. In this article we explore how technology can be used to encourage students to engage in activities that will help them to appreciate nature and environmental issues.

Nature Deficit

Over 50% of students of the Indian population now lives in urban areas . When Children go outside they often see only streets building, shops, cars and crowed of people. Students do not know the importance of reducing pollution and recycling .Environmental education encourages students to think globally but act locally regarding environment and environmental issues Environmental education is not a study about plants and animals but it is invaluable tool for teaching critical thinking skills and applying these skills to the students' everyday world.

Necessity of integration of technology

Education can integrate technology and media with environmental education through activities that explore the skills of creative thinking, problem solving qualities, communication skills, and collaborative nature. Curriculum should be

- Based on research and theory
- Integrates authentic experiences
- Child centered and inquiry based
- Based on child differentiation

Effective use of technology in teaching

One of the most remarkable changes in the classroom over the past two decades has been the incredible advances in classroom technology. According to the Indian Census Bureau, in 2011 , 85% of households did not have computer and internet access. This means that many students depends on the school setting .Therefore it is necessary to provide them with necessary technological practice to prepare them for success as they go through the school system and prepare for the higher education.

In order to introduce technology in age appropriate and educationally effective ways Educators use following strategies-

1. **By keeping himself abreast with the new development in the subject-**

Select, use, integrate and evaluate technology and interactive media tools in international and developmentally appropriate ways,giving careful attention to the appropriateness and the quality of content, the child's experience, and the opportunities for co-engagement.

2. **Use of proper technology for teaching-**

Prohibit the passive use of television , videos DVDs and other non-interactive technologies and media in early childhood programs for students' .

3. **By using reference Sources-**

Teachers prepare content for teaching or presentation with the available books on environmental studies. Teachers should not depend on bookish content because content is changing very fast due to knowledge explosion.

There are several reference sources that can be used.Some reference sources are as follows-

- http://www.hpcc.astro.washington.edu/scied/sciref.html
- htpp://www.accurate-eye.com.au/earth.html

We can give references from National Geographic channel.

4. Creative assignments-

Teachers should give homework, assignment which requireInternet surfing by the learners. Project work should be given by teachers with the help of internet and works on projects are done by students taking guidelines from internet.

5. Online tuitions and coaching-

Students can get home tuitions and guidance online. Some home tuitions sites are given below-

-The Biology project (http://biology.arizona.edu/)

- www.schoolnetindia.com

- http://www.ericse.org.homework.html

Tools for teachers

1) Webcams

Webcams can bring distant places to the classroom allow learners to observe event in real time.

Eg. If migration is the topic of the day , watching polar bears migrate in Canada can be accomplished via Polar Bear International webcam. Animals active with webcams and sometimes not. But we can see snippets of the animals activities from the previous days from the data recorded by scientists. Webcams can also allow videoconferencing and collaboration with other children, educators, or experts across the world.

Here are some webcams –

- Eagle Cam
- Panda Cam Atlanta Zoo
- Polar Bear International
- Volcano Webcams
- NOAA Webcam

2) Cameras and videos

Digital cameras and videos equipment offer children an opportunity to share their views of the environment with others. A digital image can capture a moment in time and allow children to revisit the phenomenon or location. Students can use cameras and video to record data. Student can take photos of trees , shrubs, insects throughout the year. students can take pictures of specific shapes or colours.

3) Mobile Technology

Mobile technology is entering in classroom with very speed. Teachers and students can use variety of technologies at their fingertips. Smart phones, iPods, tablets are providing learners access to vast amount of interactive and collaborative tools. Students can use variety of technology on mobile inside the classroom and beyond. A collection of environmental education apps offers the classroom teacher opportunities to take instruction outdoors.

As 21st century teachers it is our responsibility to give best knowledge to our students. Technology needs to be engaging and support decision making. So schools need to focus more on the effective use of technology in the classrooms. In the future, we would see a proliferation of content using Augmented Reality (AR), Virtual Reality (VR) and Mixed Reality (MR) technologies. In terms of pedagogy technology can help adoption of flipped learning to great effect.

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DIGITIZATION IS THE WAY FOR INCLUSIVE ACADEMICS

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Abstract

In 1980s before digitization, all the processes were carried out manually in academic institutions. Admission, examination, transcript request etc was manual, Notices, circulars Course material was in printed format. Very little use of educational adds in teaching and learning process. This manual activity was posing several challenges in inclusion of all the stakeholders in academic system. Digitization of academic system has resolved almost issues for creation of inclusive academics. This paper presents a review on impact of digitization for development of inclusive academics. How digitization has helped to include every one regardless of their physical ability, age, gender, ethnicity, geography and demography etc. The paper also highlights various computer aided assistive technologies for inclusion of persons with disabilities in academics and its role in digital academic services.

Keywords: *Inclusive academics, Impact of digitization, academic system etc.*

Background:

Before digitization, schools, colleges and universities ware communicating all the academic services manually using printed documents, Institutional brochures, course admission forms, notices, circulars, letters, academic course material etc was in printed format. Persons with print disabilities like persons with blindness and low vision were finding all the information inaccessible to them since they were unable to read and comprehend such information without assistance of sighted person. Communication to the students, faculties and other stakeholders ware manual through post and courier. It was time consuming. All the non digital communication was very much difficult to understand for specially persons with disabilities. A person with visual impairment was required braille course material which was challenging to provide them in timely manner. Persons with disabilities have to struggle a lot for higher schooling during course selection, admission, classroom learning, exam

preparation, writing exams, project and internship, research work, placement and recreational activities.

Faculties and students were using mechanical educational aids in instructional designing and delivery that was not helping to include persons with all kinds of abilities. Wooden board and markers, papers etc was insufficient to convey information to the students with disabilities. Faculties with disabilities were also having difficulties in operating and preparing for talks and presentations.

Digitization has changed the entire scenario and it has played crucial role in the inclusion of persons with all kinds of abilities with varied background.

Impact of digitization on inclusive academics:

As more and more university information and educational materials migrate to the web, it has increasingly becomes accessible to people with disabilities. Functions such as course registration, tuition payment, financial aid applications, notices, circulars, news and events and so on are central to any student's experience at a university. When those functions are available on the web, they allow for access any time, from anywhere not only to the individuals with disabilities but also all others. If the content is constructed and with web accessibility standards and guidelines, then students with disabilities are afforded a new level of freedom previously inexperienced. For example, students with blindness can use computer software that reads the web content out loud to them.thus eliminating their previous reliance on other people to read the content to them. Persons with low vision can enlarge the digital content and read it. Persons with motor disabilities can access the digital content with the use of speech recognition software. Persons with auditory and speech impairment use sign language interpreter. Persons with cognitive and neurological disabilities can use augmentative and alternative communication software tools. On the other hand, if the content is not digitized, then students with disabilities will be denied the benefits that should be available to them to the same extent that it should be available to all other students.

In order for this to happen consistently over time, universities and colleges must adopt both a policy and a system that supports digitization of institutional programs, services and activities. Teachers, students, researchers use internet for their routine academic assignment. Blogs posts, forums, social media, Videos are very commonly used by them because it is easily accessible to everyone including persons with disabilities.

Digitization and Universal Designing for Learning:

Digitization is the key driver for Universal Designing for Learning as many tools and applications uses digital system such as web, digital projectors and displays, audio devices, learning management tools etc.

Multi model instructional design and learning is facilitated by Digital systems. Digital content can be available in many forms such as text, audio and video, large print, Braille, pictorial and graphical etc. Also it is very easy to convert digital content in any format in short time.

Digitization provide several options for learning such as distance learning through online programs, classroom learning through various means, Practical learning in Laboratories etc.

Digitization of Libraries:

Digital or online libraries has crucial role for inclusion of persons with varied abilities. All type of study material such as books, journals, magazines, short articles etc is readily available in digital library which can be either read by persons with disabilities with the use of computer aided assistive technologies like screen readers, screen magnifiers, sign language interpreters etc.

Conclusion:

Digitization of institutional programs, services and activities has made academics more inclusive and accessible for every one including persons with disabilities.

It is recommended to the academic institution to make it's all the processes digital if they wish to make their academics inclusive and accessible.

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DIGITAL ETHICS FROM LOCAL TO GLOBAL- ISSUES AND CHALLENGES

Samir N. Chavan (Pg. 123-125)

Introduction:

The use of Information & Communication Technology is playing significant role in manufacturing, services and processing which has considerable share in India's Economy. Digitization is playing important role in Education as well. Considering its importance and potential in India the Union Government has also launched a scheme called 'Digital India'.

The government is using digitization for implementing various schemes and services through electronic system also called as E-Governance like land record digitization, railway computerization, digital literacy, digital education, digital mapping etc. Now digitization is in full swing in India from Local Level to Global Level. The development in digitization has raised many ethical issues and challenges which are required to be addressed.

Concept of 'Digitization':

The Digitization is a process of converting data or information into digital format organized in 'Bits'. The term generally used when different kind of information like sound, object, text, voice or image converted into single binary code.[1] The process of Digitization occurs into two parts – Discretization and Quantization. There are different definitions of the term 'Digitization' some of them are as follows:

As per the Techopedia, it defines Digitization as:

"Digitization is the process of converting analog signals or information of any form into a digital format that can be understood by computer systems or electronic devices. The term is used when converting information, like text, images or voices and sounds, into binary code. Digitized information is easier to store, access and transmit, and digitization is used by a number of consumer electronic devices."[2]

The Oxford dictionary defines Digitization in following words:

"The conversion of text, pictures, or sound into a digital form that can be processed by a computer."[3]

[1]Available At:https://en.wikipedia.org/wiki/Digitizationon visited on December 18, 2018.
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The Merriam-Webster dictionary defines Digitization as:

"The process of converting something to digital form".[4]e.g. i) the digitalization of printed books. ii) Patenting has become increasingly critical because technology plays an important role of digitalization of payments, online security and information exchange of financial institutions. [5]

Digital Ethics:

Now a day's most of the people are using smart phones, internet, social media and computers for various purposes which also led to various ethical issues like infringement of privacy, internet surveillance, cyber related crimes etc. Digital ethics in broader sense deals with the effect of Information and Technology on our Society, Nation and Environment. [6]

The theory of digital ethicsis applicable at individual level and at group level. The concept of Digital Ethics is based on the personal code of conduct and legal regulations as well. The use of Digitization should not pollute social or natural environment. Digital Ethics is nothing but a social responsibility in which individuals are to be held responsible for fulfilling their duties. The individual actions should be positive and must benefit the whole community. The balance between the use of Digitization and social welfare must be maintained.[7]

Need of Digital Ethics - Issues and Challenges:

Till 2021 India will have around one billion internet users and to regulate and maintain the equilibrium in society; law ethics and rules are require. The development in digitization lead many challenges like of misinformation, fake news, false propaganda and enmity between the communities are some gray areas which required to be regulated and hence legal provisions are important. Following are some laws to regulate the digitization in India are:

The Press Council Act, 1978

The Cable Television Networks (Regulation) Act, 1955

The Cinematograph Act, 1952

The Information Technology Act, 2000.etc.

[4] Available At: https://www.merriam-webster.com/dictionary/digitalization visited on December 18, 2018.
[5] Ibid.
[6] Rafael Capurro, 'Digital Ethics', 2009
Available At: http://www.capurro.de/korea.html visited on December 18, 2018.
[7]Available At: https://www.pachamama.org/social-justice/social-responsibility-and-ethics visited on December 18, 2018.

Conclusion:

The government of India has initiated the programme of inclusive growth in areas of electronic services, products, advertisement, manufacturing and job opportunities through digitization.[8] India has the highest potential in Digital development in the world, many government and private initiatives in digitization helping nation for the fast development. The development in digitization has also lead to various socio legal issues and challenges from local to global level which required to be addressed not only at National level but international community should join hands to deal the challenges.

[8]Available At: https://en.wikipedia.org/wiki/Digital_India visited on December 18, 2018.

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FEASIBILITY, AFFORDABILITY AND EFFECTIVENESS OF DIGITIZATION IN EDUCATIONAL PROCESS WITH REFERENCE TO YCMOU

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Abstract

Information and Communication Technology is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning. ICT plays an important role in Distance and Open Learning education it gives healthy teaching learning platform to the student as well as counsellor. Digitised information communication system are using in Yashwantrao Chavan Maharashtra Open University. This University provides non-print and supportive learning Material through EDUSAT, Yashwani Radio, Online lectures. YCMOU is applied the digitization in Admission Process, Teaching-Learning and Examination and Evaluation process. This study will eventually help to understand the feasibility, affordability and effectiveness of digitization to impart knowledge in such Open University where students come from both urban and rural areas of Maharashtra State.

***Keywords**: Feasibility, Effectiveness, Affordability, Teaching, Learning, Examination, Evaluation*

Introduction: -

The Yashwantrao Chavhan Maharashtra Open University (YCMOU) was established in July 1989 as the first University in the Maharashtra state which is wholly dedicated to Open and Distance Learning, in this research study. Researcher has studied about the effective use of digitization in various educational systems. The University provides print-based materials, recorded lectures, library recourses, online lectures, Student support facility, online programming, earn and learn facility, MOOCs Programs etc. In each and every section we can see the huge digitization in YCMOU. The main aim of the YCMOU is to become a Mass Varsity and to make available to the common man, educational programmes that are of practical use in his day-to-day life and those that provide better prospects for the future. The University offers several offline programmes and has also embarked on a number of innovative online initiatives. In this research paper researcher has discuss various areas University system where digitization can use feasible, affordable and effectively, because the

educational system and processes are greatly influenced by the incredibly rapid technology changes.

YCMOU is using digitization in various levels such as admission process, teaching, learning and Evaluation and examination process.

Digitization of Admission Process

University has developed Software for admission for all programmes of various certificates, Diplomas, Degrees, PGs and Research Degree level. Every year up to 6 lack students are getting admission for various programmes. It is open for all women and men adult learner for the admission there is no limitation of age factor above 18 years. At the very beginning of the academic year university has published an advertisement in every local newspaper and all state news channels all over the Maharashtra state, also an advertisement uploaded on university website. In the advertisement detail information regarding timetable of the admission, extended schedule, fees structure, and university programme wise prospectus were given. For the every programme Admission University totally follows online admission process, to make it comfortable for Learner University provides all detail guideline of the admission as well as a sample admission form given on website, admission form to be filled in English language only name of the candidate is to be written in devnagri (Marathi) font. Document, photo, signature uploaded facility is provided. Admission fees submission facility is in the software apart from these net banking, online payment facility also provided to the students. Student of Maharashtra state can fill admission form at any recognized study centre, at home, at cyber place etc. After the admission process student gets confirmation and PRN by SMS on students register mobile No. B.Ed admission process is one of the best examples for the same. Students enrolment update list were sent online to the respective study centre with PRN no. Study centre get financial share through online mode.

Digitization for Learning

University has developed their own study material in form of print and non print material. The language of study material is very simple and easy to understand for students. On the basis of Study Material student gets employment and skilled human resource person. The structure of study material has well formatted by the expertise in form of Self Instructional Material. The content of study material is well structured and covers all the points of syllabus even it is verified by the educational expert people. To make learning process more comfortable, University has provided print Material along with audio video recorded CD/Cassettes to the students. University develop their own non print online

educational programmes and its publication on website. University has their own Audio Video Centres for developing the learning material. YCMOU has EDUSAT for teleconferencing lectures and it is using single mode and also two way mode. University, Regional Centres and study centres has linked through website/email for students problem solving. University has Yashwani Radio and lectures are delivering to students through this Radio. Digital library and recently university is developing their own MOOCs pdf format Books, E-journal, Resource Information and Home Assignments facility are available on University website.

Digitization in Teaching/Counselling Session

Counselling is therefore a means of communication between the counsellor and Learner in which the counsellor assists the learner to understand both the negative and positive life challenges. This, therefore, calls for counsellors in ODL to acquire highly effective skills to be able to assist students understand the learning challenges as a result of the effects of distance on the ODL student which will subsequently lead to low learning motivation (UNESCO, 2004). As per the above mentioned definition of UNESCO, University has defined the counselling schedule for distance learner. Most probably all the Counselling session fixed in holiday, summer or vacation for the learners convenient. The mode of counselling of contact session is mostly face to face mode. Online communication has used by Counsellor for problem solving. Students used e-mail facility for subject related questions, query, problems and difficulties, student also use mobile learning facility by using educational apps, What's app, SMS facility also using for contact session and other information.

Digitization for Examination and Evaluation

The University has adopted Home Assignments tool for all programmes and it is using as a part of formative assessment. Every academic year, questions for home assignment of all respective programme, and Evaluation Division were uploaded on University website. Student takes a print of home assignments as per their convenient time and also provision is there the student uploads their hand written home assignments on university website for the further assessment by the examiner. The counsellor's assessed marks of home assignment have submitted through online to examination section by Study centre Coordinator.

University also use the class test, Practice test, practical at actual field and viva at the study centre. Soft copy of Question papers with password protected of class test have been sent through e-mail and password of soft copy is given to the Coordinator of SC through

SMS on register mobile number. Authorise person download the question papers, makes multiple copies for the exam and after the completion of exam study centre submit all the related document regarding exam, marks etc.

YCMOU continuously is developed course wise Question Bank and it is totally developed by subject experts. YCMOU has developed near about 1,57,000 items of various programme. The test has generated through question bank software and it is converted into PDF format with password protected. As per the examination schedule, it is send through the SRPD software to exam centre. As per the announcement of examination at that time hall ticket of the exam, date wise summary list and attendance sheet were issued through online. At the same time, exam centre supervisor uploads the absent student list in examination hall and it is sent through software. Scanned answer sheet is converted in to pdf format with password protected. It has sent to subject expert and User ID with password also be given to the expert. In the CAP centre, the expert has enrolled and then getting Answer sheet for onscreen assessment. While assessing, there is facility of marking of questions by questions in software. Calculation of marks facility is in software and it is easy to examiner for assessing the question paper. Data mining facility is there for result processing. Result also is available on website. Student gets result, Migration Certificate, Rules, Notification through online.

Conclusion:

As per the above all information we can conclude this discussion that with the digitization is the most important in educational implementation and the student gets education with feasibility, affordable and effective process in the students support services. Use of ICT can be reduced query, problems and malpractices in Teaching, Learning and Evaluation as well as Examination process.

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DIGITIZATION - DEVELOPMENT OF E-CONTENT

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Associate Prof., College of Education, Nashik

Introduction:

Digitization is the process of converting information into a digital format means computer readable in which the information is organized into bits. The result is the representation of an object, image, sound, document or signal by generating a series of numbers. The result is called digital representation or digital image. The term digitization is often used when diverse forms of information, such as an object, text, sound, image or voice are converted into a single binary code.

Digital information exists as one or two digit either 0 or 1. These are known as bits and the sequences of 0s and 1s that constitute information are called bytes.

Digitisation includes development of e-content any type of textual matter, Videos, Audio, graphics, images are converted into digital form ie. Electronic form is called digitization.

E-content :

e-content is digital information delivered over network based electronic devices ie. symbols that can be utilized and interpreted by human actors during communication process, which allow them to share visions and influence each other's knowledge attitude or behavior. Towards a broader definition the design of the subject matter in question and the digital delivery mode used.

It may also be defined as digital text and images designed for display in web-pages e-content means content in the electronic form. it is combination of text, audio, video, images, animation with visual effect. Any digital content that can facilitate the learning process or learning outcomes can be termed as e-content. the acquisition of these contents takes place Via four different channels purchase of material use of freely available content on the internet, self production of materials and exchange of existing material on a network with other institutes of Higher Education.

Nature of e-content :-e-content should be seen as a total to improve the understanding, engagement and motivation of learners to provide a safe environment for them to experiment

and explore their conjectures and to test their understanding using novel assessment methodologies based on trail and improvement stimulation and manipulation of models e-content can also be utilised as reusable learning objects.

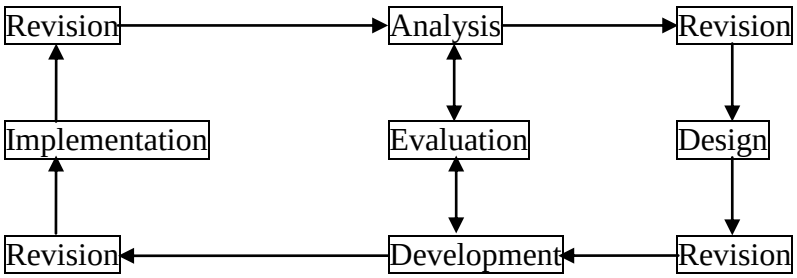
* **Design and Development process of e-content**:

A systematic and scientific approach is needed to develop quality content, instructional design is the teaching device that makes instruction as well as instructional material more engaging , effective and efficient. it is the branch of knowledge concerned with research and theory about instructional strategies and process for developing and implementing those strategies development of instructional specifications using learning and instructional theory ensure the quality of instruction.

There are there learning theories cognitism, constructivism and behavirism support the instructional desitgn as backbone, cognitism envisages the organization of the content, storing and retrieving of the content, construchism supports the learner centered holistic approach in e-learning, Behaviorism stresses the reinforcement , retention and transfer of knowledge in the e-content development.

There are sevaral approaches to explain the design and development process of content, Association for educational & communication technology which is a professional organization in the educational technology field in the united states has proclaimed the five stages of instructional design that can be used to develop any learning situations and learning content that is the ADDIE model to include analysis, Design, Development, implementation and Evaluation

ADDIE Model



ADDIE MODEL

ADDIE model means Analysis, Design, Development, implementation and Evaluation. the ADDIE model is a basic model for designing and developing learning courses as well as educational content.

above figure shows the interactive relationship among the five stages.

1. **Analysis phase :-** The analysis phase clarifies the instructional problems and objectives and identifies the learning environment and learner's existing knowledge and skills.
2. **Design phase :-** The design phase deals with learning objectives, assessment instruments, exercises content, subject matter analysis, lesson planning and media selection. The design phase should be systematic and specific. The design phase may involve writing a design document and structure note to aid final development.
3. **development phase :-** In the development phase, instructional designer and developers create and assemble content assets described in the design phase. if e-learing is involed.
4. **Implementation phase :-** the implematation phase develops procedures for training facilities and learners training facilitators cover method of delivery and testing procedures.
5. **Evaluation phase :-** The evaluation phase consists of two aspects formative & summative, formative evaluation is present in each stage of ADDIE process. while summative evaluation is conducted on finished instructional programs or products.

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IMPLEMENTATION OF DIGITIZATION AND CYBERNETICS IN EDUCATION

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Abstract

21st Century known for Information Communication Era. Digitization is the process of converting information into a digital (i.e. computer-readable) format, in which the information is organized into Computer binary system. The result is the representation of an object, image, sound, document or signal (usually an analog signal) by generating a series of numbers that describe a discrete set of its points or samples. The result is called digital representation Digitization is of crucial importance to data processing, storage and transmission, because it "allows information of all kinds in all formats to be carried with the same efficiency and also intermingled". Unlike analog data, which typically suffers some loss of quality each time it is copied or transmitted, digital data can, in theory, be propagated indefinitely with absolutely no degradation. This is why it is a favored way of preserving information for many organisations around the world. Cybernetics is a trans disciplinary approach for exploring regulatory systems—their structures, constraints, and possibilities. Norbert Wiener defined cybernetics in 1948 as "the scientific study of control and communication in the animal and the machine." In the 21st century, the term is often used in a rather loose way to imply "control of any system using technology." In other words, it is the scientific study of how humans, animals and machines control and communicate with each other.

Digitization:-

The Conversion of Text, Pictures, or Sound into a Digital form that can be processed by Computer. Digitization is the process of converting information into a digital format . In this format, information is organized into discrete units of data (called bit s) that can be separately addressed (usually in multiple-bit groups called byte s). This is the binary data that computers and many devices with computing capacity (such as digital camera s and digital hearing aid s) can process.

Text and images can be digitized similarly: a scanner captures an image (which may be an image of text) and converts it to an image file, such as a bitmap . An optical character recognition (OCR) program analyzes a text image for light and dark areas in order to identify each alphabetic letter or numeric digit, and converts each character into an ASCII code. Audio and video digitization uses one of many analog-to-digital

conversion processes in which a continuously variable (analog) signal is changed, without altering its essential content, into a multi-level (digital) signal. The process of sampling measures the amplitude (signal strength) of an analog waveform at evenly spaced time markers and represents the samples as numerical values for input as digital data.

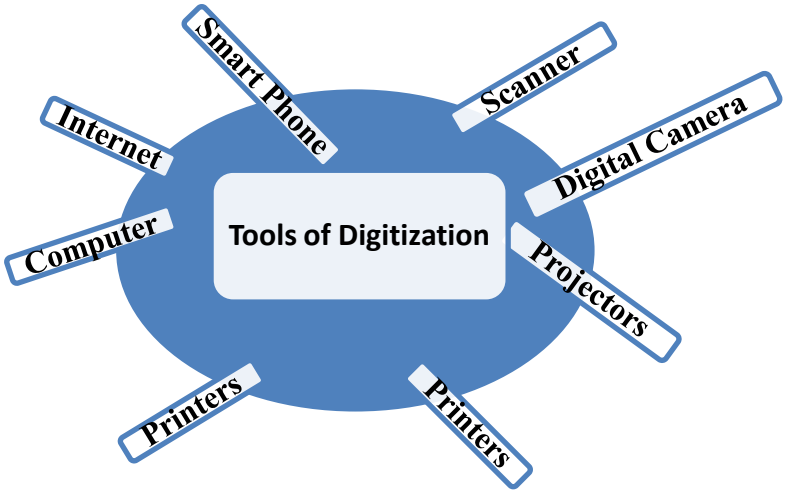
Digitizing information makes it easier to preserve, access, and share. For example, an original historical document may only be accessible to people who visit its physical location, but if the document content is digitized, it can be made available to people worldwide. There is a growing trend towards digitization of historically and culturally significant data.

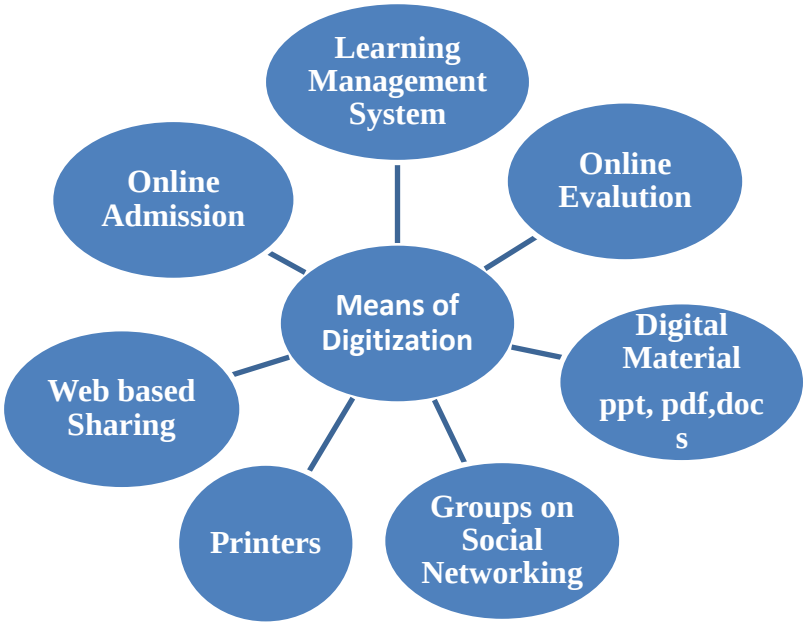
Digital Technology:-

One of the elements that collectively form a system of numeration i.e. 0 & 1

Digital means (Electronics) a circuit or device that represents magnitudes in discrete units of a physical quantity.

Computer works on 0 & 1 digit, so computer is an example of digital technology.

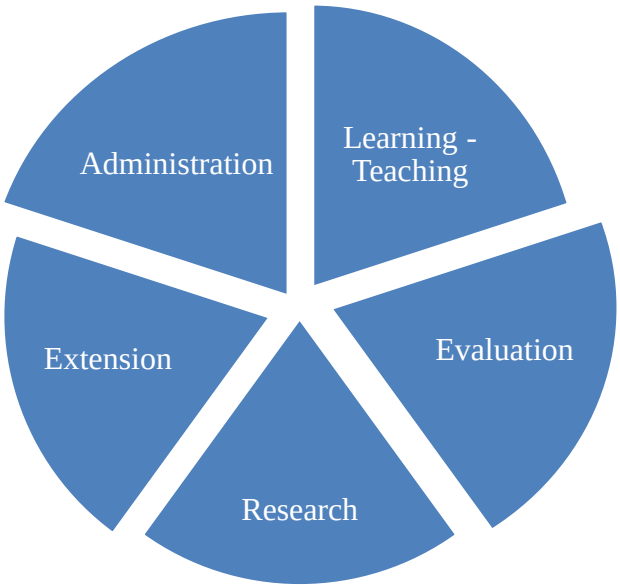




Background of Digitalization

1) GATT Agreement
2) Liberalization
3) Globalization
4) Privatization
5) World Bank
6) UNESCO
7) European Union

Digitalization in Education



Digitalization of Administration:

1) Website
2) Online Admission

3) Management Information System (MIS)
4) Online Enquiry
5) Online Transactions
6) Bio Metric Attendance
7) Digitalization of Library
8) Office Automation
9) Use of Social Networking

Digitalization of Learning – Teaching:-

1) Execution of LMS
2) Development & Distribution of Digital Study Material
3) Use of Blended Learning, CAIs, TSLs etc.
4) Setting up E-classrooms, Computer Labs, and Language Labs etc.
5) Availability of Educational Software.

Digitalization of Evaluation:-

1) Online Exams – Web-based / LAN – Based / App – Based.
2) Use of Software to scan, asses, arrange and to prepare result sheets.
3) Use of digital communication of tools to communicate result.

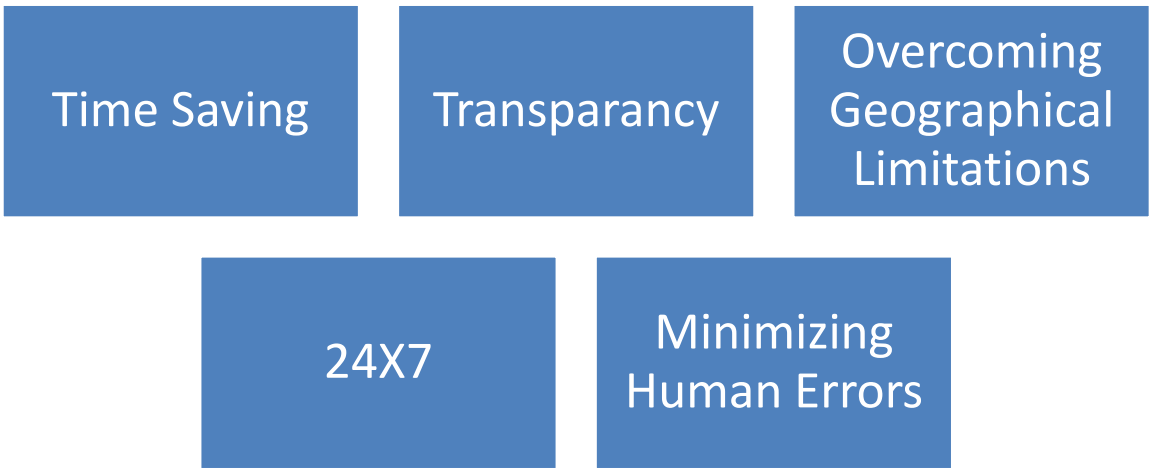
Digitalization of Research :-

1) Use of digital tools in the process of research.
2) Making use of Statistical software in data interpretation.
3) Making available software of research documents.
4) Communicating research by using digital tools like Blog, Websites, Social Networking.

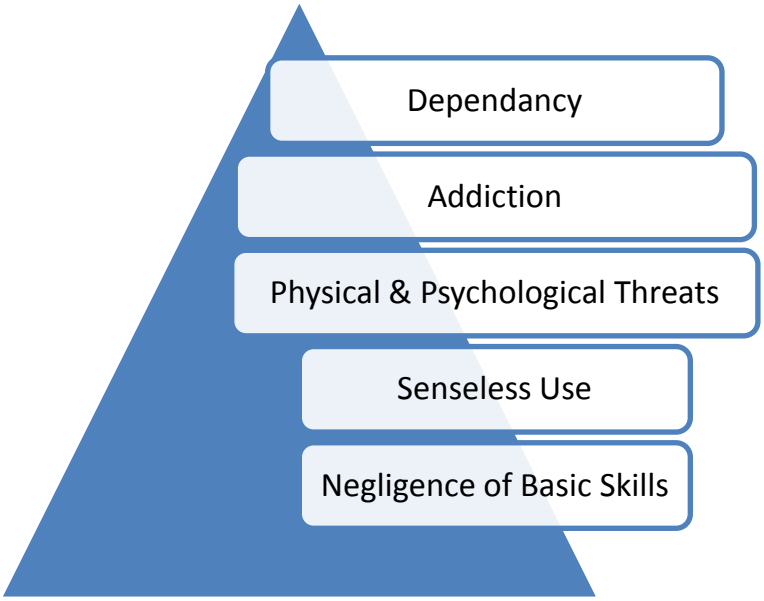
Digitalization of Extension:-

1) Preparing digital resources useful to the community on social issues e.g. Documentaries, Mobile Videos, Photo Slides on *Swacch Bharat Abhiyaan, Sarva Shiksha Abhiyaan, Welfare Schemes* Etc.
2) Making socially useful posts on social networking and spreading.
3) Taking help from local community to prepare welfare digital resources.

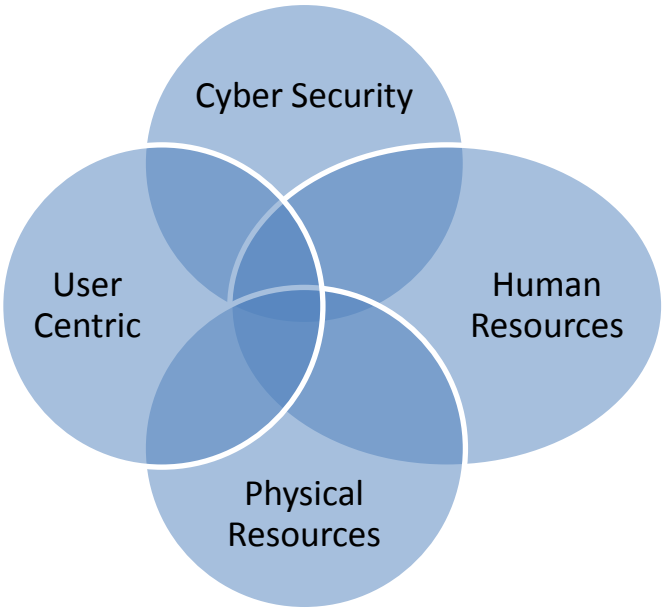
Advantages of Digitalization :-



Limitations of Digitalization :-



Precaution of Digitalization:-



Cybernetics :

Definitions

1) "Science concerned with the study of systems of any nature which are capable of receiving, storing and processing information so as to use it for control."—A. N. Kolmogorov

2) "'The art of steersman ship': deals with all forms of behavior in so far as they are regular, or determinate, or reproducible: stands to the real machine -- electronic, mechanical, neural, or economic -- much as geometry stands to real object in our terrestrial space; offers a method for the scientific treatment of the system in which complexity is outstanding and too important to be ignored."—W. Ross Ashby

3) "A branch of mathematics dealing with problems of control, recursiveness, and information, focuses on forms and the patterns that connect."—Gregory Bateson

4) "The art of securing efficient operation [lit.: the art of effective action]."—Louis Couffignal

5) "The art of effective organization."—Stafford Beer

6) "The art and science of manipulating defensible metaphors" (with relevance to constructivist epistemology. The author later extended the definition to include information flows "in all media", from stars to brains.)—Gordon Pask

7) "The art of interaction in dynamic networks."—Roy Ascott

Cybernetics: In education

A model of cybernetics in Education was introduced by Gihan Sami Soliman; an educational consultant, as a project idea to be implemented with the help of two team members in Sinai. The Sinai Sustainability Cybernetics Center announced as a semi-finalist project by MIT annual competition 2013. The project idea proposed relating education to sustainable development through an IMS project that applies a multiple educational program related to the original natural self-healing system of life on earth. Education, sustainable development, social justice disciplines interact in a causal circular relationship that education would contribute to the development of the local community in Sinai village, on both sustainability and social responsibility levels while the community itself provides a unique learning environment that will contribute to the development of the educational program in a closed signaling loop.

Cybernetics is applicable when a system being analyzed incorporates a closed signaling loop—originally referred to as a "circular causal" relationship—that is, where action by the system generates some change in its environment and that change is reflected in the system in some manner (feedback) that triggers a system change. Cybernetics is relevant to, for example, mechanical, physical, biological, cognitive, and social systems. The essential goal of the broad field of cybernetics is to understand and define the functions and processes of systems that have goals and that participate in circular, causal chains that move from action to sensing to comparison with desired goal, and again to action. Its focus is how anything (digital, mechanical or biological) processes information, reacts to information, and changes or can be changed to better accomplish the first two tasks.[3] Cybernetics includes the study of feedback, black boxes and derived concepts such as communication and control in living organisms, machines and organizations including self-organization.

Concepts studied by cyberneticists include, but are not limited to: learning, cognition, adaptation, socialcontrol, emergence, convergence, communication, Efficiency, efficacy, and connectivity. In cybernetics these concepts (otherwise already objects of study in other disciplines such as biology and engineering) are abstracted from the context of the specific organism or device.

Contemporary cybernetics began as an interdisciplinary study connecting the fields of control systems, electrical network theory, mechanical engineering, logic modeling, evolutionary biology, neuroscience, anthropology, and psychology in the 1940s,

often attributed to the Macy Conferences. During the second half of the 20th century cybernetics evolved in ways that distinguish first-order cybernetics (about observed systems) from second-order cybernetics (about observing systems).

Studies in cybernetics provide a means for examining the design and function of any system, including social systems such as business management and organizational learning, including for the purpose of making them more efficient and effective. Fields of study which have influenced or been influenced by cybernetics include game theory, system theory (a mathematical counterpart to cybernetics), perceptual control theory, sociology, psychology (especially neuropsychology, behavioral psychology, cognitive psychology), philosophy, architecture, and organizational theory.

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IMPACT OF DIGITIZATION ON EDUCATION

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Abstract

Traditionally education is centered on sources such as schools, teachers and print media. The learners reached the information sources by enrolling with schools, teachers and libraries. Prior to the digital era, information was not accessible by the majority of people, and even those accessed were unable to obtain current information with respect to today's context. The modern society wants to know the information as it happens and when it happens, and the world is moving from an information society to a knowledge society. Thus education is given the highest priority and brainpower is becoming the most valuable asset of an organization. Advances in digital technology have opened up many avenues of learning. Technology has made information accessible / transmittable from anywhere and by / to all groups of people. Education has reached most parts of the world and ICT has become an integral part of human life. This paper describes the Introduction of digitization, meaning of digitalization, definition of digitalization, traditional education and digital education, importance of digitalization in education, a digital strategy and benefits of digitalization in education.

- **Introduction:**

Digital learning is any type of learning that is accompanied by technology or by instructional practice that makes effective use of technology. It encompasses the application of a wide spectrum of practices including: blended and virtual learning. Digital Learning Makes Students Smarter. Learning tools and technology enable students to develop effective self-directed learning skills. They also promote cooperation and teamwork which are very important skills, in every aspect of life. When teachers effectively integrate technology into subject areas, teachers grow into roles of adviser, content expert, and coach. Technology helps make teaching and learning more meaningful and fun. Students are also able to collaborate with their own classmates through technological applications. Technology can be used to improve teaching and learning and help our students be successful. Education doesn't stop at the end of the school day because students have access to teachers, resources, and assignments via the web and access these resources at any time. Digital classroom school

provides a variety of classroom technologies designed to enhance the learning experience. Our equipment facilitates the use of popular presentation methods such as computer-based projection and digital video. Digital classroom school aids lecture hall teaching through the use of microphones and multiple screen presentation.

- **Meaning of Digitalization in Education:**

Digital learning is any instructional practice that effectively uses technology to strengthen a student's learning experience. Additionally, digital learning can be used for professional learning opportunities for teachers and to provide personalized learning experiences for students.

Digital Classrooms are technology enhanced classrooms that foster opportunities for teaching and learning by integrating learning technology, such as computers, specialized software, audience response technology, assistive listening devices, networking, and audio/visual capabilities.

- **Definition of Digitalization in Education:**

Digital learning is any type of learning that is accompanied by technology or by instructional practice that makes effective use of technology. A digital learning strategy may include any of or a combination of any of the following: adaptive learning and Badging.

- **TRADITIONAL EDUCATION**

Formal education was traditionally centered on schools while non-formal education was centered in libraries at central places in the form of newspapers and books. Teachers delivered the formal education either following a textbook or notes prepared using books and their experiences. The learners enrolled and visited the places that offered formal education. The libraries offered supplementary reading material to enhance their learning as well as reference facilities.

A teacher has to be well educated and knowledgeable to be able to educate others. Also they have to acquire the skills of retaining student’s attention and deliver content in an effective way. Thus teaching is an important profession and people respected them as they guided and assisted the learners to be useful citizens of the country.

- **DIGITAL EDUCATION:**

The digital turn in education has been described across a wide range of initiatives and processes. These include the introduction of digital tools and gadgets as a part of the learning environment, building digital archives and repositories of learning and curriculum building,

facilitating remote access to education through information and communications technologies infrastructure, improving quality of access to education and learning resources, building diverse and customized syllabi to accommodate for alternative and contesting perspectives, building peer knowledge communities of information and knowledge production, and including non-canonical material and experiences into formal institutions of education. Different locations, contexts, geo-political circumstances, socio-economic factors, and cultural differences influence the spread, rise and integration of digital technologies in mainstream education. Much academic, policy and implementation attention has been given to these processes and several models of new learning environments and infrastructure have been postulated over the last two decades. The democratizing promise of internet technologies has been largely if not exclusively about education, learning, literacy and production of knowledge from different parts of the world.

- **Importance of Digitalization in Education:**

Digital learning is an innovative method that integrates *technology* with the process of learning. Digital learning can be implemented across any areas or fields of learning. This type of learning allows the learner to grasp concepts quickly in a more efficient way. With the advent of smart phones and computers, the process of learning has evolved rapidly. E-learning, virtual lectures, educational gamification, portals containing educational resources and so on contribute to the development of digital learning.

Digital Learning requires more than just the latest devices, it should be a combination of the device, digital content which provides educational resources and instructions. Technology is the tool used to bridge between the learner and the content in the most effective and efficient way. Digital learning not only helps the learner, it also helps instructors or teachers to teach effectively and efficiently with the aid of digital media. Digital learning can provide rich deep and up to date contents for the user. This method allows the learner to choose what is relevant and required for them.

Despite the numerous advantages, there are a few disadvantages for digital learning. The learner or instructor should have access to an *Internet connection* which contributes largely to digital learning. For better results, better tools and resources should be used by the learner, which cannot be affordable and can be out of reach. The bulk amount of data available has the tendency to mislead the learner from his or her target topic. Due to the excess use of technology students now tend to lose their reading skill and logical ability.

- **A digital learning strategy:**

  A digital learning strategy may include any of or a combination of any of the following:

  - adaptive learning
  - badging and gamification
  - blended learning
  - classroom technologies
  - e-textbooks
  - learning analytics
  - learning objects
  - mobile learning
  - personalized learning
  - online learning (or e-learning)
  - open educational resources (OERs)
  - technology-enhanced teaching and learning
  - virtual reality
  - augmented reality

- **Benefits of Digital learning:**

1. **Time and Place**:

Learning becomes less time consuming and can be done at any point of time. The Internet access provides facilities to commence courses at any point of time in a year, unlike the regular academic courses. The learners need not worry about attending a regular class in a specific place since learning can be done on their personal device irrespective of the place and time. Therefore, issues regarding time and place becomes flexible for the learner

2. **Efficient:**

Digital assessment systems deployed in the software used for digital learning provides an instant feedback for the learner. This allows the learners to understand whether more time should be spent on a particular topic. Learners can work at their own pace of learning ability, unlike the institutional systems.

3. **Cost-effective:**

The learners and instructors can rely on e-books and web portals for educational resources rather than spend money on buying books.

4. **Global reach**:

The learners can access to courses and materials from different parts of the world. Additionally, it allows learners and instructors to connect and communicate with other people around the world. This provides a richer learning experience.

5. **Variety:**

Information can be presented in a large variety of ways attracting the learner and increasing their concentration. Technological innovations like a smart board, electronic readers, iPad and so on can provide information in a wide range of ways.

6. **Knowledge availability**:

Digital learning provides an extensive amount of knowledge to the learners. With the help of the Internet, learners are able to access a massive amount of data from different parts of the world at a very cheap cost.

- **Conclusion:**

Digital learning is any type of learning that is accompanied by technology or by instructional practice that makes effective use of technology. It encompasses the application of a wide spectrum of practices including: blended and virtual learning.Classroom technologies.A digital learning platform for students and instructors in higher education. A web-based adaptive learning platform that uses artificial intelligence to continuously evaluate performance and cater instruction to each student's needs.

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TRANSFORMATION OF EDUCATION THROUGH TECHNOLOGY

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Abstract

Education informs alerts, enlightens, cultures, and empowers us and makes a person knowledgeable, employable and socially useful. Education not only inculcates social, economic and cultural awareness but is also an important medium for enhancing values among the human beings. The development of a country depends on its human resources, and the development its human resource can be done with imparting them a quality education. Hence education is the basic and fundamental need of any country for the development. It is the only tool to build a cultured, responsible, employable, knowledge based and a developed society. The present paper gives the meaning of transformation and meaning of education. The paper focuses light on the need of digitalization in education and various ways to make use of technology in the education.

Keywords: *Transformation, Technology, Education*

Introduction:

In today's world where time is money, digitalization is a big time saver. We are running into the 21st century where technology has been preponderant in every sector. This is the phase revolutionary development where technology is taking over every niche and corner. Smartphone's, laptops, and tablets are used to words for society. Technology changed every sector; to have technology makes everything easy and faster for every sector for that every sector had to adopt the technology, to change with the technology. In this scenario of digitalization, it is a must for the education sector to also adapt to a dynamic environment of digitization so education can keep move with a competitive world.

The technology has given birth to new face of education. It is now well accepted fact that the technology has completely changed the process of teaching and learning. Technology has proved beneficial to both, teachers and students in the teaching and learning process. This new form of education provides lots of new opportunities of education to all. It has removed the physical barriers of education. Use of technology in the process of education is making education more interesting and easy to understand to the students. Hence teachers also have learnt to make effective use of technology in their teaching process. Students are getting motivated and are showing active involvement which is accelerating the process of education.

Both teachers and students can collaborate in real time using technology in their process of education and make education more easy, accessible, interesting, practical and useful.

Meaning of Transformation:

Transformation is a complete change in the appearance of something so that that thing is improved. It includes the process of transforming. It is a positive change in something to improve that thing. Here the transformation is related with the positive change in India through effective use of technology in the process of education.

Meaning of Technology:

It is the application of scientific knowledge for practical purposes. It is the machinery and devices developed from scientific knowledge.

Technology refers to methods, systems, and devices which are the result of scientific knowledge being used for practical purposes.

The branch of knowledge that deals with the creation and use of technical means and their interrelation with life, society, and the environment, drawing upon such subjects as industrial arts, engineering, applied science, and pure science.

Meaning of education:

Education is the process of imparting or acquiring knowledge, Skills, and developing the power of analysis, judgments and logical reasoning, and preparing for a literate life. Education is a science or an art of imparting knowledge to the learners with use of instructions, training methods and teaching methods.

Meaning of Educational Technology:

Educational Technology is the study and ethical practice of facilitating learning and improving performance by crating, using and managing appropriate technological processes and resources. In short educational technology is the use of both physical hardware and educational theories.

Educational Technology refers to the use of technology in the process of education. It refers to the instructional use of computers, television, internet, software, applications and other kinds of electronic hardware and software.

Educational Technology is a complex, integrated process involving people, procedures, ideas, devices, and organization for analyzing problems, and devising, implementing evaluating and managing solutions to these problems, in situations in which learning is purposive and controlled. Educational Technology often employs the term

instructional media to represent all of the devices that teachers and students use to support learning.

Need of digitization in education:

- **To cope up with needs of today's students -** as this generation's students are not born to be restricted by the limits of simple learning; their curiosity is vast and cannot be provided with educational systems that were designed earlier. If we keep on teaching our children the way we were taught, we would deprive them of their tomorrow.
- **To provide verity of learning materials** – Today students don't rely on textual knowledge. This is a technology age so they can easily access the information, knowledge in various like video, audio and image form about each and every thing they read in textbook.
- **To facilitate students with different learning environment** – student or learner is at the centre of the education system. In order to make education system successful it is necessary to facilitate student with different learning experiences; so the objectives of teaching can be achieved. Today students can learn online, where they can involve actively in learning process.
- **To make education affordable and accessible** – *such as people living in remote locations. Similarly, digitalization makes it possible for some people to pursue higher education with less disruption to their lives.*
- **To make education available according to learners requirement** - *Individuals who are already managers in a company, with heavy workloads and important responsibilities, may find that* **online learning.** *The possibility with online learning to access your sessions when you want and learn at your own pace is a major advantage for many students. It all very much depends on individual learning styles and short or long-term professional goals*."
- Uniform content and learning packages will ensure uniformity of knowledge dissemination and eliminate vastly varying standards between good and better institutions. With hand held internet devices available with most students, the engagement with teachers would extend well beyond conventional school timings.

Various ways to make use of technology for the transformation of Education:

Many educators find it difficult to make use of technology in the process of education, but still it is well accepted that the effective use of technology makes education more simple and

understandable. Following are some of the ways for effective use of technology in the process of education.

1. Virtual Field Trip:

If the location for field visit is out of reach, and practically or economically it is difficult for the students and teacher to physically visit the location, then virtual field trip available to solve this problem. Virtual Field Trip is a guided exploration through the World Wide Web that organizes a collection of pre screened, thematically based web pages into a structured online learning experience. It is useful to understand the actual field with the help of Google Cardboard. Various applications are available which can be used to explore the famous buildings.

2. Preview of Field Trips Virtually:

Before actual visit to the field it is always better to explore & preview the field with the help of Google Map or Google Earth in advance. Suppose a field visit is organized by the college for the students, then before actual departure the in charge teacher can find out the exact location of the company, nearest route and distance of the destination from the home location etc. This practice saves time, money and energy.

3. Use of electronic tool to tract noise:

The teacher may use the devise which tracks and displays the noise in the classroom. For example there is meter called '*Too noisy*', this meter will automatically speak when there is a noise in the classroom. Hence teacher needs not to instruct the students about noise, and without telling them, students will become quite when meter speaks.

4. Use of Educational Videos:

Various educational videos are available on the internet with simple language and accurate content explained with proper examples, using animation and music, which makes topic easy and interesting for the learners. These educational videos are also available on You Tube free of cost open for all. Simply the user has to type the topic in search window then all relevant videos are opened for the user. This easy way of using technology in the teaching adds multimedia element in the teaching process which can easily resonate with visual learners.

5. Live Video Conference:

Suppose subject expert is from other district or state or country then with the help of live video conferencing his live lecture can be attended by the students from home location. Skype or Google Hangouts are the applications normally used for video conferencing. This

technology helps to bring the expertise in the classroom at very minimum cost which helps students to get expert knowledge and new ideas.

6. Podcasts:

Podcasts are learning stations, the students engage very actively while playing podcasts which fasters the speed of learning. Podcasts of various subjects are available ranging from specific education to general education. Podcasts involve various topics like curriculum, various study subjects, interview techniques, studying strategies and techniques, lectures of various subject experts etc.

7. Use of multimedia in PPT

Most of the teacher use power point presentations for their lectures and guest lectures. If these PPTs are only in text form then it becomes boring for the audience and they don't listen it carefully. If the speaker has used multimedia like pictures, sounds, video clips, podcasts, music, news, movies to the presentation it becomes easy to capture the attentions of the audience, and they become attentive for the entire lecture.

8. Use of Smart Phones:

Now days all students are using smart phones in urban and even in rural areas. Teachers can make use of the smart phones of the students for the effective communication of teaching and learning material. There are adaptive learning programs that students can access through smart phones or tablets. There are educational apps which students can download on their smart phones, teacher can create virtual class room and give assignments to students regarding that application. Even other communication apps like what's app, snap chat, we chat or hike, instagram etc. can be used for educational communication purposes.

Conclusion:

Technology has removed the physical boundaries of the education sector. It has completely transformed the education sector. It has proved helpful for mobile learning and distance learning. The internet and other technological devices like Skype conferencing have made it possible for the teacher, to reach the target students even across the country. Students are also taking admission for online courses provided by various universities; students can study the subject material available on the internet with the help of You Tube Videos or various educational online applications. Many colleges, institutes and universities have embraced education by creating virtual classrooms. Online education is flexible and affordable; students can attend class rooms as per their free time and convenience. They can attend exam as per their convenience. They can ask their queries to the teacher online or if

teacher is not available they can mail their queries and teacher will answer whenever he is free. Students can interact with the other students with the help of virtual classrooms.

Recent advancements in the technology have brought various positive outputs in the education sector. The new educational technology has is positively supporting the growth of education sector and has proved helpful for teaching and learning process. Out traditional classrooms have changed with the change in technology, now we have digital classrooms, whiteboards, screens etc. for the effective teaching and students are using mobile phones, laptops, computers, ipads, tablets and various other electronic devices for the learning purpose. This is giving positive returns to the teachers and students both and it is expanding course offerings and it is increasing the student's motivation and engagement in the learning process.

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IMPACT OF ICT IN EARLY AGE CHILDREN'S EDUCATION

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Abstract

Early age children education is the foundation of life, if it is strong life will be smooth and successful. Education through ICT will be developed the creativity, imagination and understanding which will be helpful for adjusting in primary education. Pre- Primary Education reduce the drop out and stagnation in higher education. This study presents the impact of ICT in early age children's education.

Keywords*- ICT, Early age Children, Creativity, Development*

Introduction

Education is a continuous process in human life which passes through many stages from birth to death. Education has importance of every life and it is only quality which makes socialistic and superior to other beings. Aristotle told about importance of education, "Educated men are as much superior to uneducated as the living beings are to the dead". Similarly Bhagvad Gita also says, "Nothing is more purifying on the earth than knowledge". Education has same importance as it is childhood or adult. Most of developed countries accepted the importance of early childhood education for a better start in life. Plato had said: "you know also that the beginning is the most important part of any work, especially in the case of a young and tender thing; for that is the time at which the character is being formed and the desired impression is more readily taken".

In India, Mahatma Gandhi also knew the importance of early childhood education and said "We labour under a sort of supersition that the child has nothing to learn during the first year of life, on the contrary the fact is that the child never learns more in after-life than what he does in its first five years. The education of the child begins with conception."

Early Childhood Education

Early childhood education means to promote a more advanced development of children before they go to school. Often formal education starts from primary class or Ist standard, that

time child is 6 year old. Many research found that most of children who don't attend pre primary school, face adjustment problem in class. That is why attendance percentage of those students is low and achievement result is also not satisfactory. These are the biggest reason for colossal wastage and stagnation at the primary stage. Because teachers assume that the rate of mental and physical development of children are same for starting formal education. Hence, it is expected from every child that at the age of 5+ he must be ready to learn. These children are not exposed to such orientation which develops in them the readiness for learning to read. The program of pre primary education is helpful for minimizing the magnitude of the problem and providing better environment and life experiences in the early period of infancy.

A child's growth is very rapid in first four years and maximum growth of mind has done till 6 year. The education of the child starts from the period of its conception. Three to six year old children are curious and studious and quite independent. They have a surprising ability to concentrate. Maria Montessori observed children with an open mind, unprejudiced by educational dogmas of the day. Therefore, the pre-school age is the most impressionable and sensitive age in one's life. An individual's achievement in life depends by and large on what he has been helped to learn before the age of four. It is because of this that the programme for pre-primary education is receiving attention day by day in this modern era.

Importance of ICT in Education

India accepted the importance of ICT mid of 20th century. In 1954, India started to develop the design general purpose computer, which was completed by Tata Institute of Fundamental Research (TIFR) and also Indian Industries adopted computerization in 80th saw. In 21st century India has implemented digitalization in different field like- defense, space, industries, education and government scheme. In digitalization era, nowadays new generation is bringing up with computer, tablet, mobile and internet. Schools, colleges, universities, state education board and national education bodies all are accepting ICT and providing education through ICT. In present time knowledge is not binding in books, now it can get from pen drives, memory cards, CD drives, computers, laptops and mobiles as a soft copies and students can get it without limitation of time and place. New applications for mobiles, new techniques which available in internet like videos, study material, video conferencing etc.

Objective of Study

A study of impact of ICT on pre primary school students.

Methodology

This is a descriptive type study and data collection is secondary type. Data is collected through policy letters, concerned journals, research papers and thesis.

Pre Primary Education Policy in India

The national policy of education (1987&1992) recommended strengthening of ECCE (early childhood care and education) programme as an essential component of human development and UEE. The integrated child development service (ICDS) is one major programmes under ECCE. The scheme is funded by the central government and children below age 6 years are its clientele. Since the health input at lower ages is more as compared to the educational input, the ICDS and the Anganwadis or Balwadis is considered more as a welfare activity and is part of activities performed by the welfare department and not under the department of education.

Indian government launched many schemes in rural areas but these are not fully oriented for early childhood education. It is providing informal ways most of children. But increasing the numbers of nuclear families in middle class, they require pre primary schools for their children. And one another reason is increasing the awareness and education in citizen, they understand the value of early childhood education but Indian government has not any policy for three to six year age group children. Private sector is a source for providing pre primary education. These schools are adopting ICT and providing education through it.

Impact of ICT in Pre Primary Education

Children learn through coping, follow up and teaching. They learn from mother, family member and society. In present era, technologies are available in very easy way so they have another way of learning, that is ICT. Today in pre primary school teachers are using videos, music, games and stories in their teaching method for making more interesting their class. Children learn more rapidly through an organized curriculum, learning aids and by interacting with other children. The main purpose of ICT in pre-primary education is to prepare children physically, emotionally, socially and mentally for formal schooling.

Development of creativity

Creative thinking is one of the most important skills which can be developed by education. Through simple everyday actions and play, young children develop physical, social, intellectual, emotional and creative abilities known as creative development. The main aim of the pre primary education is developed creative ability through play. Children's creative abilities may be explored through their ideas, curiosity and feeling towards the arts,

movement, music and imaginative play. Children take interest and express their ideas through colors, draw sketches, music, dance and play.

Creativity has different aspects which are required to develop in children. One of them is Emotional creativity. It is the very important aspect which observes the response of child to his environment, objects and people around him. Child response different ways to what he sees, touches and hears. He starts to communicate to same age children and plays in group. These activities develop social skills which help in long term in their life.

Development of creativity through ICT

1. Exploring Media and Material- Children develop the creative thinking through give the response to media, pictures, toys and three dimensional objects. Children want always to see new pictures, to play new toys and games. Internet provides new ideas to teachers about activity and games.
2. Imagination and imaginative play- early age child learns to how he responds to dance, music, role- playing and drawing and art. Imaginative writing and drawing characters go a long way in developing child creativity. Dealing with different colors and pictures of different characters build the child's mind and improves his ability to test different color variations. The creative arts have a significant bearing on the early creative development of a child.
3. Creative music and dance- children take interest in music and dance. Different sounds and different body movement develop the creativity. Internet provides many videos of musical poems which are attractive in listening and watching. Children learn these poems with singing and dancing. Children exposed to different tones and patterns to dance movement may be able to adapt easily to these poems easily for memory.
4. Knowledge and understanding- by the use of projector, teachers give the opportunities to children to understand the world around them. They know about the different types of animals, vegetables, plants, places and peoples. Children learn to how to act and respond to different objects in their environment. They start to investigate and explore their surroundings in a safe manner.

Limitation of non-E learning pre primary schools- Non E- Learning schools means, teachers are using books, charts and orthodox methods like teaching by dictate and writing on black board in their teaching. By these methods children have very limited sources for learning. Classes are so boring that they don't take interest in learning. They hesitate for going schools. They are not able to learn more letters, words and numbers. Poems and stories are delivered

by teachers through dictating so most of students are not able to learn in one time. Repetitions of poems and stories by teachers are not possible. So these types of schools hinder the development of children.

Benefit of E-Learning schools- these types of schools have unlimited study materials, teaching techniques and new ideas. Teachers teach alphabets and numbers with music and videos. Children take interest in class and learn rapidly. Children want always new things, which can be fulfilled by internet. Poems and stories can be listened again and again without any restriction which helps to easy learn to children. Children learn own speed in these types of schools.

Conclusion

For a best future and becoming a successful human being it is necessary that education cannot be avoid in any stage of life. If creativity, understanding, imagination and social skills are develop in early age, these are beneficial for life time. The use of ICT in early age childhood increases the ability of independent learning. Investigation and searching habit will develop which helpful for fulfilling their quires and developing new ideas. Early age childhood education is a strong base of a life. Pre primary education is the best stage for preparing the students for primary education which reduces the drop out and stagnation. They can also learn to use the technology in better way. Uneducated parents and guardians no longer need to worry about teaching their kids or helping them with homework because children learn to self-teach with the use of the technology. In addition, kids are able to teach the use of new technology to their parents which creates a warm learning atmosphere where parents and children can learn from one another and have fun while doing it.

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LEARNING PARADIGM SHIFT IN HIGHER EDUCATION

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Introduction

Global trend focus shifting from education to learning and hence more responsibilities on the learner and service users. Innovative strategies to make learning experiences more meaningful and relevant to diversified groups. The dominant pedagogy has evolved to a learner centred focus. Traditional pedagogy delivering knowledge and skill in instruction from digital learning has changed the shifted to multidimensional self-learning. Learning neurovirulent, together with co-operative, collaborative and supportive should created instead of individual. Open educational resources (OER) impact on Indian systems of education ranging from lifelong learning vocational learning and higher education system. OER initiatives made use of textual as well as audio-visual platforms embracing YouTube,Metacafe and other web-based video channels. Indian society embraces OER in order to social justice and empowerment through sustainable educational development. The changing landscape of learning has to ensure students learning as a self actualizing, discovering, experimenting, enjoyable, and reflecting process. It should be include some typical and important component such as world wide networking through the internet, web-based learning interactive self-learning multimedia facilities and learning material.

Digital pedagogy

Techno-pedagogically teacher must explain insights related to teaching, technology and critical reflection. There is need to integrate techno-pedagogic skills such as media-message compatibility media designing, integration of message media and modes. Media choice language, proficiency, credibility, automation and integration. To develop effective communication critical thinking creative thinking, decision making, problem soloing teacher should integrate content with methodology and emotional competence.

Principles of digital pedagogy

1. Media is message- medium should be neutral to carry or pass the message the message should be judiciously distributed against various data.

2. Media language prophecy – presenter ought to have media language proficiency in terms of size of message, intonation, modulation, pitch volume and speed of delivery.
3. Media fidelity – there should be no message dilution, distortion or loss when it is mediated wireless fidelity and high fidelity.
4. Balance view composition – the relative position of various subjects and objects their relative colours, saturation, reflection and background.
5. Projection time – the on screen time needs to be decided very judiciously.
6. Wave-lengths of presenter – it has to be perfect systematic approach. The entire view-composition camera-density and presenter profile.
7. Quality of digital product – any digital product demands fully scientific bases which need to be observed very analytically.
8. Differentiated and differential – the strength of techno-pedagogy lies in becoming diffentiation differential.
9. Healthy techno-pedagogy – there should be proper maintenance such as preventive, corrective, adaptive and perfective.
10. Co-ordination pedagogues, content master and techno crat – content, pedagogy and technology should have symbiotic relationship.
11. Constructivis- c-program should be innovative creative, constructive and connective having novel, decent and cultured serve.
12. Redundancy principle – people learn better from graphes and narration than text. Narrative have been found to have better reach than print.

Foces

We teachers need to learn what to twit, construct Facebook, Skype and Blog. The communication has become very fast through email and Gmail.teacher has to be really perfectly fully complete, present day globe is in the grip of self invited problems like CCTV. So the need of a healthy equilibrium between the conventional and the digital for the betterment of the society. (IQAC) internal quality assurance cell forces to change in higher education. To promote knowledge based society, the university now plan to sustain quality and excellence through institutional academic and administration refoms. Through a sectoral approach towords excellence in – faculty, education research, scholarship and creativity. Everywhere industry is striving to make better informed and more effective decisions. Transformation of higher education through high performance workplace. Diversity, technological change and knowledge transformation.

Diversity

The charge in teaching to learning is in pedagogy classroom & open learning. We have slowly moving from lecture hall to environment for interactive. Collaboration learning. Drastic charge in passive student to active learner to demanding consumer. The key characteristics of education in a society of learning are learner centric, affordability, life long learning prospects, a seamless web, interactive & collaborative, diverse, intelligent and adoptive. Once we accept that change is inevitable. We can use it as a strategic opportunity to control our destiny. While preserving the most important of our values and our traditions. Because diverse carried out change in human from physical to financial capital. The current constellation of diverse institutions comprising the higher education enterprise. Will change in profound ways to serve a changing world.

We have considered the risks associated with use of web 3.0 technologies, servies and strategies. In a web 3.0 environment large numbers of users are creating content using a seemingly euer-increasing variety of tools and devices. This content is made available via a wide variety of commercial web 3.0 services inclosing photographic sharing services such as Flickr, video sharing services such as You Tube & social networking services such as My Space and Facebook. Remote access such as open athers, ezy-proxy etc.

Conclusion

MOOC's can play a vital role in imparting higher education as they provide equal access to everyone regardless of their socioeconomic status, gender, age and cost-affordability.

It is also a response to large social needs related to learning anyone, anytime, anywhere. OER & MOOC's are prepared & designed to do so. The parameter of university ranking for provision for learning resources centres & services. The learning content of MOOC include video presentation of experts in their field of study. The course activities include watching video, discussion, online blogging, writing and commenting on video watched, immediate feedback, peer reviews and summary of the learning content. The course material are also provided online. Course transactions and evaluations are made possible through online.It is no doubt that MOOC's will become one of the futuristic learning trends in the area of higher education.

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IMPACT OF DIGITIZATION ON EDUCATION

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Abstract

Traditionally education is centered on sources such as schools, teachers and print media. The learners reached the information sources by enrolling with schools, teachers and libraries. Prior to the digital era, information was not accessible by the majority of people, and even those accessed were unable to obtain current information with respect to today's context. The modern society wants to know the information as it happens and when it happens, and the world is moving from an information society to a knowledge society. Thus education is given the highest priority and brainpower is becoming the most valuable asset of an organization. Advances in digital technology have opened up many avenues of learning. Technology has made information accessible from anywhere and by to all groups of people. Education has reached most parts of the world and ICT has become an integral part of human life. This paper describes the process of generation, creation and acquisition of knowledge through the technology. The paper also describes how technology is used to access and apply such knowledge. The paper relates how these technologies have been used in education and its impact in general.

1. TRADITIONAL EDUCATION

Teachers delivered the formal education either following a textbook or notes prepared using books and their experiences. The learners enrolled and visited the places that offered formal education. The libraries offered supplementary reading material to enhance their learning as well as reference facilities.

A teacher has to be well educated and knowledgeable to be able to educate others. Also they have to acquire the skills of retaining student's attention and deliver content in an effective way. Thus teaching is an important profession and people respected them as they guided and assisted the learners to be useful citizens of the country.

1.1Electronic and Digital Era

Electronic era commenced with the use of wireless electronic communication over 100 years ago. Transmitting telegraph messages and the radio are among the important applications of this technology. The messages were passed through the air, invisibly, on radio waves. Since then the technology use has moved from radio, to recordings, to movies, to television, to computers, to CDs, CD ROMs & the Internet.

2. SUPPORTING TECHNOLOGIES AND APPLICATIONS

There are a number of technology components available to build knowledge management systems. Local area networks, Internet and Intranets are the backbones. They provide transparent speedy transfer of knowledge among people and applications. Internet applications built using software and tools allow collaborative intelligent access to knowledge. .

2.1Organization of Explicit Knowledge

Organization and managing explicit knowledge includes generation, creation or acquisition of knowledge. Such activities could be performed through tools such as RDBMS and EDMS.

2.1.1RDBMS

One of the most commonly used tools to manage information is a relational database management system (RDBMS). RDBMS have been used by IT applications to manage operational data. The same technology is now been used for knowledge management. RDBMS traditionally managed text and primitive data types such as numbers and date. Knowledge has to be represented using beyond the traditional data types such as character strings and numbers. Thus other forms of representations such as images and videos are required. Multimedia databases have immerged to manage such data. Operational data of educational management system are managed using this technology. Student registration data, evaluation results and their performances are recorded using student information systems.

2.1.2EDMS

Electronic Document Management System (EDMS) is a rapidly developing technology and is considered as the solution for organizations that needs a way to manage the information efficiently. EDMS applications focus on the control of electronic documents throughout their entire life cycle, from creation to eventual archiving. Its functions include document creation, storage and retrieval, management, version control, workflow and multiple-delivery formats. EDMS allows managing the documentation of an entire process.

2.2 Media for Explicit Knowledge

Explicit knowledge could be represented using different media. Text, graphics, animation, sound and video are the media to represent them. Unlike the traditional media in forms of books information stored digitally can be preserved without any forms of distortion and they can be accessed easily and quickly from any part of the world.

2.2.1 Text

Text is one of the most effective components of representing knowledge. The words embodied as text, convey a powerful message and this has been widely used in handwritten and print media. Most data and information is represented through this medium. It is impossible to convey an unambiguous message without text. To convey a message effectively the message should be specific, definite, concrete and precise. Selection of suitable fonts and size is important for legibility and aesthetic effects. Learning is concerned, summarized text is used to identify the important points and detailed descriptions are for explanations and subsequent supplementary reading.

2.2.2 Graphics

Text and graphics are the basic components of multimedia systems. Text without graphics will fail to retain person's attention as well as long-term retention. Bitmaps (paint) graphics and vector (draw) graphics are two basic forms of still graphics. Each type has its own characteristics and satisfies different needs. Bitmaps stores the graphics as seen on screen while vector graphics stores the instructions of how the graphics is created. Colour is an important component of a picture. However when producing graphics colours should be chosen carefully to ensure effective and pleasing displays.

2.2.3 Animation

Animation adds impact to a presentation. Unlike text and graphics these are dynamic time based media. The visual impact of animation is to harness the learning process. Animations usually take forms like moving an object across the screen, user-controlled movement of an object, bitmap flipping and full animation files. Authoring tools are used to create such objects.

2.2.4 Sound

All forms of verbal communication use sound. Technology has been used to transmit sound across the universe. Sound could be represented using computers, and MIDI (Musical Instrument Digital Interface) and digital audio are the two basic file types used in multimedia systems. A multimedia system requires the use of speech, music or special sound effects. When used for education, speech should be short, manageable and integrated with other media. It should be used as a complementary to text.

2.2.5 Video

Video occupies the most disk space and bandwidth when used over the network. Hence video can be integrated with other media only through use of edited segmented video clips each conveying a specific message.

2.3 Accessing Explicit Knowledge

RDBMS and EDMS manage the explicit knowledge. They are accessed using various technologies such as Internet, Intranet, Search Engines and workflow tools.

2.3.1 Internet

Internet provides a cost effective global network backbone. It connects users from anywhere, as long as they have access to the web. This has allowed users to host information on their computers and make them available for others. Such computers need to be dedicated for that purpose as users will be searching for information at different times. These sites are called web sites and they are connected to the web on 7x24. This technology intends to provide unrestricted access to information. An educational institute will publish all information relevant to the public through their web sites.

2.3.2 Intranet

Intranet is used only within an organization, thus restrict access to information from outside the organization. The appropriate security measures (e.g. firewalls) implements such requirements. These web sites allow employees and authorized users to access information while protecting the same from others. This technology is used to share confidential information within an organization. Teachers and administrators could monitor the overall status of a student and hence take appropriate actions promptly. Teachers can also make their learning material and exercises available through them. Some e-learning systems runs on these networks with login accounts created for its users.

2.3.3 Search Engines

Search Engines are very effective powerful tools that allow text based information retrieval. Web based search engines deploy different types of navigation strategies. Meta searching, hierarchical searching, attribute searching and content searching are among them. This facility is now widely used by most users of the Internet. This has helped researchers, teachers and students to reach the required information and acquire the knowledge.

2.4 Using Explicit Knowledge

The explicit knowledge that was accessed should be able to use effectively. For this it is necessary to ensure that the information gathered is presented in a useful manner. Tools such as Decision Support Systems (DSS), data mining and data warehousing are available for such purposes. These tools are just lying around for use by most users and education sector is no exception.

2.4.1 Decision Support System (DSS)

DSS are software products that transform operational data into useful information such as statistical models and trend analysis for used by the management for decision-making. They summarize internal and external data into graphs, charts and simple reports.

2.4.2 Data Mining

Data mining is a process to discover new knowledge from existing databases. Here, sophisticated data searching techniques and statistical algorithms are used to discover patterns and correlations in vast quantities of data.

2.4.3 Data Warehousing

Many organizations have several databases existing within their organization. A data warehouse attempts to unify all these databases. The technology aggregates the data from different databases and cleans the data in the process of attempting to increase the quantity of the data. Effective data mining could then be performed.

2.5 Sharing Knowledge

Knowledge sharing is done among a network of people. Communication among people could be done through paper mail, fax and telephone. However these techniques are synchronous and less effective across geographical boundaries. IT provides more effective solutions through the use of e-mail, video conferencing, virtual meeting, and document collaboration.

2.5.1 E-mail

E-mail allows sharing knowledge asynchronously. An individual could share knowledge with a community by sending a message to a group of people. Distribution list eliminate the need for everyone to remember the names of the community and also ensure everyone gets the message.

2.5.2 Video Conferencing

Telephone allowed voice communication among distant personnel. This has evolved not only to view a live video of the person but also to connect to a number of people. Although the technology is costly it is been used for scheduled meetings involving people internationally.

Universities having campuses spread over a larger geographical locations have their staff meetings through such technology. This saves travel time of individual. If the time saved and it is used effectively the organization and society will benefit in the long run. Some universities use this technology for teaching as well. Students ask questions by posting them to the teacher using the technology. Such systems require each student to have their individual computer with the ability receive and interact with the system.

Conclusion

Availability of vast amount of information on the web has provided access to all types of learning material. The teacher's lecture notes are no longer the primary focus of a learning process, and the teacher's role and the student's learning process is changing Paradigm Shift Paradigm shifts in today's world have identified the Industrial era being replaced by Technology era. Similarly production process has moved from Products to Knowledge, Workplace has moved from Physical to Virtual and In terms of education this means we should create Knowledge that is accessible virtually with the focus on the student. Virtual access is achieved through Internet / Intranets. Techniques such as e-mail, web notices, discussion forums and video conferencing allow a student to access information without visiting the physical location of delivery.

Over the last five years computers have been introduced to most educational institutes although its ratio to a student is very high. By making the educators aware of the available technology and some taking initiatives to implement them, some forms of reforms may take place

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THE IMPACT OF DIGITIZATION ON EDUCATION

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Introduction

Advances in digital technology have opened up many avenues of learning. Technology has made information accessible / transmittable from anywhere and by / to all groups of people. Education has reached most parts of the world and ICT has become an integral part of human life. The paper relates how these technologies have been used in education and its impact in general. Availability of vast amount of information on the web has provided access to all types of learning material. The teacher's lecture notes are no longer the primary focus of a learning process, and the teacher's role and the student's learning process is changing

Classroom

Use of technology at classroom level was not possible until the teachers delivery mechanisms were aided with technology. Originally delivery mechanism was through verbal communication and then through the introduction of written media such as blackboards. Later through overhead projectors teachers were able to do the writing in advance and project them directly. Use of overhead transparencies allowed them to reuse written material but without improving them. With the invention of projection through a computer, a teacher can easily update his material as well. The same material can also be printed and the students are able to obtain it without having to copy them. This technology has now evolved not only to project text and figures, but also animations, video clips etc.. Thus the teachers are now equipped with tools to teach effectively.

Teacher's Role

In the modern global learning environment teacher's role shifts from "dispenser of information" to "facilitator of learning" as he has only to guide the active students who are involved in using the e-learning material. Classrooms have been fully equipped with permanent multimedia projectors and computers and the facilitator needs to access the e-learning system through the Intranet. Teachers should not control the learning process as well

as they should allow students to perform collaborative work and make some decisions on their own.

Student's Role

Some classrooms are equipped with computer access to all students. In such cases students Interactively participate in the learning process. Now the student's focus is totally on the learning process than on copying note as the learning material can be accessed at a future time. Teachers should ensure that knowledge and skills are not presented to students directly, but are constructed by them in response to information and learning tasks. Teachers need to consider how these learning experiences could be encouraging to students who are performing this type of mental work. Thus student who used to learn facts and skills by absorbing the content presented by teachers and media resources should move towards creating personal knowledge by acting on content provided by teachers, media resources, and personal experiences. The focus should be on acquiring higher order skills like problem solving and critical thinking.

Curriculum Characteristics

In order to change the teacher's and student's role the curriculum also needs to be revised. Traditional curriculum would focus on fragmented knowledge and disciplinary separation. However now we should focus on multidisciplinary themes as future generation will need the ability to move through several different jobs. Thus establishment of basic literacy and focusing heavily on job specific skills is pointless, as one has to change jobs or manage many jobs by themselves. Therefore it is important to emphasize on thinking skills, knowledge integration and application. Depth of understanding will be required than breath of knowledge

Assessments

With changes to the learning process the assessment methods should also change. Instead of measuring a student on fact knowledge and discrete skills, assessments should focus on application of knowledge. This will allow testing of problem solving skills of a student. Students should also be given tasks to demonstrate understanding and creativity.

Society

Using computers for public services is gradually wide spreading. Although these benefits are currently enjoyed by a small fraction of the population the availability will encourage others to join and enjoy the benefits of technology. A public library is a knowledge centerTo provide services through technology it should not only allow members to view available

books, but should also allow viewing of content pages and abstracts. In the case of research papers the facility to download papers, journals and thesis is provided. User must also have a facility to interact with the librarian, suggest procurements, interact with publishers, receive alters on outstanding books, late fees and collection of books reserved.

Infrastructure

Facilities Educators confront with the issue of equity when they consider introducing technology to learn. To develop a country and provide everybody equal facilities is impossible with
the existing free education system and the policy implementation processors. Trying to solve the equity problem and introduce technology at classroom level will result in the country going backward compared to others as well as encourage migration as people are always looking for better learning opportunities and living standards.

Every student must have computer access to successfully implement above ideas. Thus student to computer ration must increase. It is recommended that all education institutions must have computers with a minimum ratio of with those teaching computing with a minimum ratio of. All teachers must be provided with unlimited computer access so that they could prepare their educational material.

Word processing is the most frequently reported application. The most frequently mentioned categories of use are word processing, Internet research, and CD-ROM research. Thus the percentage of schools with Internet access needs to be raised and ultimately all users should have access to the Internet. Lower Internet bandwidth and high usage cost is a bottleneck.

The education system has been producing graduates without any exposure to computers. When these graduates take teaching assignments they are not equipped to use technology for education. Technology and educational reforms has to be done taking these into consideration..

CONCLUSION

By making the educators aware of the available technology and some taking initiatives to implement them, some forms of reforms may take place.

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IMPACT OF DIGITIZATION ON HIGHER EDUCATION

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Abstract

Digital learning is meant to enhance the learning experience rather than replace traditional methods altogether. Digitalization opens up higher education to people who wouldn't be able to afford or access it otherwise, such as people living in remote locations. Similarly, digitalization makes it possible for some people to pursue higher education with less disruption to their lives. Individuals who are already employees, with heavy workloads and important responsibilities, may find that online learning makes it easier to combine their professional and family commitments. Also individuals may access their sessions when they want and learn at their own pace. Combining traditional training methods with digitized learning is one of the ways we can make our future generations to become global contributors who can interconnect across culture, time and geographies. Digitization of education is possible with the help of internet and multimedia applications.

Keywords: *digitization, internet, multimedia, byte, online, pedagogy*

Introduction: We are running into the 21st century where technology knows no bounds. Emerging technologies, social media and the internet are an integral part of our lives. This is the phase of radical development where technology is taking over every field of life. During this phase the education system is evolving for the sake of betterment. New generation curiosity is vast and cannot be catered with educational systems that were designed earlier. If we kept on teaching our student the way we taught them yesterday, we would deprive them of their tomorrow. Old educational system lacks the capability to stand a chance in the 21st century. So we are compelled to use digitization in our educational system.

With the population of 1.35 billion people in a country, the ratio to technology driven citizens has highly increased in last decade. With over 407 million mobile phone users and being a country for the second most social site users, India has an immense opportunity to grow in this field and to grasp the positive vibes of technology in the field of education. With huge development in digital technology, Prime Minister Narendra Modi introduced initiatives like **Digital India** to transform India into a digitally empowered society and knowledge economy. Digital India is a concept to revitalize the education system in India. It is a program that endeavors to bridge the literacy slippage by delivering education through digital platform to students and teachers. It provides an opportunity to access learning sources

through a global platform and breaking the barriers to gain quality education through physical classes. For Digital India to succeed in impacting education, it needs a vision and mission to integrate technology as an important part of our vast and complex education system.

Digitization is the process of converting information into a digital format. Information may be in form of text, pictures, videos or sound. In digital format, information is organized into discrete units of data called as bits. Group of eight bits called as byte that can be separately addressed. This is the binary data that computers and many devices with computing capacity such as digital camera, printer, optical reader, scanner etc can process. A digital learning environment is a term that refers to the use of digital resources by an academic enterprise to enable quality learning efficiently and user friendly. Using digital technology such as the laptops, desktop computers, LCD projector, smart board, electronic readers, and scaners etc. information can be presented in a large variety of ways so that the learner can benefit and learn through the new technologies.

There are a number of technology components available to built knowledge management systems [1]. Local area networks(LAN), Internet and Intranets are the backbones. Digitization of education is possible with the help of internet. India has been rated as the third largest internet consumer. The core existence of online education platforms is being possible with the help of internet. Most universities and colleges in India make use of the internet and they basically use it for conducting online admission, online exams and quizzes and maintain office and students database. The internet and other forms of technology give students access to a huge wealth of knowledge that previously was not accessible to students. Efficiency is a huge benefit from having technology in the classrooms. Teachers and students can quickly access vast amounts of information. Also internet brought equality within education. The information and the technology can be made available for everyone.

Every student must have computer access to successfully implement above ideas. Student to computer ratio must increase. It is recommended that all education institutions must have student to computer ratio minimum 5:1 and teacher to computer ratio minimum 3:1. All teachers must be provided with unlimited computer access so that they could prepare their educational material [2]. In order to change the teacher's and student's role the curriculum also needs to be revised. However, focus should be on multidisciplinary themes as future generation will need the ability to move through several different jobs. It is

important to emphasize on thinking skills, knowledge integration and application. Depth of understanding will be required than breath of knowledge [3].

Advantages of Digitized Education:

Administrative Activities: It is an integral part of the education system. Institute can develop software for management of institute data which include office, student and examination data. Education institute can adopt online admission of the students. Keeping the records of students and maintaining their attendance and roll number is a big headache and time consuming. Colleges and universities can avoid the old manual methods of maintaining the records. They can adopt user friendly computerized methods for maintaining the student and office record.

Online courses: Online courses can be developed by the team of experts. Digitizing information makes it easier to preserve, access, and share. For example, an original document may only be accessible to students who visit its physical location, but if the document content is digitized, it can be made available to students worldwide. If somebody decided to learn some specific courses, but have no time to cover the distance then online courses can give the experience of real-time learning.

Online Examinations: Digitization gave way to the online exam, making the examination process convenient for both teachers and students. Results of online exams can be declared immediately so that student can take appropriate decision about their future academic program.

Digital textbooks: Digital textbooks also known as e-textbooks provide an interactive interface in which the students have access to multimedia content such as videos, interactive presentations, and hyperlinks. This makes learning more interesting.

Digital Library: A digital library is a collection of documents in organized electronic form, available on the Internet or on CD-ROM. A user can access magazine articles, books, papers, images, sound files, and videos.

Simulation and Animation: By offering a visual representation of the topic, students grasp the concept in a more understandable manner. Even the difficult topics can be presented in a simplified way with the help of animation**.**

Online Resources: Online resources help the students to connect with their teachers. With a high increase in the student strength in colleges, pedagogy is being compromised. Online resources are being developed in a way that makes them always available to teachers to

educate the masses. This, in turn, improves the quality of education and increases the number of literate students.

Computer as a tutor: Teachers only help students in the learning process to a certain level and only during college hours. Computers and other similar forms of digital technology allow the student to continue their studies at home and can act as a tutor for the students who are falling behind.

Online feedback:: online feedback and suggestions provided by the students and parents helps management to take correct decision for improving administration and quality of education.

Alumni Database: Computerized database of alumni helps to arrange alumni meet. An alumni association is an association of former students. These associations often organize social events, publish newsletters or magazines, and raise funds for the organization. Alumni are an institution's most loyal supporters. They are ambassadors of the institute.

Institutional Accreditation: To gain an institutional accreditation, a college or university needs to demonstrate that they have information resources, such as internet, digital libraries etc available to their students. They also need to prove to the accrediting body that they have significant student resources, such as enough faculty and staff, and have a track record of graduating students that have success in their field of study. Maintaining digital database of alumni, students and teachers institute can face accrediting committee confidently to achieve top grade.

Freedom to choose place: Students as well as teachers can take online classes any were according to their convenience.

No restriction of time: students can choose own flexible time and start learning whenever they want

Learn at own pace: Learners can spend more or less time to accomplish a similar level of learning.

Learning in own style: Learning is no longer limited to instructional method utilized by the teacher. Interactive software enables students to learn in their own style

Limitations of Digitized Education

Because information can be accessed quickly and displayed through multiple media there are fears that students might not remember fundamental concepts because they can now look it up elsewhere. There are also people who argue that students are losing basic knowledge and reading skills because of use of technology [1].

In a classroom, there is a lot of interaction between participants, so students know each other and learn from one another. There is a loss of communication skills and the ability of students to interact with each other. Since a fairly large amount of the new technology is made for an independent user there are valid concerns about the loss of interpersonal and cooperation skills that students usually develop within a classroom setting [2]. *This lack of personal connection problem can be solved through online video conferences. Ideally online learning is not a substitute to in-class learning but rather a complement to it.*

Digital educational technologies are too expensive for economically backward students. The students that do not have much access to modern technology such as people in lower income groups unable to use computer on a regular basis. Such students will face the difficulty of completing homework.

Conclusion:

Digitization in education has proved to be the right method for saving resources. Online examination platforms have restricted the usage of huge amount of stationary. As considering some of its demerits, classrooms nowadays will become movie halls with audiovisual content, with no communication between students and teachers. The relationship between the student and professor will possibly be blurred due to virtual learning.

Digitization has no doubt changed our education system, but we cannot say that it has diminished the value of our old time classroom learning. The best part about the digitization of education is that it is combined with the aspects of both; classroom learning and online learning methods. Walking hand in hand both acts as a support system to each other, this gives a stronghold to new generation students. After all the quality of education is not dependant on the technology in the classroom but rather on the teacher who is able to take the needs and abilities of their students into account when using new technology in the classroom. At the end Digital India mission is a huge opportunity for us to grow in the field of education.

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IMPACT OF DIGITIZATION ON EDUCATION

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Abstract

21st century is century of computer and mobile. Use of machines, electricity various appliances has reduced the efforts. So smartness in the works is increasing. Similarly many changes takes place in learning style like blended learning model , student-centred learning, classroom-based teaching and learning with mobile and web-based online approaches based on individual learners and their specific needs.. We have to empowered students to use digital technology. We can say that today's global education has faced major changes caused by integration of new digital technologies in academic activity and is actively Searching for efficient implementation models, which will compromise with traditions and Innovations.

***Keywords**: Digitalization on education*

Introduction

The traditional education system was based on the concept of 'knowledge transfer' - the age of guru-shishya parampara -which established a clear teacher-student relationship. However, the digital media and internet have ushered in an democracy of knowledge where education has become a co-operative, self-driven ability, collaborative key of twenty first century skills. It lies at the heart of innovation and its core principle is collaboration and experimentation. In adopting these tenets education is experiencing a cultural shift towards a willingness and ability to change at the same pace as the world around it and this is a brilliant step towards evolution.

Digitalization of education is a powerful technology which leads to reformation and modernization of global education environment. Digitalization means conversion of information into the digital form (which is machine readable language). The United Kingdom is assumed to be the first in the world to introduce compulsory software engineering and IT education in the program for schoolchildren aged 5 - 16 years in 2015.

Meaning of Digitization

Digitization is the process of converting information into a digital (i.e. computer-readable) format, in which the information is organized into bits. The result is the representation of an document, image, sound, (usually an analogue signal) by generating a series of numbers that describe a discrete set of its points or samples. The result is called digital representation or, more specifically, a digital image, for the object, and digital form, for the signal.

Digitisation in education

The process of digitisation in the field of education is emerging at a very fast pace in India. New technologies are being adopted quickly by private schools so as to satisfy the educational needs. Digital tools are extensively being used to enhance the system of education in rural India.

PM Modi's emphasis on the Digital India campaign is going to increase the scope of technology in the country. It aims to ensure better connectivity and maximise the potential of India's demographic dividend.

The impact of Digitisation

In the education field the government also assures broadband connectivity in all panchayats schools, libraries, and other public places.

Need of Digitisation in Education Sector Because

1) Digitalisation is supplementary form of the teaching learning process as it is available to students as per their need.

2) Innovation and technology has made everything much easier and faster, leaving no option for Education sector.

3) **For customization**

Educational Technology can be customized as per student's requirement. it can be moulded as per the student's capability to understand and assimilate.

4) Adapt to technology

The world is moving towards digitalisation has to keep pace with it. our education system needs to be dynamic and needs to adapt to technology.

Today there are apps to learn languages or any other subject. Hence, there are so many impactful means of learning through digitalisation.

5) Practical Approach

Digitalisation brings in a more practical approach of tracking students' performance. One can easily evaluate a child's progress by going through his exam scores, attendance, assignments, etc. For instance, one has a choice to choose a tutor, schedule class as per one's time availability and study offline or online as per their convenience.

6) Time Saver

In today's world where time is money, digitalisation is a big time saver. Apart from metros, there are many tier II and tier III cities where transport system is not fully developed. Students have to commute for hours to reach their educational institutes.

In this scenario, a digital course comes as a rescuer to students from even the remotest parts of the country. One just needs to log into a website or switch on their dish TV channel to learn a subject rather than spend long hours in the commute from one spot to another.

7) Transparency

We can say that digitalisation offers a safe mode of learning which is transparent and accountable.

It also offers them a platform to air their views and suggestions which can be used to improve the system, unlike the traditional method where one has to be quiet fearing reprimand from the teacher. Digitalisation helps in creating a solid partnership between parents and teachers with one goal in mind - better learning for students. initiative to promote indigenous languages. "Digital India" must become the mascot by taking cyber culture equally to every school and every educational institution in India.

Advantages of digitalization on higher education

1) **Digitalization deemphasizes the top-down dissemination of standardized knowledge**. *As an educator, you go from disseminating knowledge orally, via in-class lectures, to putting it online in a variety of formats, including written text, videos, quizzes, and so on. While, almost by definition, oral lectures are prepared in advance, providing such content online frees up class time for more discussion.*
2) **Digitalization makes it possible for some people to pursue higher education with less disruption to their lives.**
3) **Online learning makes it easier to combine their professional and family commitments**. *The possibility with online learning to access your sessions when you want and learn at your own pace is a major advantage for many students. It all very much depends on individual learning styles and short or long-term professional goals.*

4) Digital education reaches and accessibility allow it to permeate to a much larger segment of the society which would have otherwise remain deprived. This alone would enable the woefully overstretched education system to keep pace with the growing needs and aspirations of an increasingly urbanizing society
5) the 24x7 access to lessons and the self-taught construct allows students flexible learning times and pursue education alongside other commitments
6) Uniform content and learning packages will ensure uniformity of knowledge dissemination and eliminate vastly varying standards between good and better institutions. With hand held internet devices available with most students, the engagement with teachers would extend well beyond conventional school timings
7) Digital education also promotes minimizing infrastructure and maximizing outcomes, significantly reducing the costs of education and making it more affordable.

Disadvantages of digitalization on education

The digitalization of higher education mainly affects dissemination, Pierre explains. "The truth is that online teaching is enhanced in some aspects but also downgraded in others. You can compare online learning to a textbook, but textbooks in which people will also be talking to you and asking you questions. However, unlike a textbook, online learning provides more tutoring and guidance as well as a rhythm (thanks to deadlines), with greater incentive to be assiduous about covering the material.

It is true, though, that an online setting does not provide certain elements of the in-class experience - notably, a lack of personal connection. In a classroom, there is a lot of interaction between participants, so people get to know each other and learn from one another. Having met someone physically increases personal connection far more than is possible online, even with webcasts and video conferences. Such limitations are why, for me, ideally online learning should not be a substitute to in-class learning but rather a complement to it."

Conclusion

The beauty is in finding the right balance between online and in-class learning, and the best way to make progress is to experiment with different combinations. The world of online learning is constantly evolving, and it is hard to predict where it is all going, with digitalization set to affect different disciplines in different ways. If we wait for it to be perfect before we get involved, then we will never get involved, which would be a pity. It's a matter

of familiarizing oneself with digital tools and platforms and using trial-and-error to figure out what works and what doesn't.

We might state that modern educational system faces creative crisis. Class work and lessons do not contribute to students' personal initiatives to learn something new, establish objective connection between their knowledge and the real world, and use their imagination to look for non-standard answers to standard questions instead of using stereotypic models. Therefore the classroom of the future should not be a place of knowledge transfer, but a place of investing in the mind of students, focusing on creativity and innovation and not on repeating ready-made opinions or mechanical response to test questions.

If the students actively take to the use of mobile technology, then there is hope for appropriate use of digitalisation. The government must take some initial steps such as the improvement of internet speed and increase in online courses for the students. Also, there is a need for other language translations available for surfing the internet. Though, English is the *lingua franca*, we should have our own indigenous languages for dissemination of knowledge through translation. Thus, the government should invest some money in the "Digital India"

Finally, it should be noted that today's global education has faced major transformations, caused by further integration of new digital technologies in academic activity and is actively searching for efficient implementation models, which will compromise with traditions and innovations.

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IMPACT OF DIGITIZATION ON EDUCATION

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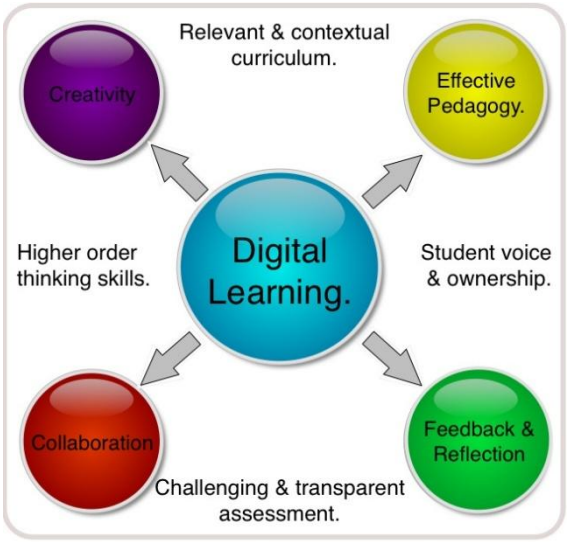
Abstract

Education has reached most parts of the world and ICT has become an integral part of human life. This paper describes the process of generation, creation and acquisition of knowledge through the technology. The use of ICT to manage and organize explicit knowledge is highlighted. The paper also describes how technology is used to access and apply such knowledge. The paper relates how these technologies have been used in education and its impact in general. The modern society wants to know the information as it happens and when it happens, and the world is moving from an information society to a knowledge society. Thus education is given the highest priority and brainpower is becoming the most valuable asset of an organization. Advances in digital technology have opened up many avenues of learning. Technology has made information accessible / transmittable from anywhere and by / to all groups of people. Traditionally education is centered on sources such as schools, teachers and print media. The learners reached the information sources by enrolling with schools, teachers and libraries. Prior to the digital era, information was not accessible by the majority of people, and even those accessed were unable to obtain current information with respect to today's context.

Introduction:-

Technology has made imparting education stress-free for both students and educators. Schools are gradually implementing digital teaching solutions to involve with a generation of learners familiar with the likes of PlayStations and iPads and trying to make the classroom atmosphere more broad and participatory. Information and communication technology in education has facilitated student understanding, students are perhaps the most ready and exposed to external education but they are in the best situation to absorb what comes up in the classroom. Currently students live in a world that is constantly linked and alive outside the class room, so traditional methods won't work now. The true revolution in education can only be achieved via digitization of education so that students can learn at their own speed

both within and outside the classroom. Their learning upgrades while they carry on to advantage from fostering, mentorship and direction of their teachers.



New technologies in education:-

Right from K-12 schooling to higher education programs, every level of our education system is affected by technology. With increased connectivity, speed and cloud-based storage capabilities, schools and colleges have an enhanced communication network that makes way for improved knowledge sharing. Digital portfolios are becoming quite a rage among high school students who use it to demonstrate their knowledge and achievements and is now being widely used a strong tool for their admission procedure to college. Coming to higher education institutions, most of them provide students with digitalized learning materials managed through online learning/knowledge management systems. Some universities are also experimenting with virtual learning spaces and have been providing free courses and learning material online.

The scope for adaptive learning:-

Another important advantage of this digital wave in education is the increased scope of adaptive learning. Giving feedback and requesting information has become so much easier these days, thanks to knowledge sharing systems and social media. Institutions and academicians are now trying to adjust the way they present instructional content based on students' responses and preferences. With improving technology, students can even become content creators by being able to add their own thoughts to platforms that support and encourage adaptive learning.

The advent of MOOCs:-

Massive Open Online Courses or MOOCs are courses available online that integrate learning materials of different mediums like videos, texts, infographics and so on into a package. They encourage consuming this information with the online student community via social networks. This has democratized the way of learning and instruction, especially in higher education programs and now you can get trained at your own pace from any location of your choice.

Teacher's Role:-

In the modern global learning environment teacher's role shifts from "dispenser of information" to "facilitator of learning" as he has only to guide the active students who are involved in using the e-learning material. Classrooms have been fully equipped with permanent multimedia projectors and computers and the facilitator needs to access the e-learning system through the Intranet. Teachers should not control the learning process as well as they should allow students to perform collaborative work and make some decisions on their own.

Student's Role:-

Some classrooms are equipped with computer access to all students. In such cases students interactively participate in the learning process. Now the student's focus is totally on the learning process than on copying note as the learning material can be accessed at a future time. Teachers should ensure that knowledge and skills are not presented to students directly, but are constructed by them in response to information and learning tasks. Teachers need to consider how these learning experiences could be encouraging to students who are performing this type of mental work. Thus student who used to learn facts and skills by absorbing the content presented by teachers and media resources should move towards

creating personal knowledge by acting on content provided by teachers, media resources, and personal experiences.

Advantages:-

- Digital education promotes minimizing infrastructure and maximizing outcomes, significantly reducing the costs of education and making it more affordable.
- Secondly, the 24x7 access to lessons and the self-taught construct allows students flexible learning times and pursue education alongside other commitments
- Thirdly, uniform content and learning packages will ensure uniformity of knowledge dissemination and eliminate vastly varying standards between good and better institutions. With hand held internet devices available with most students, the engagement with teachers would extend well beyond conventional school timings
- Digital education has certain distinct advantages. Its reach and accessibility allow it to permeate to a much larger segment of the society which would have otherwise remain deprived. This alone would enable the woefully overstretched education system to keep pace with the growing needs and aspirations of an increasingly urbanizing society

Conclusion:-

Over the last five years computers have been introduced to most educational institutes although its ratio to a student is very high. By making the educators aware of the available technology and some taking initiatives to implement them, some forms of reforms may take place.

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A STUDY TO FIND OUT IMPACT ON THE USAGE OF TABLET AMONG STUDENTS

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Abstract

Today's era of education is very dynamic in nature. School students are exposed not only to various teaching methodologies but to a variety of tools. This involves usage of IT enabled tools. Such tools are the main source of visualization, creativity and an ethical source for information extraction. These tools are portable and are easy to use. Our research focuses on the usage of tablets by the school students to enhance their design thinking capability and the usage of mobile applications to enhance their critical and creative thinking process. The paper explains the importance of student engagement in the schools, usage of tablets in schools, meaning of design thinking and importance of its enhancement in school students. Paper further extracts information on using tablets and the mobile application "Creya"for VI standard students of Ashoka Universal school.

Introduction:

Home work has been considered as a traditional way for enhancement of student knowledge. Homework has been a proven tool towards improvement in mathematics. But redundant surveys and research done in the western countries it is evident that school students do not show much improvement in studies with home works in non mathematical subjects. For improvements in other subjects, collaborative work and design thinking is needed .This can be done only after improving student engagement in the schools. Years back, "Akash" tablets were distributed by the government to top ten management and IT institutions. This provided a gateway towards mobile application development and usage of tablets in education. The same technology has been floated in some Nish schools. These schools focus on over all development of the students. "How does a student think?" which is a very important factor. How we think derives the solutions. Design thinking is generally defined as an analytical and creative process that engages a person in opportunities to experiment, create and prototype

models. It often helps you to gather feedback and redesign. Entire process of design thinking helps the child to create a prototype by systematic and step by step thinking by taking collaborative efforts.(1) Mobile applications like "Creya"(2) are very effective and have proven to be benchmarks in enhancing design thinking amongst the school students. With simplified and well designed projects for a student, every student of standard VI at Ashoka Universal School goes through 12 projects in a year with painstaking efforts leading to an icebreaking confidence of problem solving and innovation.

IMPORTANCE OF STUDENT ENGAGEMENT IN SCHOOLS:

In today's rush hours, in major of the homes, both parents are working and the child is living in a nuclear family. While the child has no listening ear at home, may not be a sibling to play with, the child feels very lonely at home to do his home works. School has a set of close friends and the right infrastructure to facilitate group learning. (3)Research studies have also found that homework does not show much improvement in the child of western countries apart from the subject of Mathematics. While Mathematics need increased focus and concentration, Science and social sciences need collaborative studies and team work.(4) For these major purposes, some private schools have kept their gateways open for the children to experiment on projects using collaborative approach to implement design thinking process. There are various other ways to increase student engagement in the school like sports, exercises and yoga. While the later focus on gross motor development, earlier one develop meta-cognitive skills in the students. As per the theory, knowledge can be delivered to the students in four levels:

Sr.no	Type of knowledge	Characteristics	Tools
1	**Factual**	Facts, events, rules, definitions.	Text Books
2	**Conceptual**	Short explanations, terms and terminologies, formulae	Text books, Reference books
3	**Procedural**	Methods, Algorithms, lab procedures	Lab,experiments,demonstration
4	**Meta cognitive**	Projects, models, dramatization, real life exposure to concepts learned	Literature,research articles,IT tools,**Mobile apps,Visualization softwares**,internships

Table 1

USAGE OF TABLETS IN THE SCHOOLS:

With reference to table 1,as we move from "What to learn" to "How to learn" while we trace from level 1 to level 4 in the table, it is found that teaching meta cognitive tools need high usage of IT and IT enabled tools. This is needed as working in real life situation with

machineries and laboratories is very expensive part, while usage of mobile software applications is not only cost effective but gives stimulating and amazing results towards growth of student's design thinking process and visualization capacity. Using tablets has found to be very effectively in school environment for the following reasons:

1. Tablets are large in size.
2. Graphics is clear with increased resolution.
3. Tablets can be shared in a group of four students.
4. Tablets are portable and handy.

It is found that 70% of people in UK use tablets for primary education. But the side effect of independent tablet usage has introduced a growth in social chatting. Carrying tablets at home with internet connections is giving rise to internet addicts. It is not recommended to give homework on tablets at home to the students. So, tablets should be used in the school premises under a strict supervision of teachers. Simon Mason, head of Honywood Community School in Essex, said it was not possible to say whether results are changed by any individual factor, but he is a strong advocate of tablet computers in schools. (5)

Further research in comparison of paper based exams to tablet based exams have proven that usage of tablets to appear for exams has given better results as compared to paper based test. (6)

MEANING OF DESIGN THINKING AND IMPORTANCE OF ITS ENHANCEMENT IN SCHOOL STUDENTS.

Design thinking is defined as an analytic and a creative process that engages a person in opportunities to experiment, create and prototype models. It has become an essential element towards critical thinking. Design thinking not only leads to innovation but also enhances collaborative thinking as students work in groups to work on a task or a project. Following are the characteristics of a design thinker (7)

Sr.No	Characteristics	Description
1	**Human- and environment-centered Concern**	Designers must continually consider how and what is being created will respond to human needs. They should also consider environmental interests at a level with human interests as primary constraints for the design process.
2	**Ability to visualize**	Predisposition toward multifunctionality designers should look at different/multiple solutions to a problem and keep the big picture of the problem in mind while focusing on its specifics.

3	**Systemic vision**	Designers should treat problems as system problems with opportunities for systemic Solutions involving different procedures and concepts to create a holistic solution.
4	**Ability to use language as a tool**	Designers should be able to verbally explain their creative process forcing invention where detail is lacking and expressing relationships not obvious visually (i.e., explanation should go hand in hand with the creative process).
5	**Affinity for teamwork**	Designers need to develop interpersonal skills that allow them to communicate across disciplines and work with other people.
6	**Avoiding the necessity of choice**	Designers search competing alternatives before moving to choice making or decision making. They try to find ways to come up with new configurations. This process leads to a solution that avoids decision and combines best possible choices

1. Table 2 (reference http://rer.aera.net)

From above table it is very clear that design thinking leads to a collaborative style of reaching to a solution to a given problem using critical and creative thinking styles.

Information on using tablets and the mobile application "Creya" for VI standard students of Ashoka Universal school, Nashik.

Creya is a mobile application that helps the users to build design thinking patterns for problem solving. "Creya" follows the thinking style as shown in figure 1.

1. **Define:** Here the teacher describes the problem and students are suppose to define it in their own words.

2. **Ideate:** With a team of three students in a group, group members brain storm on their ideas related to problem solving.

3. **Prototype:** Students build a working model or draw the model in their book that carry the proposed solution.

4**. Evaluate:** Teacher evaluates the model and students make relevant changes.

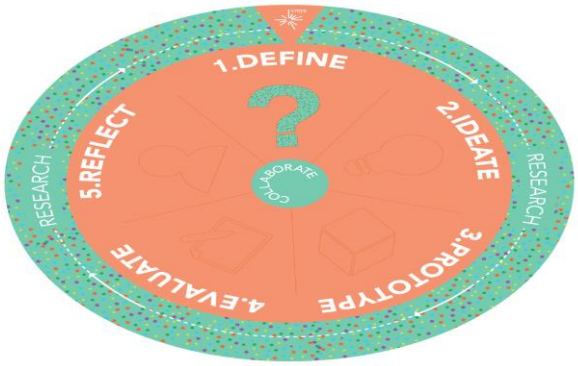

Figure 1

"Creya" lab at Ashoka universal school: Here a group of three students are assigned a problem related to society or geography or an innovation. One of the student acts as the project manager the other one is the information provider and the third one is a team player. Three of them work in collaboration. The information provider can use Google using "Tablet" to seek relevant information. Solution over the problem is found using the brainstorming approach. Students have to write a detailed report in their workbooks. Teacher gives individual feedback for every team.

Research Methodology: A quantitative research methodology was used to observe the wok done at the "Creya labs" by the researchers. A quetionarraire was prepared and survey was conducted on grade VI students. Statistical analysis of data was done that lead to meaningful results.

Results and finding:

Following is a bar graph depicting feedback given by the students on usage of "Creya"

Sr.No	Parameter	No of students :60
1	Enhances Creativity	56
2	Helps in Exams for problem solving	58
3	Time wastage	4
4	Loss of focus	6
5	Do not enjoy	2
6	Hectic schedule	1
7	Misuse of tablet	0
8	Team building	59
9	Enhances communication	49
10	increases participation	54

Table 3

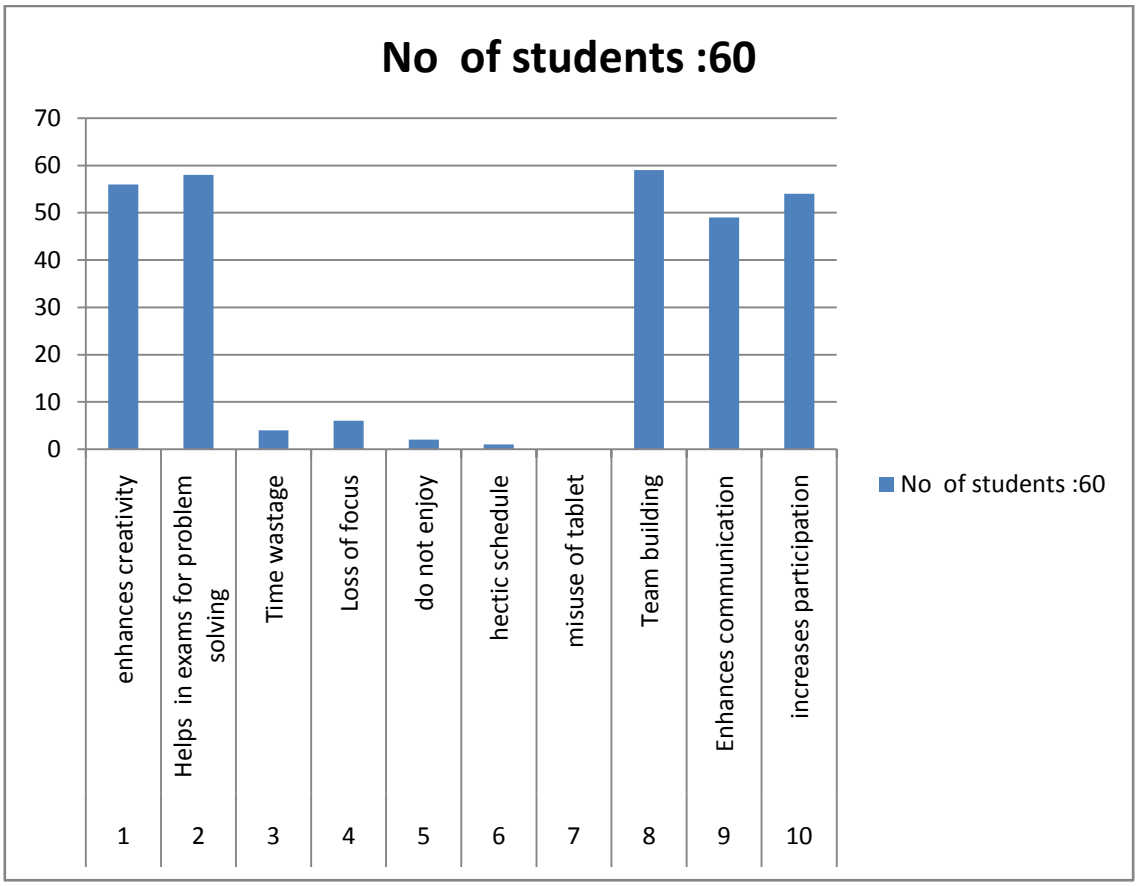

Figure 2

We have conducted a survey for standard VI students, gathered the response to our survey and found the following:

1. "Creya" lab is used by the students twice a week.
2. Students prefer tablet usage to computers.
3. Students complete 8-12 projects in a year related to innovations, social problems, capstones and life skills.
4. Students love to work in small teams of three, feel to be united and like the collaborative approach of problem solving.
   Teacher guides them and gives them feedback for enhancement using workbooks.
   Workbooks are available for assessments.
5. Using "Creya" has helped students to actively participate in exhibitions, elocution competitions and in exams.
6. "Creya" has built an essence of problem solving using creative thinking in the students.

Conclusions: A study was conducted for sixth grade students, it is found that usage of tablets to enhance design thinking enhance creativity, help in problem solving, generates team building spirit, enhances communication and increases participation in the students. Also using open sources technology can further be useful to enhance learning.

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EFFECT OF DIGITIZATION ON PERSONALITY TRAITS

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Many years ago Albert Einstein has said, "we cannot solve our problems with the same thinking we used when we created them". The advent and onward march of digitization is a testimony to what Einstein has said.Post agricultural revolution and industrial revolution, the digital revolution marked the beginning of the information age. Gone are the days when we had to wait for days together to receive a message from someone staying at a far off place. Digitization has made words like 'instant' and 'connectivity' the buzzword of 21st century. Righte from Babbage's analytical engine which was invented in the latter half of the 19th Century to the supercomputers and the cell phones being used today, digitization has progressed in leaps and bounds. The kind of advancement that we are witnessing in the digital sector today was unimaginable a couple of decades ago.

In the midst of such superior dominance of the machine, it is imperative that we understand as to where do weas human beings stand today. While mankind took its baby steps of digitization in the mid-19th century, today we are in a race against time to make our lives more and more satisfying by leveraging technology. Undoubtedly technology has significantly changed the way we think, behave and move. Hence it is more necessary than ever to access the effect of digitization on personality traits.

Personality traits reflect people's characteristics patterns of thoughts, feelings and behaviours. For the purpose of understanding the effect of digitization on personality traits The Five-Factor Model is followed here. It is popularly known by the acronym OCEAN: Openness, Conscientiousness, Extraversion, Agreeableness and Neuroticism. Let's take a look at how digitization has left its mark on personality traits.

1) Openness:

This trait refers to the extent to which a person is original, has broad interests and is willing to take risks. Digitization has provided huge opportunities for individuals to widen their interests. Before digitization became popular people have very limited access to the information related to their areas of interest. There were huge financial constraints on how

much data or information they could access. Moreover digitization has enabled the individual to put his opinion in the open without being manipulated by anyone in between.Digitization has in a way empowered even the most common man to express his opinion and be heard.

2) Conscientiousness

Conscientiousness is the extent to which a person is careful, scrupulous and persevering. Digitization has enabled people to be better organised than ever. The advent of computer and laptop has ensured that people are able to present their work in a neat and systemised manner with very little efforts. Time, which is considered to be the greatest resource of our times, can be optimally utilised with the help of technology. For example the presentation of a data or analysis of a data has become effortless with technology and another significant feature is that an individual does not necessarily have to be highly skilled do so.

3) Extraversioin

Extraversion is the tendency to experience positive emotional states and feel good about oneself and the world around one. Digitization has in a way given voice to millions of people who would have otherwise gone unheard in the noise of humanity. Digitization has enabled people to instantly connect with the person of their choice. Hence being separated by distance doesn't have such a huge impact on human relations as was the case during pre-digitization times. Hence people are in a better position to keep themselves in a positive frame of mind as any service is only a 'call' away.

4) Agreeableness:

Agreeableness is the tendency to get along well with others. Digitization enables the people to be in a group virtually. Due to this the dynamics of human relations has also changed. It gives the individuals the luxury of expressing their opinion without the pressure of any kind of interruptions. It also enables the person to place his or her opinion minus their body language, which in face to face communication plays a decisive role.

5) Neuroticism:

Neuroticism is the tendency to experience negative emotional states and view oneself and the world around one negatively. The flip side of digitization is that there is so much happening around us in the virtual world that one get easily carried away. People tend to put it out in the open their achievements and all that which comes along with it. This can have a demoralizing effect on someone else. They may experience a sense of underachievement or feel depressed with their inability to achieve greater things. In the midst of the success stories, individuals forget that they are living in a different time and space and hence it is not appropriate to

compare. The greatest bane of digitization with respect to personality trait is that people look out for instant gratification. In the absence of this they have higher chances of getting into depression and thereby living an unsatisfied life. There is a constant fear of losing out to others.

Thus digitization has far-reaching consequences on personality traits. In the words of Janice H Reinold, "In today's modern world people are either asleep or connected". Individuals need to know when and where to demarcate their lives from digitization so that their lives are not controlled by the electronic devices that they use. Individuals need to understand that digitization is here to make life easier for us and not to be dictated by the various aspects of digitization.

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DIGITAL ETHICS FROM LOCAL TO GLOBAL

Meenu Tripathi (Pg. 194-199)

Abstract

Digital ethics or information ethics in a broader sense deals with the impact of digital Information and Communication Technologies (ICT) on our societies and the environment at large. In a narrower sense information ethics (or digital media ethics) addresses ethical questions dealing with the internet and internetworked information and communication media such as mobile phones and navigation services. Issues such as privacy, information overload, internet addiction, digital divide, surveillance and robotics are discussed today particularly from an intercultural perspective. The message of this paper is that information ethics can and should contribute to address the challenges of the digital age.

INTRODUCTION

In the beginning the discussion was focused on the moral responsibility of computer professionals. But for scientists like Wiener and Weizenbaum the impact of computer technology was understood to be something that concerned society as a whole.

To build a people-centred, inclusive and development-oriented Information Society, where everyone can create, access, utilize and share information and knowledge, enabling individuals, communities and peoples to achieve their full potential in promoting their sustainable development and improving their quality of life, premised on the purposes and principles of the Charter of the United Nations and respecting fully and upholding the Universal Declaration of Human Rights." (WSIS 2003).

To harness the potential of information and communication technology to promote the development goals of the Millennium Declaration, namely the eradication of extreme poverty and hunger; achievement of universal primary education; promotion of gender equality and empowerment of women; reduction of child mortality; improvement of maternal health; to combat HIV/AIDS, malaria and other diseases; ensuring environmental sustainability; and development of global partnerships for development for the attainment of a more peaceful, just and prosperous world." (WSIS 2003).

The academic as well as the societal debates on these issues have increased rapidly particularly since the rise of the Internet. I define digital ethics or information ethics in a narrower sense as dealing with the impact of digital ICT on society and the environment at

large as well as with ethical questions dealing with the Internet digital information and communication media (digital media ethics) in particular. Information ethics in a broader sense deals with information and communication including but not limited to the digital media.

This paper addresses some ethical issues regarding the impact of digital ICT on society and the environment. In the second part I discuss issues such as privacy, information overload, internet addiction, digital divide, surveillance and robotics particularly from an intercultural perspective. The message is that ethical reflection can and should contribute to address and find sustainable solutions to the technological challenges of the digital age.

THE GLOBAL IMPACT OF ICT ON SOCIETY AND THE ENVIRONMENT

Economic, political and ecological activities of modern societies rely heavily on digital communication networks.

The relevance of digital ICT on the economy became obvious with the burst of the 2000 dot com bubble and, in my opinion, was one of the main factors leading to the recent world financial and economic crisis. Beyond the moral individual responsibility of politicians, bankers and managers, there is a systemic issue that has to do with the digitalization of financial and economic communication and information. Digital capitalism was and is still able to bypass national and international law, control and monitoring institutions and mechanisms as well as codes of practice and good governance leading to a global crisis of trust not only within the system but with regard to the system itself.

Many policy and economic experts agree that in order to develop a people-oriented and sustainable world economic system, national and international monitoring agencies as well as international law and self-binding rules are needed. Academic research in digital ethics should become a core mandatory issue of economics and business studies. Similarly to the already well established bioethics committees, ethical issues of ICT should be addressed taking as a model for instance the European Group on Ethics in Science and New Technologies to the European Commission.

ICT has a deep impact on politics leading to a transformation of 20th century broadcast mass media based democracy, or mediocracy, on the basis of new kinds of digital-mediated interactive participation. New interactive media weaken the hierarchical one-to-many structure of traditional global mass-media, giving individuals, groups, and whole societies the capacity to become senders and not "just" receivers of messages.

The Internet has become a local and global basic social communication infrastructure. Freedom of access should be considered a fundamental ethical principle similar to freedom of speech and freedom of the press. Some of the rights stated in the Universal Declaration of Human Rights such as the right to freedom of thought, conscience and religion (Art. 18), the right to freedom of opinion and expression (Art. 19), and the right to peaceful assembly and association (Art. 20) need to be explicitly interpreted and defined taking the new and unique affordances of internetworked digital media into consideration.

A free Internet can foster peace and democracy but it can also be used for manipulation and control. For this reason I assess a necessity to strive for a future internet governance regime on the basis of intercultural deliberation, democratic values and human rights.

The third issue I would like to highlight concerns the impact of the materialities of ICT on nature and natural resources. Electronic waste has become major issue of digital ethics. It deals with the disposal and recycling of all kinds of ICT devices that already today have devastating consequences on humans and the environment particularly when exported to Third World countries. Issues of sustainability and global justice should be urgently addressed together with the opportunities offered by the same media to promote better shelter, less hunger and combat diseases. In other words, I advocate for the expansion of the human rights discourse to include the rights of non-human life and nature. The present ecological crisis is a clear sign that we have to change our lives in order to become not masters but stewards of natural environment.

DIGITAL MEDIA ETHICS

The main topics of digital media ethics or digital (information) ethics are intellectual property, privacy, security, information overload, digital divide, gender discrimination, and censorship. They are objects of ethical scrutiny not only on the basis of universal rights and principles but also with regard to cultural differences as well as to historical and geographical singularities leading to different kinds of theoretical foundations and practical options. This field of ethics research is now being called intercultural information ethics.

An example of the relevance of the intercultural approach in digital media ethics is the discussion on the concept of privacy from a Western vs. a Buddhist perspective. While in Western cultures privacy is closely related to the self having an intrinsic value, Buddhism relies on the tenet of non-self and therefore the social perception as well as the concept of privacy are different.

Digital surveillance of public spaces is supposed to ensure safety and security facing unintentional or intentional dangers for instance from criminal or terrorist attacks. But at the same time it threatens autonomy, anonymity and trust that build the basis of democratic societies. New technologies allowing the tracking of individuals through RFID or ICT implants are similarly ambiguous with regard to the implicit dangers and benefits. Therefore they need special scrutiny and monitoring).

Another example is the question of information overload, which has a major impact in the everyday life of millions of people in information-rich For example there is a growing need for cell-phones-free times and places, in order to protect ourselves from the imperative of being permanently available.

The ethical reflection on these issues belongs to a theory of the art of living following some paths of thought by French philosopher Michel Foucault. He distinguishes the following kinds of technologies, namely:

- "technologies of production, which permit us to produce, transform, or manipulate things,"
- "technologies of sign systems, which permit us to use signs, meanings, symbols, or significations,"
- "technologies of power which determine the conduct of individuals and submit them to certain ends or domination, an objectivizing of the subject,"
- "technologies of the self, which permit individuals to effect by their own means or with the help of others a certain number of operations on their own bodies and souls, thoughts, conduct, and way of being, so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality." (Foucault 1988, 18)

Another important issue of digital media ethics concerns the so-called digital divide should not be considered just a problem of technical access to the Internet but an issue of how people can better manage their lives using new interactive digital media avoiding the dangers of cultural exploitation, homogenization, colonialism, and discrimination. Individuals as well as societies must become aware of different kinds of assemblages between traditional and digital media according to their needs, interests and cultural backgrounds. The vision of an inclusive information society as developed during the WSIS must be global and plural at the same time. Concepts like hybridization or polyphony are ethical markers that should be taken into account when envisaging new possibilities of freedom and peace in a world shaped more and more by digital technology.

In a recent report on "Being Human: Human-computer interaction in the year 2020," a result of a meeting organized by Microsoft Research in 2007, the editors write:

"[T]he new technologies allow new forms of control or decentralisation, encouraging some forms of social interaction at the expense of others, and promoting certain values while dismissing alternatives. For instance, the iPod can be seen as a device for urban indifference, the mobile phone as promoting addiction to social contact and the Web as subverting traditional forms of governmental and media authority. Neural networks, recognition algorithms and data-mining all have cultural implications that need to be understood in the wider context beyond their technical capabilities. an, cultural and social values.

CONCLUSION

Humanity is experiencing itself particularly through the digital medium as a totality or system of interrelations. Who are we and what do we want to be as humanity? This question asks for a historical not a metaphysical answer. A negative vision of such unity are balkanisations and imperialisms of all kinds, including digital ones.

"[W]here, after all, do universal human rights begin? In small places, close to home - so close and so small that they cannot be seen on any maps of the world. Yet they are the world of the individual person; the neighbourhood he lives in; the school or college he attends; the factory, farm, or office where he works. Such are the places where every man, woman, and child seeks equal justice, equal opportunity, equal dignity without discrimination. Unless these rights have meaning there, they have little meaning anywhere. Without concerned citizen action to uphold them close to home, we shall look in vain for progress in the larger world."

- Eradicate extreme poverty and hunger
- Achieve universal primary education
- Promote gender equality and empower women
- Reduce child mortality
- Improve maternal health
- Combat HIV/AIDS, malaria and other diseases
- Ensure environmental sustainability
- Develop a global partnership for development

These goals begin "in small places, close to home" too. They can be achieved only if we continue and expand the freedom campaign towards nature, i.e., if we expand the goals of human rights to nature as well. Digital globalization should make us aware of the human

interplay with each other in a common world instead of making of the digital perspective over our lives and over reality a kind of digital metaphysics or (political) ideology.

Who are we in the digital age? As human cultures become digitally hybridized this process affects social life in all its dimensions as well as our interplay with nature. The key task of digital ethics is to make us aware of the challenges and options for individual and social life design. The digital medium is an opportunity for the subjects of the 21st century to transform themselves and their relations in and with the world. This implies allowing each other to articulate ourselves in the digital network, while taking care of historical, cultural and geographical singularities. An ethical intercultural dialogue is needed in order to understand and foster human cultural diversity. Hereby we must look for common ethical principles so that digital cultures can become a genuine expression of human liberty and creativity.

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DIGITIZATION AND CHANGING HIGHER EDUCATION SYSTEM

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Abstract

Digitization is changing education system at high level. It is a process which is changing reports in to the tablets, laptops or computers. Various research studies have been concluded that soon the teacher will learn the digital technology there will be enhancement of the learning experience in the students. Learning experiences are the core of the education system. Learning experiences are changing with the new technologies in all level of education system. The higher education systems are also greatly changing due to the new inventions and digitization. Now-a-days, it is challenge in front of the teacher to learn and to practice technology and use digital media in teaching learning process. To learn digital technology is also opportunity to manage all the assign work in short time period. This paper suggests changes in the higher education system due to use of digital technology in education. This gives the positive and negative impact of the higher education due to digitization. This paper also suggests opportunities to teachers for managing administrative work with the help of the digital technology.

Keywords- *Digitization, Higher education, positive impact, negative impact, Opportunities to teachers*

Digitization and changing higher education system

Introduction- Digitization provides technical tool to effective teaching methods and enhancing learning experiences of students that helps to provide student centric environment in teaching learning system. Technology helps students to understand concepts by their own. The technology not helping only in the enhancement of the teaching learning process in higher education, it also helps to manage administrative or reporting work of the teacher within less time and papers. Though digitization is not a new concept in education system, but its use is not effective, it is increasing from last decade. The increase facilities of the digitization will increase opportunities of the higher education in the remote area. Digitization also manages to give education to the students who are not able to attend full time college because their personal work through online learning systems. Various educational researchers have been proved that digitization helps to enhancing the higher education system. But according to some educationalist it is also having some negative impact on the education. The main negative impact of the digitization is on the development

of the reasoning capacity of students. Apart from negative impacts of the digitization it has been used in higher education system effectively now a day. For the effective use of the digital technology, teacher should have positive approach to learn and practice technological tools which are helpful for teaching learning system and administrative work. The importance in the use of digitization is that we should able to manage negative impacts and enhance the positive uses of the digitization.

Digitization

It is process of conversion of the information in the digital form. Information can be in the form of Pictures, image, sound, and document. Digital form means formats which can be readable by using computer.

In this format, information is organized into discrete units of data that can be separately addressed. This is the binary data that computers and many devices with computing capacity (such as digital camera s and digital hearing aid s) can process.[7]

Higher Education

Courses after secondary school leaving certificate are come under higher education. Specially graduate and postgraduate courses are the higher education courses, with this doctorate and post doctorate courses are also higher education courses.

Digitization and higher education

Digitization is the powerful tool in the reformation of the higher education system. It enhances the system of teaching learning and also administration work in the higher education.

Digitization helps to give similar to the practical experiences to the students. The more it gives the increased emphasis on the interactive and collaborative classrooms.

It also helps to reach up to people who cannot reach up to educational institutes easily, without disturbing their life.

Digitization is responsible to rapid transformation of phenomenon of knowledge impartment in higher education. Internet plays very important role in the reforming of the educational ecosystem.

Digitization is also helps to improve mechanism of teaching learning through feedback mechanism.

Digitization helps to improve research capacities and reduce timing for the review of related research material. It helps in the personal attention to the understanding of the students.

Digitization also reduce paperwork of the teacher and reports can kept in soft and shared in the soft with the help of internet and intranet facility.

For effective use of the digitization one has to skilled with the digital technology. Students also need to practice the digital technology on day to day basis.

Digital tools used is higher education

E-book: Electronic book which can be readable in tablet or in computer. By using E book we can store maximum books in small area and which can share easily with students.

Learning management systems: These are easily available systems which are used to manage records of the students and to monitor the growth of the students. LMS also helps for sharing the study material in all formats - pictures, slides, documents or videos.

Internet: This is the facility which helps in research and project work in the higher education. This helps for the reviewing research papers and for the getting connected for cooperative and collaborative learning.

Intranet: This is used within the institute for sharing report and managing meetings for doing work in less time and less efforts.

Automated Feedback: This system helps in the quick feedback for the students for the fast research process or project report.

It also helps in feedback giving for assessment done for the understanding of the students.

E-learning app: These helps for the handy data transfer of the study material and conference learning or conducting interactive research discussion.

Smart classes: This helps to give actual learning experiences in the teaching learning process with this there is enhancement of understanding of the students.

Positive Impacts

- **Choosing own style:** Digital learning helps a student to learn in a style that best suits him. For example, if he is unable to understand through theory, he can use interactive programs to get a better understanding of the concept.
- **Ability to learn anytime:** Thanks to the internet and the modern technology, students can now access study material on their laptops at any time and from anywhere. As a result, the students are not restricted to learning only during the school hours.
- **Boosting achievement:** Research has shown that students who have access to digital learning and who make good use of it, tend to perform well in their papers.
- **Improving concepts:** Blended learning tools are very helpful in making the concept understandable. Students are better able to comprehend problems.

- **Enhancing creativity:** Not all students are able to perform well by solely relying on course books. For them, it is important to utilize their creative side. For this matter, digital learning is the best option.
- **Increased engagement:** It is true that interactive programs and strategies are engaging for students. They are able to develop an interest in them, helping them to learn voluntarily and more effectively.

Negative Impacts

 A **distraction:** Digital learning can become a bit of a distraction at times. Sometimes, the student begins to spend more time on it than he should. At times, he completely loses interest in his course books and classroom lecture. This way, he is bound to miss out on important stuff.

 An **expensive idea:** Not everyone can afford to buy electronics for studying. Laptops, smart phones, etc. are quite expensive and therefore cannot be afforded by everyone.

 Missing out on the real stuff: Lack of face-to-face interactions with the teachers and classmates is not a healthy move. It is important to remember that not all education can be received through digital learning. Class lectures and discussions are important learning processes. The bond of a teacher and pupil is very important for a positive learning experience.

- **Less development of reasoning capacity:** online learning provides more tutoring and guidance as well as a rhythm, with greater incentive to be assiduous about covering the material**,** but it does not able to develop the reasoning capacity of the students.

Opportunities for teacher

- To learn new technologies for easy delivery systems
- To learn digital technologies for managing reports
- To maintain research data and to analyze it.
- To understand negative impact of the digital technology and to use its positive aspects for enhancement of the learning of the students.
- To maintain feedback given to the students for the checking their growth in the understanding subject.

Impact of digitization on higher education

- These developments enable institutions to improve student services

- The digitisation of the education logistics support processes helps institutions operate more efficiently
- The availability of more and improved data on student conduct and attendance facilitates the scheduling of lecture and examination rooms and also helps to create improved student intake forecasts
- New digital and web-based technologies are spurring rapid and radical changes across all media industries.
- Digitalization opens up higher education to people who wouldn't be able to afford or access it otherwise**,** such as people living in remote locations.
- Most of students with digitalized learning materials managed through online learning/knowledge management systems.

Further studies: This study can be extended further to quantitative analysis of the effectiveness of the digitization in higher education

Conclusions

Digitization is useful if it is useful wisely with control of the educator, so that we can minimize the negative impact of the digitization and improve the positive impact of the digitization.

If the teacher uses digital techniques optimistically it can reduce the stress of reporting work. It also helps in evaluation process in short time with high effectiveness and fewer mistakes.

Digitization is the need of this generation as they are living more in digital world than the living world.

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IMPACT OF DIGITIZATION ON EDUCATION

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- Digitization is the Process of converting analog signals or information of any form into a digital format that can be understood by computer system or electronic devices.
- The term is used when converting information, like text, image or voices and sounds, into binary code.
- Digitization information is easier to store, access& transmit and Digitization is used by a number of consumer electronic devices.

"Technology can become the 'wings' that will allow the educational world to fly farther and faster than ever before; if we will allow it". – Jenny Arledge.

We are running into 21st century where technology known no bounds. This is the phase of radical development where technology is taking over every niche and corner. Smartphones, laptops and tablets are no more unknown words. During this phase the education system is evolving for the sake of betterment, as this generation's students are not born to be confined by the limits of simple learning with educational systems that were designed earlier. If we kept on teaching our children the way we taught them yesterday, we would deprive them of their tomorrow. Our old educational system lacks the use Digitization in our educational system.

"Digitization is the integration of digital technologies into everyday life by the Digitization of everything that can be digitized.

Yes! Digitization is the trending term, describing the 21st century in the most precise manner as possible. We are in the era where unprecedented ideas are unfolding in our education industry and creating the advancement that can't be matched by lagging behind in terms of technology.

Importance of Digitization

- One of the most important qualities of information in digital form is that by its very nature, it is not fixed in the way that texts are printed on paper.

- Digital texts are neither final nor finite, & are fixed neither in the essence nor in from except when a hard copy is printed out, for they can be changed easily and without trace of erasure or emendation.
- Flexibility is one of the Chief assets of digital information and precisely what we like about text poured into a word processing program.
- It is easy to edit, to reformat, and to commit print in a variety of iterations without the effort required to produce hard copy from a typewriter.
- It is easy to summon up quickly any number of variations of value, hue, and placement to see, rather than to imagine, what different visual options look like.
- Electronic resources are immensely Appealing to nearly everyone concerned with education and scholarship. The potential benefits ofinformation in digital form, unfettered access. Flexibility, enhanced capabilities for analysis and manipulation are profound.
- The organization of enterprise content is more than just the placement of files and folders, or of text on the page, meticulously organized content is accounted for under the company's knowledge management system- Which aims to ensure successful content governance, content lifecycle, and learning and change management.
- High quality content, regardless of whether the site aims to inform, entertain, or sell a product will increase the site's likelihood of converting visitors. But beyond providing high quality content asite also needs to organize that content in a way that makes it accessible to visitors.

The various advanced techniques are used in learning.

- **Online courses**: Online courses want to learn a new language or maybe to get trained in some specific course, but have not time to cover the distance? Online courses are developed by experts who have unmatched proficiency in their specific field and give you the experience of real- time learning by designing their own online course.

❖ **Online Exam**: Digitization gave way to the online exam, making the examination process convenient for both teacher and students.

❖ **Digital Textbooks**: It is also prevalent with other names like other names like e-texbooks and e-texts digital textbooks provide an interactive interface in with the students have access to multimedia content such as video, interactive presentations and hyperlinks.

- **Accumulation of students on the sameplatform** : Students coming in from various regions, Schools and Colleges are finding ways to develop an intergrated solution to meet the educational needs of all students by converting the use of various techniques live online courses. Online exams, digital textbooks, quizzes and e- notes are improving the quality of education for the students.

- **Conclusion :**

Digitization is a revolutionary step for our education system. It makes the explanation of educational concepts, interactive and easy understandable because of technologies used for teaching. Using the internet, Students can learn on this own using Online study material digitization has no doubt changed our education system, but we can't say that it has diminished the value of our old time classroom learning. The best part about the Digitization of education in the 21stcentury t is that It is combined with the aspects of both classroom learning and online learning method. It gives a stronghold to our modern students. Digitization in education has also proved to be the right method for saving resources. The initials cost of traditional to digital transition could be a concern because It uses costly items such as computers, projects etc. Internet connection needed for online studies is in our country but Digitization changed our educational system It makes easy life, and very helpful in teaching learning process.

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IMPACT OF DIGITIZATION ON EDUCATION

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Abstract

Digitization is leaving its mark in every field today. The present paper asks a detailed view of how digitization impact present day education. The objective of the paper is to identify how digitization has brought a positive change in education.

Keywords: *Engagement, Learning styles, Infrastructure, Adaptive learning.*

Introduction:

Over the years the models of Education has changed in accordance with the changes in the society. It has adapted with the circumstances and needs of each era. Hence education today is a far cry from what it was centuries ago or even decade ago. From the "Gurukula Education system" to the black board based class to the now digital classrooms, Education has come a long way, indeed. Technology has leaving its immiscible mark in every field and its impact in the field of education is remarkable. John Dewey has so aptly said, "If we teach today's students as we taught yesterday's, we rob them of tomorrow." In today's world technology has moved away from being a luxury enjoyed by the elite to a necessity of the masses. Digitization of education opens the doors for greater avenues and a brighter future for the world. It has transformed learning from an academic exercise to a more involve and interactive experience for the learner.

What is digitization?

Digitization is the process of converting information into a digital format . In this format, information is organized into discrete units of data (called bit s) that can be separately addressed (usually in multiple-bit groups called byte's). This is the binary data that computers and many devices with computing capacity (such as digital camera's and digital hearing aid's) can process. Digitization is the process of converting information into a digital format. In this format, information is organized into discrete units of data (called bit's) that can be separately addressed (usually in multiple-bit groups called byte's). This is the binary data that

computers and many devices with computing capacity (such as digital camera's and digital hearing aid's) can process.

We are running into the 21st century where technology knows no bounds. This is the phase of radical development where technology is taking over every niche and corner. Smartphones, laptops, and tablets are no more unknown words. During this phase the education system is evolving for the sake of betterment, as this generation's students are not born to be confined by the limits of simple learning; their curiosity is vast and cannot be catered with educational systems that were designed earlier. If we kept on teaching our children the way we taught them yesterday, we would deprive them of their tomorrow. Our old educational system lacks the capability to stand a chance in the 21st century. So we are compelled to use digitization in our educational system.

The new phase of learning has begun and involves various advanced techniques like:

- **Online courses**

  Want to learn a new language or maybe to get trained in some specific course, but have no time to cover the distance? Online courses are developed by experts who have unmatched proficiency in their specific field and can give you the experience of real-time learning by designing their own online course.

- **Online exams**

  Digitization gave way to the online exam, making the examination process convenient for both teachers and students.

- **Digital textbooks**

  Also prevalent with other names like e-textbooks and e-texts, digital textbooks provide an interactive interface in which the students have access to multimedia content such as videos, interactive presentations, and hyperlinks.

- **Animation**

  This is a captivating approach in which students learn in a better manner. By offering a visual representation of the topic, students grasp the concept in a more understandable manner. Even the toughest topics can be presented in a simplified way with the help of animation.

The impact of digitization is such that it will completely refine the way teachers teach and how student understands concepts. Digitization is a huge wave on the ocean of education and the sooner we learn to swim with it, the sooner will be able to gain the most from it. The impact of digitization of education is elaborated below.

1). Better Engagement With Students :

Education has moved away from being teacher centric to being student centric. With this shift in the focus there is a greater emphasis to engage the student more than ever in the teaching- learning process. In the 21st century learning is no longer confine to the ability to just read, write and perform arithmetic. Digitization in education has made artificial intelligence, innovation and Nano technology a common factor among the new age students. Digitization has ensured that even the quietest student in the class can find expression through technology. Thus idea of getting every student involved has a greater chance of with the help of digitization.

2). Greater Reach :

In spite of the huge strides made by India in various sectors, the majority of our youth and children line in villages. In order to achieve the target for educating the entire population of students, there is no better option than digitization. Digitization makes it possible for the best of the teachers to reach the student even in the most remote part of our country . By ensuring that education reaches the most deprived person in our society, we can say that we have taken the first step in right direction.

3). Flexibility in Learning :

A rigid learning environment discovers a large number of potential learners from entering the various avenues of education. A 24*7 access to learning allows the student to peruse education at their own pace without compromising on their other commitments. There may be individual who are in a job to make ends meet with heavy workloads and important responsibilities. Digitization of education makes it easier for them to confine their professional and family commitment. It enables the learners to customize their learning on the basis of their individual learning styles and short or long learn professional goals.

4). Minimum Infrastructure Adequate:

Lack of infrastructural sources has been a major drawback for a majority of the educational institutions. Various factors like building, space, basic facilities, transportations etc. determines the quantity and quality of students who enroll in a school or college. But with thedigitization of education, there is a panacea for all the above. There is no constraint of time, space or infrastructure. Hence there is a significant reduction in the cost of education there by makeup it more affordable.

5). Boost for Adaptive learning :

Digitization of education has provided a major boost for adaptive learning. Giving feedback and requesting information has become so easy now with the knowledge sharing systems of social media. There is a greater focus on presenting the content on the basis of the preferences of the students. There is an increasing base of the students who add their thoughts to platforms that encourage adaptive learning.

Thus digitization is set to become the game changer in the field of the education. While all this is inevitable, the one question that keeps coming back is – Will digitization replace teachers. The answer is big 'NO'. As stated by Alice Keeler, "Good teachers can't be replaced by technology. What tech does is allow teachers to spend more time focusing on their learners and building those relationships"

Conclusion:

Technology can become the "Wings" that will allows the educational world to further and faster than every befores.Digitization is the integration of digital technology into everyday life by the digitization of everything that can be digitised. Digitization has no doubt changed our education system, but we can't say that it has diminished the value of our old time classroom learning. The way the digitization of education industry in the 21st century proven to be a boon to our society.

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PERSONALITY TRAITS IN SOCIAL MEDIA

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Abstract

In the era of Digitalization, Social media has become an integral part of modern society. It concerned to social network where users can socialize online, create contents, discuss & share views, it means users can express their views in different terms & formats according to their capabilities of extra version. According to researcher's different personality descriptors found on social media. When users share their views, ideas that may be their own or others. This capability shows their personality traits. There are "The Big Five" or "Five Factor Model" of personality trait that is OCEAN.

INTRODUCTION-

21st century has witnessed a growth in the field of digitalization. Internet has become an integral part ofs modern society. There are various apps on web such as e-mail, games, videos etc and these applications engage users with internet which is social media. Social network websites such as Facebook, Linkedin, twitter have attracted users. In the field of digitalization in the last decades is the introduction of hand held devices such as smart phones and tablets. These devices provided convenience and portability with advanced computing capabilities and connectivity. Smart phones contain a personal digital assistant, media player, digital camera, GPS navigation, web-browser, Wi-fi, etc. From such social media platforms users may write their views, post questions or activities, their events in the form of texts or multimedia. Other users in their social network- friends, experts, followers may respond to these contexts with liking, commenting, sharing or re-tweeting and may be followed by other users down the network. These activities constitute users' behavior in social media.

According to researcher's different personality descriptors found on social media. If we want to know what a person likes, we do not necessarily to ask how sociable they are, how friendly they are and how gregarious they are, because sociable users are friendly and social. We can summarize the personality dimensions by five factor model of personality. These five factors are OCEAN.

OBJECTIVES OF "OCEAN"-

1. Describe the OCEAN personality trait in social media.
2. Describe the factor approach extends broad personality traits.
3. Describe the limitations of each personality trait.
4. Describe new traits and social media platform combined to predict social activities.
5. Describe how personality traits get refined social learning.

SOCIAL MEDIA PLATFORM-

Learning is considered as a social activity. A user does not learn from teacher, the textbook, references, in the classroom but also from agents like the media, peers and society. And now a days the explosion of the internet which is a source of social learning where users construct knowledge in interaction with others in comprehensive manner.

Social media means " A group of Internet based applications that build on the Ideological & Technological foundation of web & that allow the creation & exchange of user-generated content" (Kalpan & Haenlein 2010)

Social media is concerned to social network is an online interactive platform where users can socialize online, create contents, discuss & share views, it means users can express their views in different terms & formats according to their capabilities of extra version when users share their views, ideas that may be their own or others. This capability shows their personality traits.

FIVE FACTOR MODEL OF PERSONALITY (OCEAN) -

Every time we use words like active, quiet or anxious to describe users around us at that time we are talking about a user's personality. "The Big Five" or "Five Factor Model" of personality trait was introduced by Allport & Odbor in 1936. These Big Five is with the acronym OCEAN. O is for Openness to experience, C is for Conscientiousness, E is for Extraversion, A is for Agreeableness, N is for Neuroticism.

1. **Openness to Experience -** The tendency to appreciate new art, ideas, values, feelings, emotions, curiosity & behavior. It reflects the degree of intellectual curiosity, creativity, and preference for novelty. Diverse behavior, Open to various values and beliefs.
2. **Conscientiousness -** The tendency to be careful, on time for appointments, to follow rules, self–disciplined, act dutifully, aim for achievement& to be hard working, Deliberate, Orderly.

3. **Extra version -** The tendency to be talkative, sociable & to enjoy others, the tendency to have a dominant style, energetic, surgency, assertiveness,Active, Positive, Emotional, Excitement.
4. **Agreeableness -** The tendency to agree & go along with others rather than to assert one's own opinion and choices, cooperative, compassionate, Trusting, Straight Forward, Altruistic, Compliant, Modest.
5. **Neuroticism -** The tendency to frequently experience negative emotions such as anger, anxiety, depression, worry, sadness, Self Consciousness, Impulsive, Vulnerable. and being interpersonally sensitive. It also refers to the degree of emotional stability.

SOCIAL MEDIA AND PERSONALITY TRAIT –

Users behavior on social media may include various online activities such as joining a group, socializing for personal or professional reasons. On asocial media platform, users may write their views, questions, poems, describe activities or events, etc in the form of text or multimedia. Other users in their social network like friends, followers, experts may respond to these contents with liking, bookmarking, commenting, sharing or re-twitting, which may be followed by other users down the network. These activities constitute users behavior in social media. We observe users around us that users are different from each other's. Some users are active while others are very quiet. Some worry a lot, others almost never seem anxious. According to users behavior in groups we easily identify their nature. This behavior tends to their personality trait.

Sr. no.	PERSONALITY TRAIT	BEHAVIOR FOR LOW SCORERS	BEHAVIOR FOR HIGH SCORERS
1.	**Openness to Experience**	Narrow interest, inartistic, not analytical, not emotional on any message, views.	Immediately appreciate to new art, ideas, values, emotions, videos, message
2.	**Conscientiousness**	Unreliable, not hard working, careless, for giving response to any message, views,	hard working, neat, punctual, self–disciplined,careful for giving response to any message, views,
3.	**Extra version**	Less Active, Positive, Emotional, Excitement for sharing, commenting, re-twitting in groups	MoreActive, Positive, Affectionate, Excitement for sharing, commenting, re-twitting in groups
4.	**Agreeableness**	Quickly and confidently asserts own opinions &uncooperative,	Agrees with others political opinions, forgiving, good nature, Straight Forward,
5.	**Neuroticism**	Calm, unemotional, self – satisfied, secure in groups	Constantly worrying about any message, reactive and excitable, insecure in groups

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DIGITIZATION OF EDUCATION IN THE 21ST CENTURY

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Abstract

Use of information technology and other digital media for the purpose of education can be said as Digital learning. This Digital way of learning came into existence due to rapid growth of digital world. Digitization have power to transform learning from an academic exercise to an engaging experience. Digitization has been proving to be revolutionary in the field education due to its dynamic and adaptive nature. Tools, such as computers, mobile devices and the internet, are now integrated into the educational system. Though there are many pros of digitization, there are certain difficulties arising due to it. Various ways of digital education along withs advantages and difficulties while using digital means of education are discussed in the following.

Introduction

Information Technology had a great impact on the society in 21st century. Constant technological advances have piloted the society into the new world of digitization. Formally digitization is converting texts, pictures or sounds in digital format which is visible on a computer. Digitization have completely reformed education system Use of smart-classrooms is one of the example of digitization in educational system. It is expected to have even more impact in coming days. Implementation of Digitization has become a need in today's world of information technology.

1. Digitization In general

"Digitization is the integration of digital technologies into everyday life by the digitization of everything that can be digitized."

It is the process of converting analog signals or information of any form into a digital format that can be understood by computer systems or electronic devices. The term is used when converting information, like text, images or voices and sounds, into binary code. Digitized information is easier to store, access and transmit, and digitization is used by a number of consumer electronic devices.

This analog signals are captured and stored in digital form. This is usually done via sensors, which sense analog signals like light and sound, and transform them to their equivalent digital forms via an analog-to-digital converter chip or a whole circuit dedicated to converting a specific analog signal. This term is used to describe, for example, the scanning of analog sources (such as printed photos or taped videos) into computers for editing, 3D scanning that creates 3D modeling of an object's surface, and audio and texture ,map transformations.

2. Impact of digitization on education

Technology affects every aspect of our lives. It has shown its presence everywhere. But digitization had a huge impact on education that cannot be denied and has done nothing but improved the quality of education. The use of technology within education changed significantly in the last decades. Predominantly analog technologies, such as whiteboards and handouts, has largely been replaced by digital ones, e.g. PowerPoint presentations, smartboards and online course platforms. Given that this technology shift has been an ongoing process, it is likely that this trend will continue into even more enhanced technology such as augmented or virtual reality.

One example of this is the Microsoft HoloLens which is Microsoft latest augmented reality technology which they predict can create new possibilities within education.

2.1 Education in Digitized Way

It is the mode of education that use information and communications technology to support, enhance, and optimise the delivery of information. Many studies have proved that the use of ICT in education increases the motivation of students. In many studies educators broadly reported motivational effects rising when students were able to make changes and improve the quality of their work, regarding text composition, presence and presentation. A report made by the National Institute of Multimedia Education in Japan, proved that an increase in the use of ICT in education with integrating technology to the curriculum has a significant and positive impact on students' achievements. The results specifically showed that the students who are continuously exposed to technology through education has better 'knowledge', presentation skills, innovative capabilities, and are ready to take more efforts into learning as compared to their counterparts. The use of ICT increases also the participation of pupils in educational activities, both regarding the attendance as well as the engagement and active participation during the classes.

The presence of ICT in schools is an essential condition for the successful introduction of creative educating methods and techniques. Another term that is gaining currency is blended

learning. This refers to learning models that combine traditional classroom practice with e-learning solutions. For example, students in a traditional class can be assigned both print-based and online materials, have online mentoring sessions with their teacher through chat, and are subscribed to a class email list. Or a Web-based training course can be enhanced by periodic face-to-face instruction.

2.2 The new phase of learning which involves new techniques like:

- **Online courses**

When you want to learn a new language or maybe to get trained in some specific course, but have no time to cover the distance? Online courses are developed by experts who have unmatched proficiency in their specific field and can give you the experience of real-time leaning by designing their own online courses.

- **Online exams**

Digitization gave way to the online exam, making the examination process convenient for both teachers and students.

You can setup an exam in such a way that it will auto-grade itself. If you only use multiple choice questions you never have to check an exam again. The online exam system will take care of that hassle. Completely automated. Students don't have to travel to a specific location to conduct the exam. So even for students from remote area's it's possible to take the exam.

- **Digital textbooks**

Digital textbooks is a great source of gaining knowledge. It provide an interactive interface in which the students have access to multimedia content such as videos, interactive presentations, and hyperlinks.

Students are more interested in technology; therefore they may be more engaged in digital textbooks. For college students, they save a lot of money by not needing to buy textbooks. Digital textbooks will be updated with the latest information in order to keep students up-to-date

- **Animation**

Animations are a form of dynamic representation that display processes that change over time. For example, they can show the flux of high and low pressure areas in a weather map, the results of running a computer program (algorithm animation), display blood pumping around the heart, or represent invisible processes such as the
movement of molecules. This is a captivating approach in which students learn in a

better manner. By offering a visual representation of the topic, students grasp the concept in a more understandable way. Even the toughest topics can be presented in a simplified way with the help of animation which is beneficial for students.

Benefits of Digitization

- Helps students to gain knowledge more effectively and efficiently.
- Encourages teachers to utilize new teaching methods.
- Allows teachers to create new and exciting ways to educate students.
- Have access to massive source of information to refer to.
- Individuality is promoted due to customizable learning experience.

Threats of Digitization

- A majority of teachers believe that advances of technology in education has led to decreased attention span of students.
- Diminishes the value of in-person education.
- Adapting new methods may be hard for some teachers because of constantly changing and evolving technology.
- Being exposed to extensive amount of information via internet or any other digital source may create confusion amongst students. So proper guidelines are constantly needed to be provided by teachers.

Conclusion

Digitization has no doubt changed our education system, but we cannot say that it has diminished the value of our old time classroom learning. The best part about the digitization of education in the

21st century is that it is combined with the aspects of both; classroom learning and online learning methods. Technology has also made our learning world smaller so that everyone can have access to the education of the global classroom. It is inclusive at all levels of education. This has had the great effect of enabling a post graduate student to achieve their master's degree in their "spare" time, as well as reaching students who have physical or geographical limitations. Digitization in education has also proved to be the right method for saving resources. This way the digitization of education industry in the 21st century proves to be a boon to our society.

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TESTING OF PROFICIENCY OF STUDENTS FOR ADMISSION OF STUDENTS FOR POST GRADUATE PROGRMME IN E-EDUCATION IN DIGITAL SOCIETY

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Abstract

Twenty First Century education through technology is mandatory for all level. Technology also changing over the time. The training is essential to use the Technology in teaching – learning process to all related persons in education system. Yashwantrao Chavan Maharashtra Open University(YCMOU) Started e. B.Ed. Programme in 2009 as a pilot batch, to develop the person to use technology in their work place. The learner having different capacity to use technology therefore the dropout rate is high. YCMOU again rethink the programme and convert it into Post Graduate Diploma in e education in Digital Society(PGDEEDS). Graduate and techno savi learners expected to be admitted. The Orientation Programme, was conducted at various places. YCMOU started pilot study learners from Nashik, Pune, Satara, Solapur and Mumbai district. Student has to submit one essay related on any issue related to education, 4-5 min video related use of ICT in to their day to day life or any other topic related to their work and online English competency test for admission. These three activity is to be submitted online. These activities are evaluated by five point rating scale. Those student successfully completed minimum two activity, they are admitted to the programme. In this paper the presenter present the analysis of activities for admission process of the PGDEEDS Programme.

Introduction

Yashwantrao Chavan Maharashtra Open University (YCMOU) having Mission "To strive to carry higher, technical and vocational education to the home of the common man; to reach to unreached through the use of modern communication technologies and the adoption of distance education mode and to develop an innovative and open system of education with the ultimate goal of becoming as mass varsity".

YCMOU in collaboration with Maharashtra Knowledge Corporation Limited (MKCL) form Indian Consortium for Educational Transformation (I-CONSENT) having different universities collaboration developed a programme named as B.Ed. (E-Education)

Overview of the B.Ed. (E-Education)

Dharankar, M. (2013) reported that B.Ed. (E-Education) teacher training programme was designed and developed with the support of COL and with the guidance of international

experts in constructivism. The Programme of two year's duration. The main objectives has been develop the manpower needed to work in the state of art of technology. The Programme is offer through online mode. Some face-face workshop also conducted at three study centers. The Pilot batch was conducted in the year 2009-2011.

Deshmukh, M. & Deskmukh, V. (20--) mentioned that the learners of B.Ed. (E-Education) program were a heterogeneous group with respect to communication and computer skills, besides their background. Those not match exposed to ICT, felt isolated within an e-learning environment, handicapped in virtual reaction, but techno-savvy students had less anxiety and more interactivity.

NCTE not approved this programme as a innovative program. Therefore rethinking of Program took place. The name of the program was changed. It is named as "Post Graduate Progrmme in e-education in digital Society"

Key Objective and objectives of the program

- To develop '*change agents*' for implementing e-Education practices in Digital Society

Objectives

To prepare the

- teacher-professionals for technology-enhanced learning of students in conventional and virtual schools
- professionals as reflective practitioners and as knowledge resource developers
- to acquaint the professionals with the variety of ICTs
- develop skills to select and use the best suited technology in teaching / learning processes
- promote innovativeness, creativity, entrepreneurship and leadership qualities in the professionals
- enable them cultivate the qualities amongst their students.
- acquaint the professionals in the context of globalization affecting education and learning outcome
- develop in the professionals communicative, interactive and collaborative-cooperative learning skills
- Undertake action research and use and adopt innovative practices for their development

Prospective Students

- Non Government Organization (NGO) (Community Development Centre)
- Graduate students (Search for Job)
- Home Schooling Stream (Parent or Person of Private tuitions)
- School Education (Teacher from Primary to University Level)

Program Structure and details

Eligibility for admission:

- Graduation , Basic IT literacy, Video development, English Competency

Essay Writing.

Program Fees :

- Rs. 20, 000/- for full program of two years. But Pilot Batch Fees paid by YCMOU & MKCL.

Strucuture of the Programme

- Duration 2 years
- Semester System 4 Semesters
- Total credits 64 credits

Program Outline given in the Table No.1

Table No.1 Post Graduate Diploma in e education in Digital Society

No.	Sem I	Sem II	Sem III	Sem IV
1.	ICT-BASED WORKER EDU221	E-Learning Practitioner EDU225	E-Learning Resource Developer A EDU229	Tech-Pedagogue Developer B EDU 233
2.	E-Culture Practitioner EDU 222	E-Learning Specialist EDU226	E-Learning Resource Developer B EDU230	Change Maker EDU 234
3.	E-Culture Nurturer EDU223	Evaluator EDU227	Tech-Pedagogue Developer A EDU 231	Practising Place Development Project EDU 235
4.	Networker EDU224	Action Researcher EDU228	Action Research Part 1 EDU 232 EDU232	Action Research Part 2 EDU 232 EDU232

Support for Academic Delivery

The students are working in different institutions. The students required support. This support is given by various ways like

Practicing Place -addressing an issue and attempting to solve it.

Local Community -Local mentors Support for addressing concerns for solving problem at hand.

Central Community -Course teams Senior education experts and mentors. Sharing of best practices.

Three Types of Learning

The Learner are learned in different ways i.e. Structured Learning**,** Enrichment Learning and Social Developmental

Structured Learning

- Introduction to Role Playing & Situated Problem Solving
- Roles, Scenario building and Creating Functions & Performances (Process-Result) in Role Play and Problem Solving Based Education.

  13 Role based Courses, Action Research Project.
- Students do activities and situated assignments for each Course /Role Play.
- Teachers /Tutors help in doing and assessing the performance.
- Mentors supervised weekly/ bi-weekly working and submissions and reports periodically.
- Management, Counsellor helps in ensuring smooth working and learning of a student at the Practicing Place.
- Action Research Project.
- Evidences of performance of specific roles with unique functions.
- Content with scenarios and situations on hard drive.
- Assignment management system for submission of assignments and projects for certification

Enrichment Learning

- Specific (Modules offered by the Experts in support to Role Playing and Problem Solving)
- General –
- Lectures and Seminars offered by experts in New Education and Social Reconstruction in Digital Society.
- Special interest based Circles and Pariwars.
- Community formation – whatsapp groups
- Blog for sharing best practices

Social Developmental

- Learning -Situated Developmental Learning. Link to their Practicing Places Group / Pariwar Formation. Solving the local problem.

Evaluation Process

- Assignment Submission
- Practical Performance
- Viva voce
- E- Portfolio / E-Workbook
- Action Research Project
- Practising Place Research Project.
- **Benefits of the programme**
- Personal development (ICT Skills Enhancement)
- Practicing Place Development
- Social Development

Publicity of the Programme

PGDEEDS Programme is very different. The student don't give any fees for the program. Therefore interested student expected to admit for the Porgram. Therefore various Publicity strategies are used for the same in different Institution. Seven- eight Hundred peoples are impressed for the programme. Out of them about392 students fill the admission form. To find out the interest of the students three activities are given to the students. Detailed instructions are given to the students by mail.

Essay Writing – Objectives – To Find Out the thinking Process of the students.

words limit1500, Language is Marathi/Hindi/English. Handwritten or typed mode of submission PDF/ JPG Form. Marks for evaluation 50

Video Shooting – Obectives – To find out the Communication skill of the students.

4-5 min about use of technology in education or usability of technology in their field. Marks for evaluation 30

English Competency Test – To find out the understanding level of English. Marks for evaluation 20

Multiple Choice Question 20 in which 10 Questions related to grammar and 10 question related to Para and Questions answers. Marks for evaluation 20

Minimum level of passing aggregate 40 marks in any two activity. All these activity are evaluated online.

Evaluation Process of Preadmission Activity

Essay and Video are evaluated by using five point rating scale. For essay 10 points are included in the scale having the components Content Density, Presentation, Language, Internal Consistency, Update Subject Knowledge, Relation to Education, Submission of essay, Overall impact. Video Recording Evaluation Scale includes Clarity in Voice, Clarity in Thinking, Accurate Body Language, Internal Consistency, and Overall Impact.

Data for the Preadmission activity students are given TableNo.2

Table No.2 Preadmission activity completed by the students

No.	Admission Activity	Candidate number
1.	Total Print Form received	392
2.	Rejected Form (No Graduation)/ Not want Admission	21
3.	Two Activity completed pass students	153
4.	Two Activity completed fail students	1
5.	Only ECT Completed students	19
6.	No any completed by the students	198

Observation and Conclusion–

Essay Writing-

1.) Most of the students submitted handwritten activities. Few of them submitted in typed form. It is word file font are varied therefore it not open properly. Again University member contact them to send it in PDF/ JPG format.

2) Most of the Essay related on innovative practices using in their day to day work.

3) Few of them are think about how technology is useful for 21st century teaching Learning Process.

4) One student copy the essay of his friend. It is seen when checking the essay. The university member contact both of them and request to submit again different essay for evaluation. This learning is not only the copy and paste learning. The copied student again the submit the essay. It is again evaluated.

Video Shooting-

1) Most of the students are used android Mobile for Shooting their video

2) Most of the students shows tension on their face because they are not comfortable for the shooting.

3) Few of them used LCD Projector for teaching of Subject.

4) Two Students are developed PPT and give Voice to the PPT.

5) One of the student submitted the video including the technology activities done for the primary level teaching learning in primary schools.

English Competency Test (ECT)-

1. Detailed instruction are developed to solved the ECT it is useful for the students who are teach in vernacular language.

2) Configuration of computer for the test is also given in the letter. Most of the students required technical support from computer persons.

3) 40 min are given to slove the ECT. It is sufficient for the students.

4) Some students are not get connected due to technical Problem, again the test was conducted online and interested students are completed it.

General Conclusion-

All the students are not at the same level to use technology in their day to day work.

There is need of Specialized training. The YCMOU and MKCL Member developed one separate course on ICT Worker for the students.

Summary

Role of ICT is very importance in each field of life. Peopled required specialized training for the same. Customize program are benefitted for them. Before the development of the program, need analysis of the students for capacity to learn with the help of ICT are required.

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SOCIAL NETWORKING SITES AND YOUTHS

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Abstract

Youths are the future pillars of Nation. In the era of digitization youths maximum needs are fulfilled through Internet. Most of the youths spent maximum time on social networking sites. This paper focuses on what are the effects of social networking sites on youths and how it helps to shape their virtual behaviour is being highlighted in the present paper.

Keywords: *Internet, Social Networking Sites (SNS), Youths.*

Introduction:

In the era of technology everyone is using technology our life is engrossed by using technology from morning till night and we cannot imagine our life without technology. So how could youths be aloof from this magic stick of technology as all the youth are born in technology age. An information environment is emerging from rapid, simultaneous and interconnected evolution of transmission systems, These information have long time impact in youths. The question arises what is the impact of the sum of these changes on youths while communicating and absorbing the information. Its more important to understand how these technologies will facilitate and amplify the social and cognitive process of this internet generation.

Trends in the Evaluation of Transmission Systems :

Patterns of Growth in Information Volume :

Cyber space is the global networked information representation space created by the world wide interconnection of computer memory, data storage and users. Young users experience it as a physical and social space. For young users cyber space is a library of libraries, a giant electronic mall, a digital bank.

- The number of access points into cyber space is expenses in Number, Density and Mobility.
- Developed technologies in cyber space raise some issues such as when, where and how information should be accessed by the young users.

- As each access point allows the individuals to both produce and receive information.
- Information flow is speeding up and expanding on an increasingly diverse range of Bits Transportation system.

Social Networking sites and Social Virtual Environment :

- A real time interaction, approximating group face to face contact.
- Anonymity, with options for self-disclosure as relationships develops.
- Environments that help to structure interaction and talk, such as groups organized by activity or a topic or some other level of affinity.

The latest generation of chat environment have such type of pictures and images which seems to be very real. In those virtual environments such as world's Inc and Blaxxun, visitors are allowed to choose an avtar or the image that physically represents them in virtual world.

These social networking sites support some advanced features having more complex social behaviour such as virtual gangs, real transactions, political activity and virtual sex.

In the next 10 years users may seeks all types of environments such as three dimensional social, audio based environment that allows people to talk, form relationships, discuss business, play games, train and do many more social things that they do in physical environment.

Now a days students are accessing the education there direct knowledge from schools, teachers and most of the information is gained through the internet. So most part of their day is spent in front of the screen though it may be of a computer, laptop or a mobile. On an average, students are spending 4-5 hours of a day on mobile. Though it may be for studying or for entertainment. For interacting with other they are widely using social networking sites. These social networking sites are playing important role in shaping the behaviour patterns of the youths for interacting on social sites they create account and put forth their information. Many times the youths use multiple accounts on the same sites. These are the fake accounts. But why these youth need to make such account ? The answer is that they wanted to live or be they wished to. They are not able to do the thinks openly give to social, personal and family approval is needed. Thus they live as they want on the social networking sites. This virtual personality gives him pleasure and satisfaction of liberal living.

These virtual identities depict the changing personality traits in youths. On the darker part these virtual identities are used for mal practices.

The history of internet suggests that what attracts, most people to it is not information; it is other people. Internet services allows the like minded people to gather and interconnect with each other. The most social corners of the internet are populated mostly with young users.

Early studies of the young users find the peer influence is related to safety behaviors in social networking site.

- Young ones imitate as their peers have private profile so they also used privacy setting. Such results offer a hypothesis that peer effect influence the safety behaviours of youth only.
- Internet has some dark sides too as youths may be victim of online harassment or cyber bullying.
- The social, psychological and emotional characteristics of the youth is influenced by negative relationships that can be formed online.
- Some scholars posit that SNS, widen youths social network and provides positive benefits in form of social capital.
- SNS affects psychological well being of youths.
- The often cited home net study by Karut et.al. 1998 recorded that longer use of internet was related to increased depression, loneliness and smaller social circles.
- Thus internet use isolates individuals from their friends and family and has a negative impact one's psychological well being.
- Having positive reaction on one's SNS profile is correlated with higher self esteem and higher self esteem is significantly correlated with self satisfaction of life.
- Positive or negative reactions that youth experience within the sites are the key factors influencing the youths development.
- Self disclosure plays important role on SNS on youths well being. When youths express and disclose their information about themselves the quality of their relationship improves.

Conclusion:

This paper reviews on the effect of social networking sites on youths behaviour. SNS are emerging as a new trend providing new environment to study because the technology has been integral part of youths life. Seeing its popularity parents, educators have concern about the effect of SNS on their children. These concern ranges from youth privacy, safety,

psychological well being gaining social development and academic progress. It is not only technology which nurtures the youths future but one should know the optimum usage of it. And everyone should take the technological revolution in positive way then only we will be able to shape the youths future considering social networking sites as boon for youths.

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माध्यमिक स्तरातील विद्यार्थ्यांच्या इंग्रजी विषयातील भाषिक सृजनशीलता विकासासाठी संगणकाच्या साधनांचा प्रभावी वापर

डॉ. चंद्रकांत बोरसे (Pg. 232-236)

प्राचार्य, म प्र वि चे शिक्षणशास्त्र महाविद्यालय, नाशिक.

लोखंडे गोकुळदास दत्तात्रय

संशोधक, म प्र वि चे शिक्षणशास्त्र महाविद्यालय,नाशिक.

प्रास्ताविक

शिक्षण हे समाज विकासाचे महत्वपूर्ण साधन आहे. अनौपचारिक शिक्षण जन्मभर जरी चालत असले तरी औपचारिक शिक्षणातून पद्धतशीरपणे मुलांचा विकास घडवता येऊ शकतो.भारताच्या आर्थिक उन्नतीसाठी आर्थिक व शिक्षणविषयक धोरणात महत्वपूर्ण बदल केले पाहिजेत याचा सल्ला देण्यासाठी नेमलेल्या राष्ट्रीय ज्ञान आयोगाने तर इयत्ता दहावीपर्यंत सर्वांना सार्वत्रिक व दर्जेदार शिक्षणाचा पुरस्कार केलेला आहे. शिक्षणक्षेत्रातील धोरण ठरवणारे, धोरणे राबवणारे प्रशासक आणि शिक्षण व्यवस्थेचा कणा असणारे शिक्षक या सर्वांनाच नवे पर्याय शोधायला हवेत. नव्या कल्पना लढवायला हव्यात. नव्या पद्धती कार्यवाहीत आणायला हव्यात. थोडक्यात म्हणजे स्वत:ची भाषिक सृजनशीलता विकसीत करायला हवी.

भाषिक सृजनशीलतेचा अर्थ

भाषा ही निर्मितीशील आहे. मोजक्या चाळीस-पन्नास ध्वनींच्या सहाय्याने आपण किती तरी शब्द, वाक्ये निर्माण करु शकतो. मोजक्या ध्वनीच्या सहाय्याने, सहजपणाने शब्द जूळणी करुन त्यातून वाक्ये जुळवतो आणि अमर्याद संदेश निर्माण करतो. मानवेतर प्राणी केवळ जैविक पातळीवरील देवघेवीपुरते ध्वनी निर्माण करुन संप्रेषणाची प्राथमिक गरज भागवतात. मनुष्य या जैविक गरजांच्या पलिकडे जाऊन विचारांची भावनांची देवघेव करण्याची क्षमता असणारी भाषा निर्माण करतो. मानवी भाषेच्या या निर्मितीच्या मुळातच एक प्रकारची सृजनशीलता दडलेली आहे.

भाषिक सृजनशीलतेची संकल्पना

भाषेची एक नियम व्यवस्था असते. अशा नियम व्यवस्थेला व्याकरण म्हणतात. एकदाही नियम व्यवस्था आत्मसात झाली की माणूस असंख्य: भाषिक रचना करु शकतो. तो सर्व भाषा केवळ अनुकरणातून शिकत नाही. पूवी न ऐकलेल्या भाषिक रचना त्याला समजतात व तो स्वत: विविध रचना करु शकतो. या दृष्टीने भाषा ही निर्मितीशील किंवा सृजनशील असते असे म्हटले जाते. मातृभाषेत आपले हे बोलणे सवयीचे होते. मुलांची भाषा, साहेबांची भाषा, शिकलेल्यांची भाषा, अडाण्याची भाषा अशी उपयोजनकर्त्यानुसार ती बदलत असते. तबल्यावर बोटे आपटून ध्वनी निघतो पण तबलजी बोटांची अशी काही फिरकत जमवतो की,त्यातून प्रसन्न ध्वनिलहरी निघतात. भाषेचाही असा चोखंदळ आणि सृजनशील वापर होतो तेव्हा काव्य, नाटय असे वाङमय निर्माण होते.

भाषिक सृजनशीलतेचेघटक

१. ओघ (Fluency)

ओघ या घटकालाच प्रवाहित्व असे म्हटले जाते. येथे कल्पनांचा अथवा विचारांचा ओघ अथवा प्रवाह अभिप्रेत आहे.सृजनशीलतेच्या दृष्टीनेही क्षमता अत्यंत वैशिष्टयपूर्ण समजली जाते. एखाद्या विषयाबाबत अथवा समस्या निराकरणाबाबत उपयुक्त अशा भरपूर कल्पना सूचत जाणे म्हणजे ओघ ही क्षमता होय.

२.लवचिकता (Flexibility)

ओघ या क्षमतेपेक्षाही लवचिकता ही अधिक वरच्या दर्जाची मानली जाते. ओघ या घटकामध्ये संख्येला महत्व होते तर लवचिकता या घटकामध्ये विविधतेला अथवा वैचित्र्याला अधिक महत्त्व आहे. म्हणून तर या घटकाला विविधता, वैचित्र्य असेही संबोधले जाते. नवीन कल्पना नुसत्या संख्येने अधिक असून चालत नाही तर त्यामध्ये भरपूर विविधताही असायला हवी.

३. मौलिकता (Originality)

सृजनशीलतेमध्ये मौलिकता हा घटक सर्वश्रेष्ठ मानला जातो. तो इतका महत्वाचा ठरतो की अनेकजण मौलिकता म्हणजेच सृजनशीलता असेही मानतात. मौलिकता ही क्षमता ओघ व लवचिकता यापेक्षाही उच्चतर मानली जाते. मौलिकता म्हणजे सर्वांपेक्षा वेगळेपणा, असामान्यपणा अथवा नाविण्यपूर्णता होय. जे आजपर्यंत अपरिचित होते, कोणालाही माहित नव्हते, असाधारण होते ते पहिल्यांदा

सूचना होय. जे कोणालाच सुचले नाही असे जेव्हा एखादया व्यक्तीला सुचते तेव्हा ते सुचणे मौलिकता म्हणता येईल.

४. स्पष्टीकरण (Elaboration)

स्पष्टीकरण क्षमतेलाच विस्तार करण्याची किंवा पूर्ती करण्याची क्षमता म्हटले जाते.ही क्षमता देखील सृजनशीलतेचे महत्वाचे अंग आहे. सृजनशीलतेत केवळ मौलिक कल्पना सुचून चालत नाही तर त्या कल्पनेचा तितकाच प्रभावी विस्तार करता यायला हवा. एखादी कल्पना बीज विस्तारुन अविष्कार करुन विशाल वटवृक्षात परिवर्तीत करता यायला हवी. या क्षमतेलाच पूती क्षमताही म्हटले जाते कारण एखादी अर्धवट कलाकृती त्याच अनुषंगाने पूर्णत्वाला नेता येणे देखील सृजनशीलतेचा अविष्कार असतो.

तंत्रज्ञानांच्या साधनांचा प्रभावी वापर

१. संगणक

आजच्या काळात संगणकाचे अनन्यसाधारण महत्व आपणांस जाणवले आहे. इंग्रजी विषयातील भाषिक सृजनशीलता वाढविण्यासाठी आपल्या कार्यक्रमात संगणकाचा प्रभावी वापर करता येऊ शकतो. विद्यार्थ्यांच्या लेखन कौशल्यातील कथा लेखन, कविता तयार करणे, संवाद लेखन आणि शाब्दिक खेळ याबाबतीत प्रत्येक वेळी संगणकाच्या आधारे विद्यार्थ्यांना कथा ऐकविणे तसेच संवाद ऐकविणे आणि इंग्रजी भाषा विकसनासाठी संगणकाच्या आधारे चित्रपट दाखविणे अशा विविध उपक्रमात संगणकाचा प्रभावी वापर आपणास करता येऊ शकतो.

२. LCD

शिक्षक वर्गामध्ये अप्रत्यक्ष अनुभव देत असताना प्रत्यक्ष अनुभवाकडे वाटचाल करणे गरजेचे असते. या शैक्षणिक सिध्दांतावर आधारित संशोधकाने एलसीडीच्या आधारे इंग्रजी भाषेतील सृजनशीलता विकसित करण्यासाठी वापर करता येऊ शकतो. एलसीडी च्या मदतीने विद्यार्थ्यांना विविध इंग्रजी विषयातील कविता ऐकविता येऊ शकतात व इंग्रजीमधून चालणारे संभाषण संवाद लेखनाच्या विकासासाठी दाखवता येऊ शकते. एलसीडी च्या आधारे प्रत्यक्ष अनुभव देण्याचा प्रयत्न करता येऊ शकतो. तसेच इंग्रजी विषयातील भाषिक सृजनशीलता विकसित करण्यासाठी आयोजित केलेल्या व्याख्यानांचे सादरीकरण संबंधीत तज्ज्ञांना एलसीडी च्या माध्यमातून करता येऊ शकते.

३. यु टयुब

इंग्रजी विषयातील लेखन कौशल्या संदर्भातील भाषिक सृजनशीलता विकसित करण्यासाठी यु टयुब हे एक प्रभावी साधन आहे. माध्यमिक स्तरातील विद्यार्थ्यांची इंग्रजी भाषा कमी प्रमाणात विकसित झालेली असते. त्यामुळे त्यांना इंग्रजीतील उपलब्ध लघुकथा यु टयुब च्या माध्यमातून दाखविता येऊ शकतात तसेच रेल्वे स्टेशनवरील, संवाद, बँक मधील संवाद दाखविले असता त्यांची संवाद लेखन कौशल्य विकसित होऊ शकते. सृजनशीलतेमध्ये सृजनात्मक काव्य करणे हे एक अवघड काम असते. अशा इंग्रजीतील कविता लेखनाचे कौशल्य विद्यार्थ्यांच्या मध्ये विकसित करायचे असेल तर आपणांस एक संशोधक म्हणून यु टयुब चा प्रभावीपणे वापर करता येईल.

४. गुगल

इंग्रजी भाषा विकसित करण्यासाठी विद्यार्थ्यांचे शब्द समुह अधिक प्रमाणात विकसित होणे गरजेचे असते. तसेच विद्यार्थी विचार करताना नाविण्यात्मक विचार इंग्रजीमधून करणे आवश्यक असते. हे जर आपणांस विकसित करायचे असेल तर गुगलच्या माध्यमातून अधिक प्रमाणात शब्द समुह आपणांस शोधता येतात. तसेच एक संशोधक म्हणून भाषिक सृजनशीलता विकसनाच्या विविध क्लृप्त्या आपणांस गुगलवर सविस्तर उपलब्ध आहेत. लेखन कौशल्यातील भाषिक सृजनशीलता विकसित करण्याकरीता गुगल हे एक तंत्रज्ञानाचे प्रभावी साधन आहे.

५. मोबाईल अध्ययन

तंत्रज्ञानाची मोबाईल अध्ययन ही एक नवीन संकल्पना आहे.भाषिक सृजनशीलतेचा विकास करण्यासाठी मोबाईल अध्ययन या संकल्पनेचा प्रभावी वापर करु शकतो. आजच्या काळात मोबाईलमुळे जग केवळ जवळ आले नाही तर आपल्या प्रत्येकाच्या हातामध्ये हे तंत्रज्ञान उपलब्ध आहे. या तंत्रज्ञानाचा प्रभावी वापर करुन आपण विद्यार्थ्यांना इंग्रजी विषयातील कविता ऐकवू शकतो. तसेच संवाद लेखन निर्मिती, कविता लेखन निर्मिती यामध्ये मोबाईल अध्ययन या संकल्पनेचा प्रभावी वापर करुन विद्यार्थ्यांच्या भाषिक सृजनशीलतेचा विकास करु शकतो. मोबाईलच्या आधारे इंग्रजीचे शब्दकोश आपणांस हाताळता येऊ शकतात. तसेच समानार्थी शब्द, विरुध्दार्थी शब्द, एका शब्दाचे अनेक पर्यायी शब्द मोबाईलच्या माध्यमातून विद्यार्थ्यांना पाहता येऊ शकतात.

६. टेपरेकॉर्डर

टेपरेकॉर्डर हे तंत्रज्ञानाचे आधुनिक साधन नसले तरी याचा प्रभावीपणे वापर आजही करता येऊ शकतो. संवाद लेखन निर्मिती कविता लेखन निर्मिती कथालेखन निर्मिती या भाषेच्या विकासातील उपघटकांचा विकास करताना संवाद, कविता आणि कथा रेकॉर्ड करुन आपण त्या विद्यार्थ्यांना ऐकवू शकतो. याचा एक महत्वाचा फायदा म्हणजे यामध्ये आपण स्वत:चा आवाज रेकॉर्ड करु शकतो आणि तो विद्यार्थ्यांना ऐकवू शकतो.

७. SWAYAM

विद्यार्थ्यांची सृजनशीलता विकसित करण्यासाठी स्वत: सृजनशील असायला हवे. तसेच सृजनशीलतेच्या विकासामध्ये तंत्रज्ञानाचा वापर करायचा असेल तर स्वत: तंत्रज्ञान अंगीकृत करायला हवे. याचा विचार करता स्वयंम च्या माध्यमातून सृजनशीलतेबाबत आणि तंत्रज्ञानाबाबत विविध कोर्सेस आपणांस करता येऊ शकतात. त्याबाबत आपणांस योग्य माहिती आणि प्रशिक्षण घेता येऊ शकते. सदर कोर्सेस ऑनलाईन स्वरुपाचे असून घर बसल्याही आपणांस पूर्ण करता येऊ शकते.

८. PPT

भाषिक सृजनशीलतेचा विकास करण्यासाठी विद्यार्थ्यांना मार्गदर्शन करणे अत्यंत गरजेचे असते. सदर मार्गदर्शन करताना तंत्रज्ञानाच्या आधारे विद्यार्थ्यांना प्रभावीपणे माहितीचे सादरीकरण पीपीटी च्या आधारे करता येऊ शकते. पीपीटीच्या माध्यमातून मिळणारा अनुभव हा प्रत्यक्ष नसला तरी आभासी प्रतिमा उभी करुन प्रत्यक्ष अनुभवाजवळ शिक्षक विद्यार्थ्यांना घेऊन जाऊ शकतो आणि हा अनुभव विद्यार्थी सहजासहजी विसरत नाही व यातून आपणांस भाषिक सृजनशीलतेचा विकास करता येऊ शकतो.

समारोप

वरीलविवेचन केलेल्या तंत्रज्ञानांच्या साधनांचा वापर विद्यार्थ्यांची भाषिक सृजनशीलता विकसनासाठी शिक्षकांनी प्रभावीपणे केला तर निश्चितपणे विद्यार्थ्यांच्या वर्तनात बदल होऊ शकतो आणि यामुळे विद्यार्थ्यांच्या सृजनशीलतेला पोषक वातावरण निर्मिती तयार होऊ शकते.

संदर्भ

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शिक्षण क्षेत्रातील बदलाचा प्रतिनिधी : माहिती संप्रेषण तंत्रज्ञान (I.C.T.)

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ऐतिहासिक व सांस्कृतिक वारसा असलेला देश म्हणून जगात भारताची ओळख आहे .इतिहास पाहिला असता गुरुकुल आश्रम पद्धतीपासून आधुनिक शिक्षण पद्धतीपर्यंत शिकवणारा (गुरु)शिकणारा (विद्यार्थी)व अभ्यासक्रम या तिघांचे स्वरूप,स्थान व महत्व कालानुक्रमे आपणास बदलतांनादिसते.यात पूर्वीचा गुरु म्हणजे आजचा शिक्षक अनेक संदर्भ ग्रंथ,पाठ्यपुस्तके व साहित्याची मदत घेऊन अध्यापनाचे कार्य पूर्ण करीत असतो एवढे करूनही अश्या हाडामासाच्या शिक्षकाला काही मर्यादा असतातकिवां तो नेहमीच सर्व विषयांबाबतीत परिपूर्ण असेलच असे नाही.अश्या परिस्थितीत 'बाबा वाक्यंमप्रमाणकमं' ! याशिवाय पर्याय नसतो.

पण सध्याचे स्पर्धात्मक युग बघता शिक्षकाला अद्ययावत राहणे गरजेचे आहे.संदर्भ ग्रंथ,पाठ्यपुस्तके,साहित्य,मौखिक माहिती अश्या महितीना साठवण्याच्या पद्धती शिक्षकाने शोधून काढले पाहिजे.तसेच त्या सर्वांना खुल्या होतील व अशा महितीला स्थळ,काळ व भौगोलिक सीमा यांच्या मर्यादा नकोत वरील सर्वांचा विचार केला असता यावर एकच आधुनिक पर्याय आढळतो तो म्हणजे माहिती संप्रेषण तंत्रज्ञान !

म्हणूनच डॅनियल (२००२) च्या मते माहिती संप्रेषण तंत्रज्ञानकमी कालावधीत आधुनिक समाजाचे जणू काही आधारस्तंभच बनले आहे.माहिती संप्रेषण तंत्रज्ञान अथवा ICT म्हणजे संगणकाशी निगडीत कृती अथवा संगणकवर आधारित कृती परंतु सुदैवाने असे शिक्षण प्रक्रियेत नाही या उलट शिक्षण प्रक्रियेत माहिती संप्रेषण तंत्रज्ञान हे महत्वाची भूमिका बजावताना दिसतात.(SyedNoor-UlAmin, Universityof Kashmir.)१९ मार्च २०१३.

सन १९८० अखेर 'संगणक' या शब्दाला IT(InformationTechnology) असा पर्यायी शब्द दिला असे आपल्याला दिसते .त्यामुळे संगणक तंत्रज्ञानावरील संपूर्ण लक्ष संगणकाची माहिती साठवण्याची क्षमता व माहिती प्राप्त करण्यासाठी जमा करणे याकडे लागले.१९९२ पर्यंत ई-मेल सामान्य लोकांसाठी खुले करण्यात आले (Pelgrum&W.J,LawN.२००३)

यावर UnitedNationReport 1999 यांच्या मते Internet Service, संप्रेषणाचे साधने व सेवा,इंटरनेटवर आधारित माहिती सेवा या सर्वांचा समावेश झाला आहे. UNISCO ने २००२मध्ये ICT म्हणजे Informatics Technology असे विधान केले .

माहिती संप्रेषण तंत्रज्ञानात अनेक साधनांचा अंतर्भाव होतो उदा. टेलीकॉन्फेरांसिंग, ई-मेल, ऑडिओ कॉन्फेरांसिंग, टेलीविझन लेसन, रेडीओ मार्गदर्शन/ समुपदेशन, Interactive Voice Responder System, audio cassettes & C.D.ROM अश्या अनेक साधने शिक्षण क्षेत्रात वापरले जातात.(Sharma,2003,sanyal 2001,battacharya &Sharma 2007)माहिती संप्रेषण तंत्रज्ञानातील अनेक गोष्टी शिक्षण क्षेत्रावर प्रभाव टाकतानां दिसतात(Yusuf 2005) माहिती संप्रेषण तंत्रज्ञानामुळे शिक्षणाच्या गुणवत्तेतही सकारात्मक बदल होतांनादिसतो,त्याचेफलस्वरूप पूर्ण शिक्षण प्रक्रियाच गुणवत्तापूर्ण वअर्थपूर्ण होते .

(Al-Anjar 2006).

Hepp, Hinostroza, Laval & Rehbein (2004) यांनी एक प्रबंध प्रकाशित केला.त्याचे नाव Technology in School: Education ICT & the knowledge Society.याच्या मते ICT चा वापर शिक्षण क्षेत्रात अगोदरपासून होत होता पण त्याला भक्कम पणे मांडले जात नव्हते.

त्यानंतर ICT for Education व ICT in Education या दोन संकल्पना अस्तित्वात आल्या

ICT for Education यात माहिती संप्रेषण तंत्रज्ञानाचा विकास (अनुदेशन प्रणालीवर भर व सुधारणा) करावा ही अपेक्षा असते तर,

ICT in Education यातफक्त ICT साधनांच्या साहय्याने फक्त वापर नाही ,तर उद्याच्या येणा-या पिढीला ICT सक्षम बनवणे यावर जास्त बल दिले जाते (Wheeler,2001)

Plomp,Pelgrumand Law 2007 असे म्हणतात की लोक माहिती संप्रेषण तंत्रज्ञानाचावापर शांत व आधुनिक विकासासाठी करतात.माहिती संप्रेषण तंत्रज्ञानाचा वापर केल्यामुळे संप्रेषणातील अडथळे दूर करण्यास मदत होते.(Lim & Chai 2004)आपण माहिती संप्रेषण तंत्रज्ञानामुळे भौगोलिक मर्यादा,वेळ व काळ याच्या बंधनामुळे येणारे अडथळ्यावरही मात करू शकतो.(Sanyal 2001,Morji 2007,Cross & Adam 2007 UNISCO 2002,Bhattacharya &Shrma 2007)माहिती संप्रेषण तंत्रज्ञानाच्याशिक्षणासाठी नविन दृष्टीकोन निर्माण करण्यास मदत होते . (Sanyal2001) शिक्षक नेहमी अर्थपूर्ण व शक्ती देणारे अध्यापन अनुभव ICT च्या सहाय्याने निर्मिती करीत असतात.

ICT एक अध्यापनात सहजता व सुगमता आणण्यासाठी उपयुक्त साधन–

१.माहिती संप्रेषण तंत्रज्ञानामुळे अध्यापनात लवचिकता निर्माण होते,यामुळेअध्ययनकर्ता केव्हाही व कोठेही अध्ययन करू शकते.

२.माहिती संप्रेषण तंत्रज्ञानामुळे ई-बुक, R.P. मार्गदर्शन,मागील वर्षाच्या प्रश्नपत्रिका ह्या सर्व गोष्टी २४X ७ X ३६५उपलब्ध असतात.

३. ICT मुळे शिक्षणाचे सार्वत्रीकरण व लोकशाहीयुक्त शिक्षण होते.

ICT शैक्षणिक गुणवत्ता वाढीसाठी उपयुक्त साधन-

Power Point Presentation,YouTube,Audio&vidioSlide based on content या सारख्या साधनांमुळे शैक्षणिक गुणवत्ता सुधारते. UNESCO ने सन २००२ मध्ये नमूद केल्यावरून सामान्य शिक्षणातील स्थगन व गळती ICT मुळे कमी होतांना दिसते.

त्यामुळेच घरातील व कार्यालयातील ईटरनेट वापरत वाढ झालेली दिसते. (MyGory २००२).देशातील शिक्षणाची खालावलेली पातळीचे उच्चीकरणकरावयाचे झाल्यास ICT जणू शस्त्रच झाले आहे.शिक्षण क्षेत्रातील संशोधनात चोरी करणे, कॉपीकरणे,दुसऱ्याची माहितीचोरून प्रकाशित करणे या सारख्या गोष्टींना लगाम लावण्याचे काम करत ICT करतआहे.(Cholin २००५) ICT मुळे वेळ वाचवणे व भौगोलिक बंधने यासारखे अडथळे दूर होतात,त्याचा परिणाम म्हणून अध्ययनकर्ता अगदी कोठेही कधीही

माहितीचा वापर करू शकतो.(Sanyal2001, Mooij2007,Cross& Adam 2007 UNESCO,2002,Bhattacharyaa& Sharma 2007)

ICT मुळे फक्त अध्ययन कर्त्याचीच नव्हे तर मुल्यमापनाच्यापद्धतीचीही व्याख्या बदलण्यास कारणीभूत आहे. ते म्हणजे विविध software च्या वापरामुळे उदा. QuizStar च्या मदतीने Onlineबहुपर्यायी परीक्षा घेण्यात येतात. व मुल्यांकनही करण्यात येते.यूटयूबच्या सहाय्याने शिक्षण क्षेत्रातील अनेक अमूर्त संकल्पना समजून घेण्यात मदत होते.

उदा.विज्ञानात हृदयाची अंतररचना,मानवीडोळा,रक्ताभिसरण,मानवीमेंदू,श्वसनसंस्था,वनस्पतीचे अवयव वसुक्ष्मभाग,प्रकाश संश्लेषण. भूगोलात पृथ्वी, सूर्य, चंद्र, आपली सूर्यमाला , आकाशगंगा, कृष्ण विवर , ग्रहण, परिभ्रमण, परिवलनभूकंप, ज्वालामुखी, पृथ्वीचे अंतरंग ई.कार्य ICT मुळे शक्य झाले आहे. ICT ने जणू आंतरराष्ट्रीय पातळीवर शिक्षणाच्याआकृतीबंधच बदलून टाकला आहे,व त्याचा वापर शिक्षण क्षेत्रातही प्रकर्षाने दिसतो(UNISCO २००२)

ICT वापरामुळे वापरकर्त्यांना उच्च प्रतीचे कौशल्य संपादन करण्यावर भर दिला जातोयामुळे वेळ व स्थळाच्या किचकट बंधनावर विजय मिळवणे शक्य होते.(Bottina 2003,Bhattacharya & Sharma 2007,Masoon 2000,Lim & Hang 2003).जॉन डयूईने सांगितल्याप्रमाणे ICT शिक्षणामुळे Learning By Doing कृतियुक्त /कृतीतून शिक्षण होण्यास मदत होते. अध्ययन कर्त्याला मदत म्हणून अनेक साधने बाजारात दिसतात .उदा. Gradeup, unacademy, BYJU'S पुढील साधने हे स्पर्धा परीक्षेसाठी उपयुक्त आहेत.

ICT शैक्षणिक वातावरण निर्माण करण्यास सहाय्य घटक-

ICT मुळे माहितीचा आकार वाढतो,जणू माहितीचा प्रस्फोटच होतो व या अथांग माहितीवरून ज्ञानाची निर्मिती होते. ICT मुळे शिक्षण हे ज्ञानरचनावादीहोते.व त्यामुळे शिक्षक विद्यार्थ्यांना प्रात्यक्षिक/ कृतिकार्यक्रमात गुंतवू शकतो.

ICT शैक्षणिक कार्यात प्रेरणा देणारा घटक-

ICT विद्यार्थी गुणवत्ता सुधारण्यास कारणीभूत असते त्यामुळेशिक्षककेंद्री पद्धतीचे परिवर्तन विद्यार्थी केंद्रितपद्धत्तीतहोते. ICT हे विद्यार्थी काय अध्ययन करतो या पेक्षा विद्यार्थी कसे अध्ययन करतो यावर जास्त भर देण्याचे कार्य करीत असते.

पूर्व प्राथमिक व प्राथमिक गटाचा विचार केला असता रंगीत चित्रे,चलचित्रे , Animation च्या सहाय्याने विद्यार्थ्यांचे अध्ययनात सकारात्मक बदल होतो व संकल्पना प्राप्तीसाठीही उपयोग होतो.

काही संशोधनाच्या निष्कर्षावर आधारित काही विधाने-

१.Research has shown that the appropriate use of ICT can catalyse the paradigmatic shift in both content

&pedagogy that is at the heart of education reform in 21 century -Kulik's (1994)

२. विद्यार्थी ICT च्या सहाय्याने कमी वेळात जास्त अध्ययन करतात . Fuchs&Woessman (२००४)used International data from programme for International Student Assessment (PISA)

3.Bivariate correlation मध्ये ICTचा वापर केलेल्या विद्यार्थांचा प्रतिसादICT न वापरणाऱ्याविद्यार्थापेक्षा अधिक सकारात्मक दिसून येतो -Attwell&Battle (1999)

तसेच ChildStudyJournal/volume ३१/नो.२/२००१ मध्ये FengS.Din व JosephineCalaoया दोन संशोधकांनी शैक्षणिक व्हिडीओगेमखेळणा-यांचा KinderGarten (K.G.)मधील विद्यार्थ्यावर परिणाम यावर संशोधन केलेले आढळते. या संशोधनात व्हिडीओगेमखेळणारे मुलांचा मानसिक,बौद्धिक व सामाजिक विकास व्हिडीओगेम न खेळणाऱ्या मुलापेक्षा जास्त होतो .

Fitch & Sims (१९९२) यांच्या शोधातून जे विद्यार्थी संगणकावर काम करतात ते अधिक प्रभावीपणे सकारात्मक दृष्टीकोन व आत्मविश्वासाने कार्य करतात.

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शिक्षण - प्रशिक्षणातील नवे विचार सहाध्यायी पर्यवेक्षित सराव योजनेच्या (Coaching/स.प.स.) परीणामकारतेचा अभ्यास

डॉ. कविता सुरेश साळुंके (Pg. 241-250)

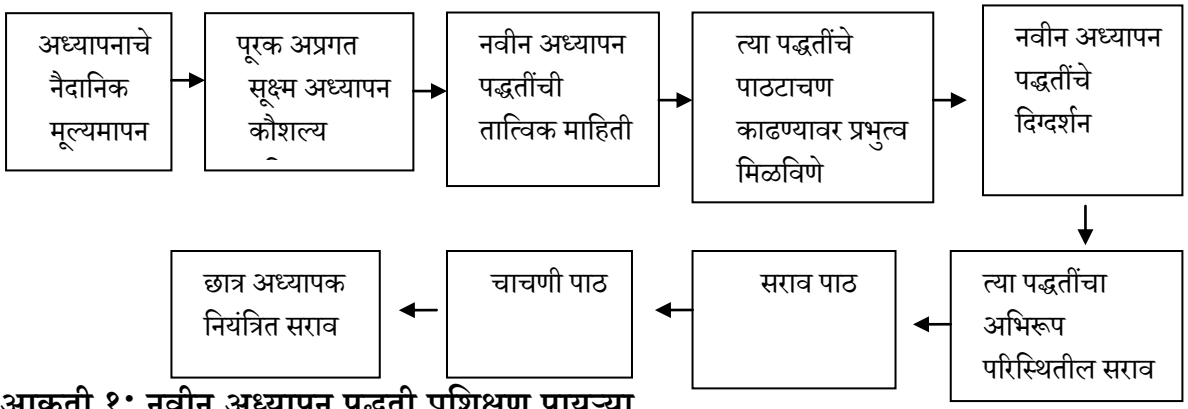
संचालक शिक्षणशास्त्र विद्याशाखा, यशवंतराव चव्हाण महाराष्ट्र मुक्त विद्यापीठ, नाशिक.

भाग - १

प्रास्ताविक

शिक्षण प्रशिक्षण कार्यक्रमात नवीन अध्यापन पद्धतींचा अभ्यास, त्यांचे प्रशिक्षण व सराव हा गाभाभूत कार्यक्रम मानला जातो. दूर शिक्षणाव्दारे आयोजीत शिक्षण प्रशिक्षणाचा कार्यक्रमही त्याला अपवाद नाही. एखादी नवीन अध्यापन पद्धती आत्मसात करतांना अनेक पायऱ्यांमधून प्रशिक्षणार्थीला जावे लागते. मुक्त विद्यापीठाच्या संदर्भात त्या पायऱ्या पुढीलप्रमाणे दर्शविता येतील.

नवीन अध्यापन पद्धती प्रशिक्षण पायऱ्या



आकृती १: नवीन अध्यापन पद्धती प्रशिक्षण पायऱ्या

सेवांतर्गत शिक्षक प्रशिक्षणातील छात्र अध्यापक हे प्रत्यक्ष सेवेत असल्या कारणाने त्यांची अध्यापनाची काही कौशल्ये प्रगत असतात तर काही कौशल्य अप्रगत असतात. म्हणून हे छात्र अध्यापक संपर्कसत्रात आल्यानंतर प्रथम त्यांच्या अध्यापनाचे नैदानिक मूल्यमापन करून त्यांची अप्रगत कौशल्य कोणती याचे निदान केले जाते. त्यानंतर त्या अप्रगत कौशल्याचे त्यांना प्रशिक्षण देण्यात येते. दुसऱ्या संपर्कसत्रात विद्यापीठाने तयार केलेल्या

अध्यापन पद्धतींच्या यादीतील (नाटयीकरण, चर्चा, Communicative Approach, आधार पद्धती, प्रवास पद्धती, व्याख्यान, समस्या निराकरण, क्षमताधिष्ठीत अध्यापन, उद्गामी-अवगामी पद्धतींची) सैद्धांतिक माहिती विद्यार्थ्यांना देऊन त्यांना त्यापैकी चार अध्यापन पद्धतींचे पाठ टाचण कसे तयार करावे यावर प्रभुत्व येईपर्यंत (किमान ३ कमाल १२) पाठ टाचणे तयार करण्यास सांगण्यात येते. त्यानंतर प्रत्येक अध्यापन पद्धतींचे दिग्दर्शन करण्यात येते. त्या अध्यापन पद्धतींचा प्रत्यक्ष वर्गअध्यापनात सराव करण्यापूर्वी त्या अध्यापन पद्धतीचा अभिरूप परिस्थितीत सराव करण्याची संधी 'अभिरूप अध्यापनात' देण्यात येते. यासाठी ५ ते ६ विद्यार्थ्याचे गट तयार करून त्यातील विद्यार्थ्यापेकी एक शिक्षक, एक निरीक्षण व चार विद्यार्थी होतात, त्यानंतर हे छात्र अध्याप क त्यांच्या दैनंदिन अध्यापनात नव्याने आत्मसात केलेल्या अध्यापन पद्धतीने १२ पाठ घेतात. हे पाठ पूर्ण झाल्यावर आत्मसात केलेल्या अध्यापन पद्धती एका विशिष्ट अपेक्षित पातळीपर्यंत आत्मसात केल्या किंवा नाही हे तपासण्यासाठी दोन चाचणी पाठ घेण्यात येतात. अपेक्षित पातळी गाठली असल्यास त्यांना त्या अध्यापन पद्धतींच्या दैनंदिन अध्यापनात संक्रमणासाठी परवानगी देण्यात येते न गाठल्यास २ ते ६ पाठ पुन्हा घेण्यास सांगितले जाते. त्यानंतर (सहाध्यायी पर्यवेक्षित सराव) योजना राबविण्यात येते. प्रस्तुत निबंध. विविध पायऱ्यांपेकी अंतिम पायरीशी संबंधित आहे.

सहध्यायी पर्यावेक्षित सराव

स.प.स. योजना ही नव्याने आत्मासात केलेल्या पद्धतींचे दैनंदिन अध्यापनात संक्रमण होण्यासाठी योजलेली योजना आहे. नवीन अध्यापन पद्धती या केवळ शिक्षणशास्त्र पदवी प्राप्त करण्यापुरत्याच महत्वाच्या असतात हा विचार शिक्षकांनी टाकून दिला पाहिजे. 'बुद्धीवादी व्यक्ती' ह्या भूमिकेतून प्रत्येक शिक्षकाने या अध्यापन पद्धती प्रथमत: आपल्या दैनंदिन अध्यापनात वापराव्यात आणि त्यांची उपयुक्तता पडताळून पहावी. जर खरोखरच या अध्यापन पद्धती परिणामकारक वाटल्या तर त्यांच्याकडे पाहण्याची त्यांची दृष्टीच बदलू शकते. अर्थातच त्यासाठी त्या योग्य पद्धतीने वापरल्या जातात का ? वापरतांना कोणत्या अडचणी येतात ? त्या कशा सोडविता येतील ? यावर चर्चा करणारी, प्रत्याभरण देणारी, सहाय्य करणारी एक व्यक्ती मदतीसाठी आवश्यक असते. हे निरीक्षण मूल्यमापनासाठी न होता अध्यापनाच्या यशस्वीतेसाठी व संक्रमणासाठी व्हायला हवे. ही संक्रणाची अवस्था बऱ्याच वेळी वैफल्याचीही असू शकते. अशा वैफल्याच्या अनुभवात सहभागी होणारी, अध्यापन पद्धतीबाबातची मनातील भीती दूर करणारी, चुका झाल्यास टीका न करता आपलीच समस्या समजून

त्यावर विचार करणारी व मार्ग काढणारी आणि सर्वात महत्त्वाच म्हणजे वर्गव्यवस्थापन व शिस्त ह्यात मदत करणारी अशी ती व्यक्ती असते. या सर्व भूमिका प्रशिक्षक योग्य पद्धतीने निभावू शकेलच असे नही. म्हणून या स.प.स. योजने व्दारे ती उपलब्ध करून देण्यात येते.

सहध्यायी पर्यवेशिक्षित सराव योजनेची पार्श्वभूमी

सहाध्यायी पर्यवेशिक्षित सराव (स.प.स.) या तंत्राचा उदय १९८२ मध्ये अमेरिकेत झाला. ब्रुस जॉईस व बेव्हर्ली शॉअर्स यांना हे तंत्र विकसित करण्याचे श्रेय जाते. (Joice B, and Showers, 1988) या योजनेत पर्यवेक्षका ऐवजी सहाध्यायी हे महत्वाची भूमिका बजावतात. सहाध्यायी ऐकमेकांना भेटतात, एकमेकांच्या शाळांना भेटी देतात, स्वत:च्या अनुभवांबद्दल बोलतात, एकमेकाला सहाय्य करतात. त्यामुळे एकमेकांच्या काही चांगल्या गोष्टी त्यांना स्वीकारता येतात. आता ही योजना नेदरलँडमध्येही अंमलात आणली जात आहे. (Bert P.M. Wijnand T.J.G. and Gerry J. - 1997) ही योजना नवीन अध्यापन पद्धती शिकण्यासाठी नसून आत्मसात केलेल्या अध्यापन पद्धतींचे दैनंदिन अध्यापनात सुरळीत संक्रमण करण्यासाठी आहे.

सहध्यायी पर्यवेक्षित योजनेची वैशिष्टये

सहाध्यायी पर्यवेक्षित योजनेची काही खास वेशिष्टये आहेत. ती म्हणजे : सहाध्यायाची तरतूद , अध्यापन पद्धतींच्या उपयोजनेचे पृथ्वक्करण, प्रत्याभरणाची सुविधा, विदयार्थ्यांशी समायोजन.

सहाध्यायाची तरतूद

सहाध्यायी योजनेत सहाध्यायी अनेक प्रकारे अध्यापकाला मदत करतो उदा. अध्यापन पद्धतींचे कितपत आकलन झालेले आहे हे पाहतो, वैफल्यपूर्ण व यशस्वी अनुभवात सहभागी होतो, आपल्या सहकाऱ्याचे प्रश्न जाणून आपलेच प्रश्न आहेत या विचाराने अडचणींची चर्चा करतो. अध्यापनातील बारीकसारीक फरकाची व मर्यादांची नोंद करतो.

अध्यापन पद्धतींच्या उपाययोजनांचे पृथ्वक्करण

एखादया घटकासाठी नवीन अध्यापन पद्धती निवडून तिचा वापर करणे हे म्हणावे तितके सोपे नसते. प्रत्येकाला त्यासाठी मदत आवश्यक असते. यात अध्यापन पद्धतीचे अचूक संक्रमण झाले का? योग्य मुद्द त्यात मांडले का? त्यांचे नियोजन करून ते योग्य पद्धतीने पूर्णत्वास नेले का? अभ्यासक्रम व पाठ - नियोजन यांचा विचार केलेला

आहे का? सतत सरावाने त्याचा योग्य वापर करता येतो का? इ. गोष्टींचे निरीक्षण सहाध्यायींकडून अपेक्षित असते.

प्रत्याभरणाची सुविधा

या योजनेत पाठाचे निरीक्षण करणारा सहाध्यायी व सराव पाठ घेणारा शिक्षक हे एकाच पातळीचे असतात. त्यामुळे त्यांच्या निरीक्षणात होकारात्मक दृष्टीकोन येतो. त्यामुळे ते समस्येवर आपलीच समस्या समजून विचार करतात. घडलेल्या अध्यापनाबाबत योग्य, अचूक, वस्तूनिष्ठ माहिती म्हणजेच प्रत्याभरण देतात. प्रत्याभरण देताना ते स्वत:ही शिकतात. वापरलेली अध्यपन पद्धती आशय अधिक चांगल्या पद्धतीने समजण्यासाठी कितपत योग्य आहे, परत वापरावी ते ही पाहतात.

विदयार्थ्यांशी समायोजन

नवीन अध्यापन पद्धतीने दैनंदिन अध्यापन करणे कठीण असते. नवीन पद्धतीने शिकविताना आत्मविश्वसाच्या अभावाची शाळे य विदयार्थी नोंद घेतात व वर्गात गोंधळ निर्माण करतात. अशा परीस्थिती त 'सहाध्यायी' शिक्षकाला मदत करतात. गटात चर्चा करतात व ह्या समस्या दूर करण्यासाठी सहकार्य देतात.

यशवंतराव चव्हाण महाराष्ट्र मुक्त विद्यापीठ सहाध्यायी (स.प.स.) योजना

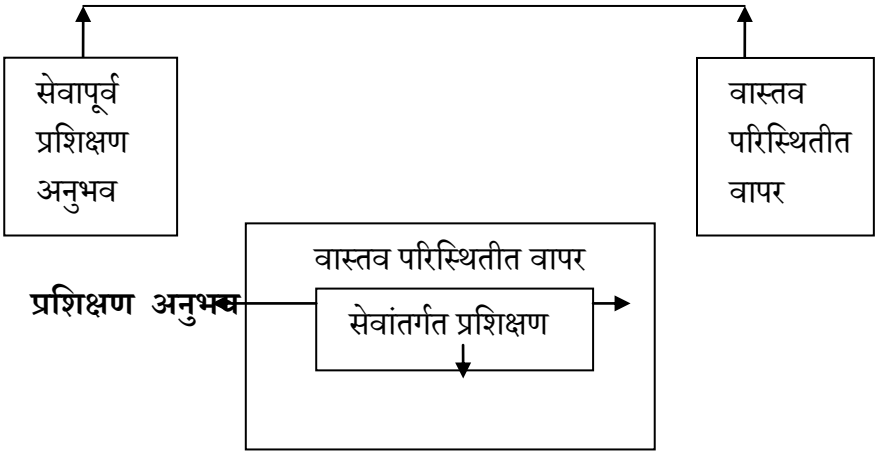
ब्रुस जॉईस व बेव्हर्ली शॉवर्स ह्यांनी दिलेल्या ह्या मूळ योजनेत यशवंतराव चव्हाण महारष्ट्र मुक्त विद्यापीठाने काही बदल केले. य.च.म.मुक्त विद्यापीठातील विद्यार्थी पूर्णत: सेवांतर्गत असतात. त्यामुळे अध्यापनाच्या त्यांच्या काही पद्धती, सवयी विकसित झालेल्या असतात. त्यामुळे त्यांना नवीन पद्धतीने अध्यापन करताना जुन्या अनेक सवयींचा त्याग करावा लागतो. त्यामुळे त्यांच्या आत्मविश्वसावर परिणाम होऊन व वर्गव्यवस्थापनात अडथळे निर्माण होऊ शकतात. पण तरीही त्यांनी काही नवीन अध्यापन पद्धती आत्मसात करून त्या परिणामकारकपने वापराव्यात ह्याचसाठी स.प.स. अपेक्षित असते. म्हणून ही योजना विद्यापीठाने स्वीकारली.

'प्रशिक्षणाचे संक्रमण'

प्रशिक्षणाचे संक्रमण ही संकल्पना सेवापूर्व प्रशिक्षण व सेवांतर्गत प्रशिक्षण (य.च.म.मु. विद्यापीठ) ह्या बाबतीत पूर्णत: वेगळी आहे. सेवापूर्व प्रशिक्षणात विदयार्थ्यानी प्रशिक्षण घेतल्यानंतर जेव्हा तो शाळेत शिक्षक म्हणून काम करतो, तेव्हा वास्तव परिस्थितीत ते प्रशिक्षण संक्रमित झाल्यास प्रशिक्षणाचे संक्रमण झाले असे म्हणता येईल.

मात्र य.च.म.मुक्त विध्यापिठातील विदयार्थी हे सेवेत असतांना त्यांना प्रशिक्षण मिळते. त्यामुळे आपला अनुभव ते आपल्या दैनंदिन अध्यापनात परिणामकारकपणे संक्रमित करू शकला तर ते संक्रमण पूर्णत: झाले म्हणता येईल. दोन्हीतील संक्रमण आकृती क्र. २ मध्ये दिलेले आहे.

सेवापूर्व प्रशिक्षण संक्रमण



1. **सेवांतर्गत प्रशिक्षण संक्रमण**

छात्राध्यापकांच्या जोड्या व कार्यपद्धती -

मुक्त विद्यापीठात छात्राध्यापकांच्या जोड्या ह्या भौगोलिक वितरण व अध्यापन विषयांचा विचार करून निश्चित केल्या जातात. त्यानंतर त्यांच्या चार बैठकी होतात. प्रथम बैठक - एकमेकाला जाणून घेण्यासाठी. दिव्तीय बेठक - एकमेकांच्या अध्यापन पद्धती अभ्यासणे, त्यांची निरीक्षण साधणे पाहणे, पाठ टाचणे तयार करणे. त्यांनंतर प्रव्यक्ष पाठाचेवेळी ते भेटतात.

भाग - २

संशोधन शिर्ष -

सहाध्यायी पर्यवेक्षीत योजनेच्या परिणामकारकतेचा अभ्यास.

संशोधन उद्दिष्टे -

- ❖ स.प.स. योजनेचा प्रत्यक्ष पाठांवरील परिणाम तपासणे.
- ❖ स.प.स. योजनेसाठी तयारी केलेल्या साहित्याची परिणामकारकता अभ्यासणे.
- ❖ सहाध्यायी पर्यवेक्षित योजना कार्यान्वीत करताता येणाऱ्या प्रशासकीय अडचणीचा अभ्यास करणे.

- ❖ सहाध्यायी पर्यवेक्षित सरावात येणाऱ्या अडचणींचा अभ्यास करणे.
- ❖ या योजनेच्या कार्यवाही संदर्भात केंद्राच्या अनुभवाचा अभ्यास करणे.

परिकल्पना - स.प.स. योजनेचा सराव पाठांवर काहीही परिणाम होत नाही.

कार्यपद्धती -

या संशोधनासाठी संशोधिकेने मिश्र पद्धतीचा वापर केला, त्यासाठी हेतू पुरस्कार पद्धतीने नाशिक व जळगाव बी.एड. अभ्यासकेंद्रावरील ७० विद्यार्थी स.प.स. संदर्भातीत परिणामकारकता पाह्रेसाठी नमुना म्हणून निवडले आणि या दोन्ही केंद्राचे १० तज्ज्ञ केंद्र प्रत्याभरणासाठी निवडले त्यात स.प.स. योजनेचा होणारा परिणाम, ही योजना कार्यान्वीत करतांना येणाऱ्या प्रशासककीय अडचणी व केंद्रांचा अनुभव यांची पडताळली केली. त्यासाठी प्रश्नावेळी व निरीक्षणसूचीचा वापर केला. स.प.स. योजनेच्या मुल्यामापनासाठी विध्यापीठाने काही साधने तयार केलेली आहेत. ह्यामध्ये दोन श्रण्यांचा समावेश होतो. त्यातील पहिल्या श्रेणीत एकूण १५ प्रश्न असून ते प्रश्न या योजनेच्या कार्यवाहीसंदर्भात आहेत त्यावर 'होय', 'नाही', 'अंशत:' असा प्रतिसाद घेण्यात आला. यात ४ प्रश्न आहेत. ते ४ प्रश्न स.प.स. योजनेसंदर्भात विध्यार्थ्यांच्या दृष्टीकोन व कार्यवाहीतील अडचणी संदर्भात आहे. ही मूल्यमापनाची साधने परिशिष्ट १ मध्ये जोडलेली आहे.प्राप्त झालेले निष्कर्ष पुढीलप्रमाणे.

निष्कर्ष

स.प.स. साहित्य परिणामकारकता

गट	विद्यार्थी	मध्यमान	प्रमाण विचलन	't'मूल्य
नियंत्रित	७०	११.५०	१.२२	९.१५
प्रायोगिक	७०	८.९२	२.००	

उपरोक्त कोष्टकात 't' मूल्य ९.१५ असून ते टेबल मूल्यापेक्षा जास्त आहे.

निष्कर्ष - स.प.स. साठी तयार केलेले साहित्य छात्र अध्यापकांना उपयुक्त आहे.

स.प.स. योजनेचा सरावपाठांवर होणारा परिणाम.

गट	विद्यार्थी	मध्यमान	प्रमाण विचलन	't'मूल्य
नियंत्रित	७०	१२.७	१.१९	१२.७०
प्रायोगिक	७०	८.९०	२.२०	

उपरोक्त कोष्टकामध्ये 't' मूल्य १२.७० असून ते टेबलमूल्यापेक्षा जास्त आहे.

निष्कर्ष - स.प.स. मुळे सराव पाठ घेणे छात्र अध्यापकांना सोयीचे होते.

स.प.स. ची उपयुक्तता.

गट	विद्यार्थी	मध्यमान	प्रमाण विचलन	't'मूल्य
नियंत्रित	७०	१४.५२	१.३०	१२.२०
प्रायोगिक	७०	८.१२	१.६२	

उपरोक्त कोष्टकामध्ये 't' मूल्य 12.20 असून ते टेबलमूल्यापेक्षा जास्त आहे.

निष्कर्ष - स.प.स. योजना छात्र अध्यापाकांना उपयुक्त आहे.

स.प.स. योजनेतील प्रशासकीय व व्यावहारिक अडचणी

- ❖ स.प.स. योजनेचे गट व विषय यांच्यात एकवाक्यात आणण्यास अडचणी येतात.
- ❖ स.प.स. योजनेचे पाठ स्वयं-प्रेरणेने स्वत:च्या उत्कर्षासाठी घ्यावयाचे असतात याची जाण प्रशिक्षनार्थीना देणे अडचणीचे होते.
- ❖ विद्यार्थी शिक्षकांना नेमके निरीक्षण कसे व नेमके प्रत्याभरण कसे करावे हे कळत नाही.
- ❖ छात्र अध्यापकांचे गट करणे कठीण जाते.
- ❖ त्यांच्या अभ्यासद्धती ह्या सारख्याच नसल्याने एकमेकांच्या पाठांचे निरीक्षण करणे कठीण जाते.
- ❖ विदयार्थांना स.प.स. योजनेचे महत्त्व पटवून देणे कठीण जाते.

12.5 **अहवालाचे पृथ:क्करण केल्यानंतर पुढील गोष्टी आढळून आल्या -**

- ❖ बहुतांशी विध्यार्थांना मतवलीमध्ये आपले नमके मत नोंदवित आलेले नाही.
- ❖ बऱ्याच विदयार्थ्यांनी प्रामाणिकपणे प्रश्नांची उत्तरे न लिहिता त्या अहवालाचा व गुणांचा संबंध असावा असे
- ❖ गृहीत धरून सर्वच निर्णय होकारात्मक दृष्टीकोनातून लिहिण्याची प्रवृत्ती आढळते.
- ❖ ज्यांनी कोणी मते मांडण्याचा प्रयत्न केला त्यांनी ती संदिग्ध मते मांडली.

मात्र काही अह्वालांमधे पुढीलप्रमाणे मते आढळली.

- ❖ नवीन अध्यापन पद्धतीने शिकविताना जुन्या सवयी संक्रमणात अडथळे आणतात. उदा. पुस्तक वापरण्याची सवय, स्पष्टीकरण करतानाच फळ्यावर नोंदी करणे इत्यादी.

- विदयार्थ्यांना प्रश्न विचारण्यास त्यांचा सहभाग योग्य तेथे घेतल्यास वर्गव्यवस्थापनाचा प्रश्न कमी होतो.
- कोणतीही अध्यापन पद्धती वापरली तरी त्यात शिक्षक व विदयार्थी यांत आंतरक्रिया आढळल्यास वर्ग-व्यवस्थापनाचा प्रश्न कमी होऊ शकेल.
- मुळातच समान बौद्धिक क्षमतेचे विद्यार्थी वर्गात नसल्यामुळे अध्यापनात अडथळे येतात.

विद्यापीठाच्या स.प.स. योजनेसंदर्भात केंद्रांचा अनुभव

- अनेक केंद्रांनी त्यात अभिरुची दाखविली.
- अपेक्षेप्रमाणे कार्यवाही करण्यात आली.
- प्रश्नावलीचा भाग दोन हा भाग एकपेक्षा कठीण वाटला.
- भाग दोनमध्ये नेमके काय लिहिले हे प्रशिक्षणार्थीना ज्ञात झाले नाही.

ह्या अभ्यासातून योजनेच्या संदर्भात दोन मुलभूत प्रश्न समोर येतात ते म्हणजे -

- स.प.स. कडे पाहण्याची छात्र अध्यापकांची अभिवृत्ती कशी होती?
- स.प.स. मुळे प्रशिक्षणाच्या संक्रमणाला मदत झाली काय?

या दोन प्रश्नांचा शोध घेताना असे आढळून आले कि, बहुतांशी विदयार्थ्यांचा या योजनेकडे पाहण्याचा

दृष्टीकोन होकारात्मक असून या योजनेचा प्रशिक्षण संक्रमणासाठी खूपच उपयोग होती.

समारोप

ही योजना भारतात प्रथमच अंमलात आणली गेली. त्यामुळे या योजनेच्या कार्यवाहीत येणाऱ्या प्रशासकीय व शेक्षणिक अडचणी जाणून घेणे या दृष्टीने या अभ्यासाकडे पाहण्यात आले. त्याप्रमाणे, साहित्य तयार करतांना त्या अडचणी दूर करण्यासाठी विचार करण्यात आले. नंतर या योजनेची परिणामकारकता वाढविण्याच्या दृष्टीने प्रयत्न करण्यात आले. ह्या योजनेमागील प्रशिक्षण संक्रमणाचा मूळ चैतन्यदायी विचार जर सर्व प्रशिक्षणार्थीपर्यंत पोहचला तरच ही योजना अधिक परीणामकारक होईल. त्यासाठी प्रयत्न सध्य करणे हे पुढील वाटचालीतील महत्त्वाचे लक्ष्य आहे.

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सहाध्यायी पर्यवेक्षणासाठी मूल्यमापन श्रेणी

भाग १

अ. क्र.	**तपशील**	**होय**	**अंशत:**	**नाही**
१	आशयानुसार योग्य अध्यापन पद्धतीची निवड केली काय ?			
२	अध्यापन पद्धतीनुसार आवश्यक अध्यापन साहित्य संघटीत केले काय ?			
३	मुद्दांना धरून अध्यापन केले काय ?			
४	अध्यापन पद्धतीची सर्व महत्त्वाची वेशिष्ट्ये अध्यापनात आढळली काय ?			
५	नव्या अध्यापन पद्धतीच्या वापरात प्रभुत्व होते काय ?			
६	नवीन अध्यापन पद्धतीच्या दैनंदिन संक्रमणात अडचणी येतात काय ?			
७	संक्रमणात सहजता होती काय ?			
८	अध्यापनात नेहमीच्या अध्यापन सवयींचा परिणाम होता का ?			
९	नवीन अध्यापन पद्धतीने अध्यापन करताना आत्मविश्वास होता काय ?			
१०	विद्यार्थ्यानुसार, आशयानुसार अध्यापन पद्धतीत बदल केले काय ?			
११	अध्यापनात काही त्रुटी / उणिवा जाणवल्या काय ?			
१२	नवी अध्यापन पद्धती विद्यार्थ्यांना स्वीकारहर्य वाटली काय ?			
१३	अध्यापनास विध्यार्थ्यांकडून अपेक्षित प्रतिसाद मिळाला काय ?			
१४	नवीन अध्यापन पद्धतीने ठरविलेली उद्दिष्टे साध्य केली काय ?			
१५	नवीन अध्यापन पद्धतींमुळे वर्गव्यवस्थापनात प्रश्न निर्माण झाले काय ?			

भाग - २

१) नवीन अध्यापन पद्धतींचा दैनंदिन अध्यापनात संक्रमण होताना येणाऱ्या अडचणी -

२) नवीन अध्यापन पद्धतीवर परिणाम करणाऱ्या जुन्या सवयी -

३) अध्यापनात जाणवलेल्या त्रुटी/उणिवा -

४) नवीन अध्यापनात वर्गव्यवस्थापनात निर्माण होणारे प्रश्न -

शिक्षक - प्रशिक्षकांचे नाव व सही

नोंदणी क्र.

केंद्र

सहाध्यायीचे नाव व सही

नोंदणी क्र.

केंद्र

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प्रा.डॉ कविता साळुंके (Pg. 251-259)

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१ प्रस्तावना

डिजीटल शाळाहीसंकल्पना आपणास माहित असेलच डिजीटल शाळेच्या या प्रयत्नातूनच २०२० चेडिजीटल इंडियाहे स्वप्न पूर्णात्वास येणार आहे. आज आपण पाहात आहोत सर्वाच क्षेत्रात तंत्रज्ञानाचा वापर वाढत चालला आहे.दैनंदिन जीवनातील सर्व आवश्यककामे आता तंत्रज्ञानाचा माध्यमातूनकेली जात आहे.म्हणूनहा तंत्रज्ञानाचा वाढता वापर लक्षात घेता शिक्षणक्षेत्रात या तंत्रज्ञानाचा समावेश शालेय अभ्यासक्रम करण्यात आला आहे.अगदी प्राथमिक शाळेतील विद्यार्थ्याला देखील तंत्रज्ञानाची ओळख व्हावी यासाठी प्रत्येक विषयात तंत्रज्ञानावर आधारित एक पाठ देण्यात आला आहे.उदा.चुबंकाची गमंत, सफर मेट्रोची असे पाठ आहेततसेच माहितीसंप्रेषण तंत्रज्ञान हा विषय नव्याने समाविष्ट करण्यात आला आहे.आणि शालेय विद्यार्थ्यांना संगणकाची ओळख व्हावी आणि संगणकहातळता यावा यासाठी प्रत्येक शाळेतसंगणक शिक्षकाची नेमनूक देखीलकरण्यात आलीपाच वर्षा करिता.यातून शाळेतील विद्यार्थ्याला तंत्रज्ञानाचे ज्ञान मिळावे व त्याचा या स्पर्धेचा युगात टिकावा लागावा हाहेतू आहे.तसेच शालेय विषयाचे अध्यापन करणा-या शिक्षकाला देखील माहितीसंप्रेषण तंज्ञानातील सर्व आधुनिकसंकल्पना समजाव्यात शिक्षकाला देखील तंत्रज्ञान हाताळणीचेकौशल्य अवगत व्हावे यासाठी त्यांना अनेक प्रशिक्षण देण्यात आली.आणि तंत्रज्ञान संबंधित काहीगोष्टी शिक्षकांनासक्तीच्या करण्यात आल्या जसे विद्यार्थ्यांची सर्व माहिती ऑनलाईन भरणे त्याला आपण सरल माहितीअसेम्हणतोतसेच शिक्षकाने ब्लॉग तयार करावे त्यावर आपली मते नोंदवावी विविध संशोधने करावी त्यावर माहितीचे देवाण -घेवान करावी आपण अध्यापन करित असलेल्या विषय अध्यापन करण्याकरिता तंत्रज्ञानाचा वापर करावा.ppt तयार कराव्या विविध प्रसंगाचे व्हिडीओ डाऊनलोड करावे आणि विविध शैक्षणिकॲप डाऊनलोड करावे ई-पाठशाला,ई- लर्निग, ई-ग्रंथालय,ई-बुक या देखील शिक्षणाशीसंबधित संकल्पना आहेत.याची माहिती असावी.थोडक्यात शिक्षकाला शिक्षणात येणाऱ्या सर्व नवीन विचार प्रवाह माहित असने आवश्यक आहे.आजचे युगहे तंत्रज्ञानाचे युग आहे या

करिता शिक्षकाने आपल्या अध्यापनात तंत्रज्ञानाचा वापर जास्तीत जास्त करणे अपेक्षित आहे.आणि हा वापर करण्याकरिता शिक्षकाला तंत्रज्ञाना बद्दल ज्ञान,आकलन व त्याचे उपयोजनकरता येणे आवश्यक आहे.आणि त्यानुसारच शिक्षकाची भूमिका आज सुविधादात्याची झाली आहे.वरील सर्व शैक्षणिक तंत्रज्ञानाचे महत्व लक्षात घेता शिक्षक आपल्या अध्यापनात कितपत शैक्षणिकतंत्रज्ञानाचा वापर करतातकोण-कोणत्या बाबतीत ते तंत्रज्ञानाचा उपयोगकरतातआणि त्यांच्या विद्यार्थ्यांवर या तंत्रज्ञान हाताळणीचाकाय परिणामहोतोहे पेपर मध्ये देण्याचा प्रयत्न केला आहे.

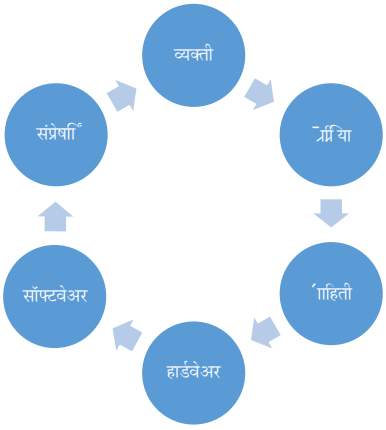
२शिर्षक: शिक्षकांचा शालेय स्तरावर अध्यापनात माहितीसंप्रेषण तंत्रज्ञानाचा वापराचा अभ्यास.

माहितीसंप्रेषण तंत्रज्ञान म्हणजेकाय?

माहिती शोधणे,ती साठविणे,त्यावर प्रक्रियाकरणे आणि प्रक्षेपित करणे किंवा तिची देवाण - घेवान करण्यासाठी वापरली जाणारी विद्यूत उपकरणे म्हणजे माहिती व संप्रेषण तंत्रज्ञान होय.

यामध्ये वेब रेडिओ,दुरदर्शन,विविध शैक्षणिक वाहिन्या,व्हिडिओ,एल.सी.डी.संगणक,इंटरनेट,हार्डवेअर आणि सॉफ्टवेअर अशा घटकांचा समावेश होतो

यात प्रमुख्यानेसहा घटकांचा समावेश होतो.



यातूनच शैक्षणिक तंत्रज्ञान हीसंकल्पना उदयास आली.

मानवी अध्ययन प्रक्रियेत शैक्षणिकसुधारणा घडवून आणण्यासाठी केलेल्या निरनिराळया तंत्राच्या साधनांचा मूल्यामापनांसाठीकेलेला उपयोगहोय.

जे.के.गॉल्वेथ 'The New Industrial State' या पुस्तकात म्हटले आहेकी शास्त्रीय ज्ञानाचा प्रत्यक्षकृतीकरण्याकरिताकेलेला पध्दतशीर उपयोग व प्रत्यक्षकृतीचे निरनिराळया घटकांमध्येकेलेले विभाजनहोय.

डेरिक अनविन -शैक्षणिक तंत्रविज्ञान म्हणजे शिक्षणाच्या आधूनिक अध्ययन,अध्यापन पध्दतीतील विविध तंत्राचा उपयोगकरणे.

शालेय स्तरावर कोण-कोणत्या ठिकाणी ICT चा उपयोगहोऊ शकातो.

अ.क्रं	**शालेयकामकाज**	
१	पारिपाठ	प्रार्थना,संविधान,सुविचार,बोधकथा, विविध कोडी टेप रेकॉडरहोम थिअटर वेब रेडिओ,
२	विद्यार्थ्यांचीहजेरी	बायमेट्रीक व्दारे हजेरी,
३	दैनंदिन नोंदी	दररोजच्या नोंदी फोटो घेवून WS.Ward मध्ये ठेवू शकतात
४	वर्गातील अध्यापन	दैनदिन अध्यापनात PPT, **अनिमेशीन** ,व्हिडीओ,शैक्षणिक ॲपचा वापर
५	विद्यार्थ्यांचे मूल्यमापन	प्रश्न प्रत्रिकातयारकरणे, ऑन लाईन टेस्ट,स्वाध्याय
६	विद्यार्थ्यांचं एडमिशन	विद्यार्थ्यांचे एडमिशन ऑनलाईन करणे.सर्व व्यवहार ऑनलाईनकरणे

ICT चा वापरा व्दारे खालील घटकांची रुजवूणक होऊ शकते

अ.क्र	ICT चा वापरा व्दारे खालील घटकांची रुजवूणक होऊ शकतेPPT,Edu.APPS ,Vdieo Animation	
१	राष्ट्रीय गाभा घटक	जीवन कौशल्य शिक्षण
२	मूल्यशिक्षण	तंत्रज्ञानाचे शिक्षण
३	पर्यावरण शिक्षण	आरोग्य शिक्षण
४	शांतता शिक्षण	व्यक्तीमत्व विकास

पाठटाचण Daily Techan – Path Tachan ,ज्ञान ,Engish Grammar ,मराठी सुविंचार MDM calculator ,Prarthana sabha, Shaley welapatrk असे विविध अप्स तयार करता येतात (ज्ञानवाहक ब्लॉग) असे विविध अप्स तयार करून शिक्षक वरील घटकांची रुजवणूक करू शकतो

३उद्दिष्ट

१ शिक्षकांना ICT बद्दल असलेल्या ज्ञानाचा शोध घेणे.

२ शिक्षकांचाअध्यापनापूर्व तयारीत ICT वापराचा शोध घेणे.

३ शिक्षकांचा प्रत्यक्ष अध्यापनात ICT चा वापराचा शोध घेणे.

४ शिक्षकांच्या ICT समृध्दतेचा विद्यार्थ्यांवर होणारा परिणाम पाहाणे.

गृहीतक

१ शालेय अभ्यासक्रमात माहितीसंप्रेषण तंत्रज्ञानाचा समावेश आहे.

२ शालेय स्तरावरील सर्व शिक्षक ICT चा अध्यापनात वापर करतात.

कार्यपध्दती

सदर विषयाचा अभ्यासा करण्यासाठी वर्णनात्मक संशोधन प्रकारातील सर्वेक्षण पध्दतीचा वापर केला आहे.

न्यादर्श

नंदुरबार शहारातील इयत्ता ६वी ते १० वी च्या वर्गांना अध्यापन करणारे एकूण१०० शिक्षकव ६ वी ते १० वी चे एकूण १०० विद्यार्थी यांची निवड संभाव्याता प्रकारातीलसुगम यादृच्छीक पध्दतीनेकेली आहे.

साधने

अ.क्र	न्यादर्श	साधने
१	७ वी ते १० वी शिक्षक	प्रश्नावली व पाठाचे निरिक्षण
२	७ वी ते १० वी चे विद्यार्थी	सामृहिक मूलाखत,शिक्षकांचा नोदी

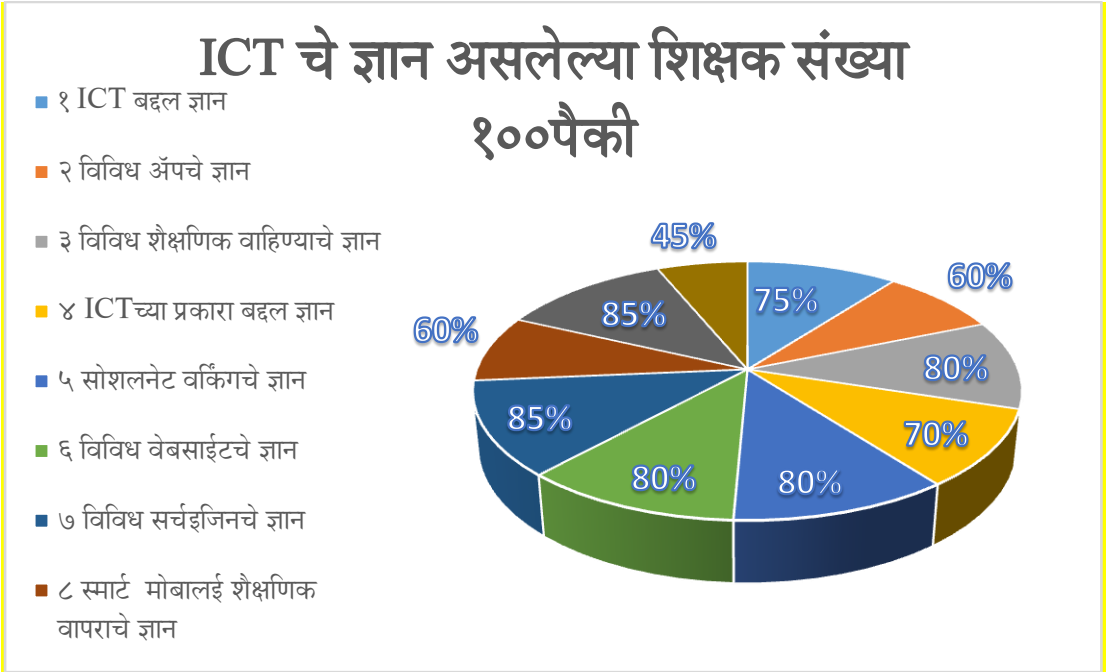
संख्याशास्त्रीय तंत्र

दिलेल्या प्रतिसादावर संख्याशास्त्रीय प्रक्रियेसाठी टक्केवारी ,आलेख व मूलाखतीचे प्रातिसादाचे विश्लेषण करण्यासाठीगुणात्मक विश्लेषण पध्दतीचा वापर केला आहे

निष्कर्ष व अन्वार्याथ

उद्दिष्टक्रं १ चे निष्कर्ष शिक्षकांना ICT बद्दल असलेल्या ज्ञानाचा शोध घेणे

अ.क्र	ज्ञानाचा शोध	ज्ञान असलेल्या शिक्षक संख्या १००पैकी	टक्केवारी
१	ICT बद्दल ज्ञान	७५	७५%
२	विविध ॲपचे ज्ञान	६०	६०%
३	विविध शैक्षणिक वाहिण्याचे ज्ञान	८०	८०%
४	ICTच्या प्रकारा बद्दल ज्ञान	७०	७०%
५	सोशलनेट वर्किंगचे ज्ञान	८०	८०%
६	विविध वेबसाईटचे ज्ञान	८०	८०%
७	विविध सर्चइजिनचे ज्ञान	८५	८५%
८	स्मार्ट मोबालई शैक्षणिक वापराचे ज्ञान	६०	६०%
९	बॉल्ग तयारकरण्याचे ज्ञान	८५	८५%
१०	शैक्षणिक Video Clip तयारकरण्याचे ज्ञान	४५	४५%

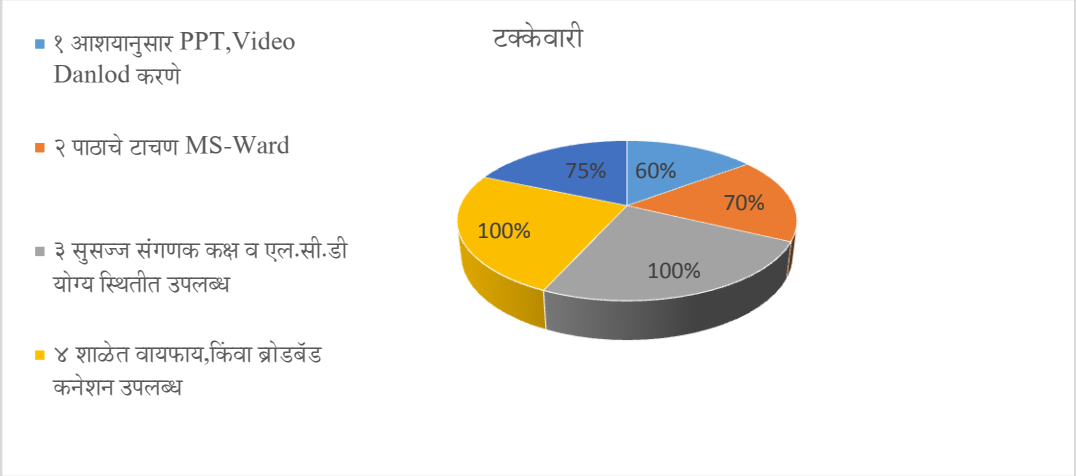


निरिक्षण वरील तक्त्याचे निरिक्षणावरुन आपणास असे लक्षात येतेकीसरासरी७२% शिक्षकांना ICT बद्दल पूर्वज्ञान आहे.

दिलेल्या प्रतिसादा वरुन शिक्षकांना ICT विषयीचे ज्ञान आहे.शालेय स्तरावर प्रशिक्षण, MS-CITकोर्स झालेले असल्यामूळे व शिक्षकांनासंगणक आधारे अध्यापन करणेसक्तीचे असल्याने व शालेय अभ्यासक्रमात ICT या विषयाचा समावेश असल्याने शिक्षकांनाICT थेअरीचेज्ञान आहे असे दिसते.

उद्दिष्ट क्र.२ निष्कर्ष शिक्षकांचा अध्यापनापूर्व तयारीत ICT वापराचा शोध घेणे.

अ.क्र	अध्यापनपूर्व तयारी	शिक्षक संख्या	टक्केवारी
१	आशयानुसारPPT,VideoDanlodकरणे	६०	६०%
२	पाठाचे टाचण MS-Ward	७०	७०%
३	सुसज्ज संगणककक्ष व एल.सी.डी योग्य स्थितीत उपलब्ध	१००	१००%
४	शाळेत वायफाय,किंवा ब्रोडबॅड कनेशन उपलब्ध	१००	१००%
५	ॲमिनेशनतयार करणे,सर्व साहित्याची जोडणीकरणे विविध शैक्षणिक अप्सचा वापर शोध	७५	७५%

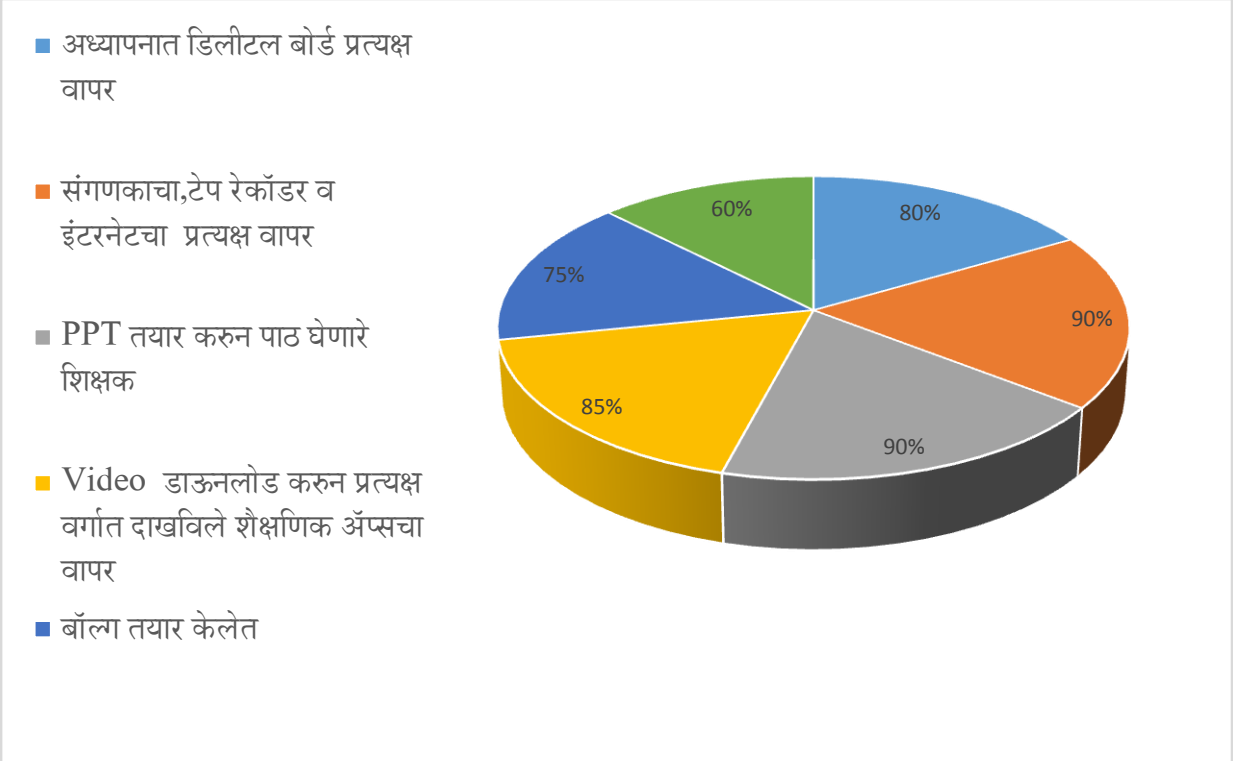


निरीक्षण तक्ता क्र.२ नुसार शिक्षक अध्यापनापूर्व तयारीसरासरी ८१%ICT चा उपयोगकरतात.

अन्वयार्थ शिक्षकांनी दिलेल्या प्रतिसादानुसार अध्यापनापूर्व आशयानुसार PPT तयारकरणे प्रसंगानुसार व्हिडीओ डाऊनलोडकरणे आणि विविध शैक्षणिक ॲपचा आधार घेतातसेच त्याचा शाळेत वायफाय सुविधा व ब्रोडबॅड क्नेशन उपलब्ध आहे.संगणकाची संख्या ही विद्यार्थ्यांचा संख्येपेक्षाकमी आहे. शिक्षक अध्यापनापूर्व तयारीतकमी प्रमाणात ICTचा उपयोगकरातात

उद्दिष्ट क्र.३ निष्कर्ष शिक्षकांचाप्रत्यक्ष अध्यापनात ICT चा वापराचा शोध घेणे.

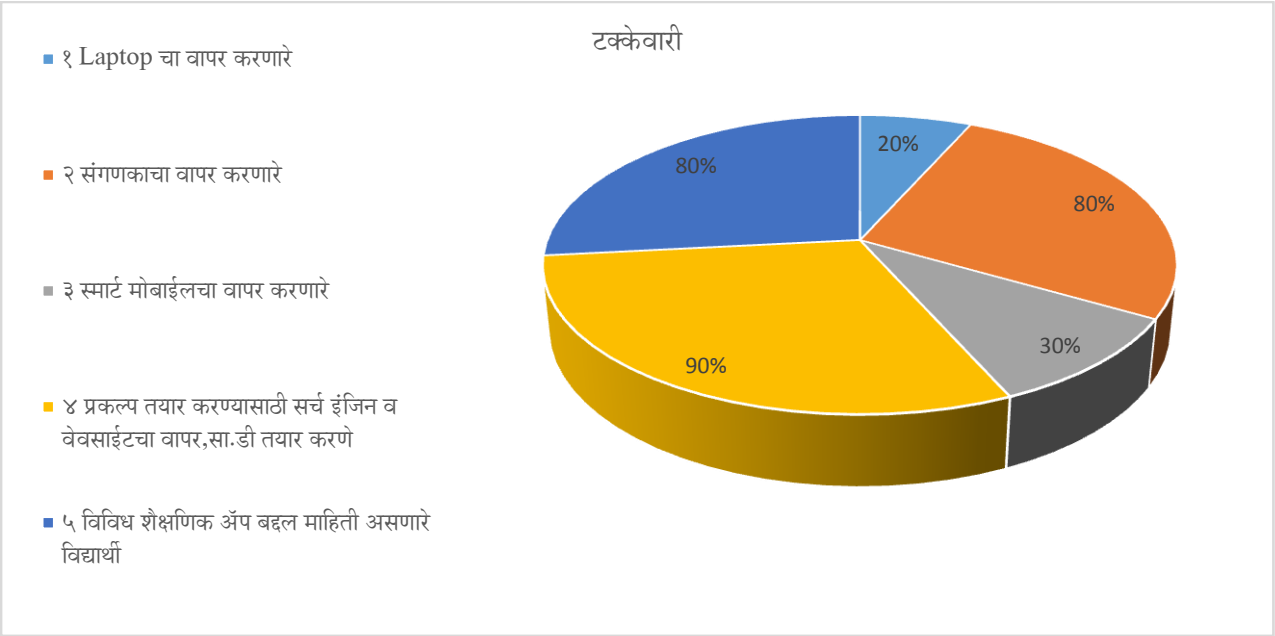
अ.क्र	प्रत्यक्ष ICT वापर	शिक्षक संख्या	टक्केवारी
१	अध्यापनात डिलीटल बोर्ड प्रत्यक्ष वापर	८०	८०%
२	संगणकाचा,टेप रेकॉडर व इंटरनेटचा प्रत्यक्ष वापर	९०	९०%
३	PPT तयार करुन पाठ घेणारे शिक्षक	९०	९०%
४	Video डाऊनलोड करुन प्रत्यक्ष वर्गात दाखविले शैक्षणिक ॲप्सचा वापर	८५	८५%
५	बॉल्ग तयारकेलेत	७५	७५%
६	वेबरेडिओचा प्रत्यक्ष वापर	६०	६०%



तक्ता क्र ३ चे निरीक्षणकेले असतासरासरी८०% शिक्षकसाधारण पणे ICTचा अध्यापनात वापर करतात. अन्वयार्थ प्रत्यक्ष केलेल्या शिक्षकांच्या अध्यापनाचा निरीक्षणा वरुन फक्त PPT तयारकरणे व्हिडीओ क्लिप दाखविणे डिजीटल बोर्डचा वापर करणे मात्र स्वत व्हिडीओ क्लिप तयारकरणे अवघड जाते.जेसहज उपलब्ध आहेत अशा साहित्याचा शिक्षक अध्यापनात उपयोगकरतात.

उद्दिष्ट क्र.४ निष्कर्षशिक्षकांच्या ICT समृध्दतेचा विद्यार्थ्यांवर होणारा परिणाम पाहाणे.

अ.क्र	विद्यार्थ्यांचा ICT वापर	विद्याथी संख्या १००	टक्केवारी
१	Laptop चा वापर करणारे	२०	२०%
२	संगणकाचा वापर करणारे	८०	८०%
३	स्मार्ट मोबाईलचा वापर करणारे	३०	३०%
४	प्रकल्प तयारकरण्यासाठी सर्च इंजिन व वेबसाईटचा वापर,सा.डी तयारकरणे	९०	९०%
५	विविध शैक्षणिक ॲप बद्दल माहिती असणारे विद्यार्थी	८०	८०%



निरीक्षण तक्ता क्र ४ नुसारसरासरी ६०% विद्यार्थी हे प्रकल्प तयारकरण्यासाठी व त्याचे प्रेझेंटेशनसाठी विविध सर्चइजिन व वेबसाईटचा वापर करतात.सी.डी.तयारकरतात.

अन्वयार्थ दिलेल्या प्रातिसादानुसारव निरीक्षणा वरुन शाळेत ज्या सुविधा उपलब्ध आहेत.त्याचा वापर विद्यार्थी हे आपले स्वाध्याय व सरावा साठी उपयोगकरतातज्या पध्दतीने शिक्षक अध्यापनात ICTचा उपयोगकरतातत्याप्रमाणे शाळेतील विद्यार्थी देखील ICTचा वापर करतांना दिसतात.मात्र शिक्षकापेक्षा विद्यार्थ्यांचे प्रमाण कमी आढळते.

मुलाखती वरुन विश्लेषण

१)शिक्षकांना ICT विषयाचे ज्ञान आहे.मात्र त्याचे वापरा बददल पाहिजे तेवढे ज्ञान नाहीकारण प्रशिक्षणाचा अभाव जाणवतो.तसेच नेटवर असलेली माहितीसंकलित करणेती वर्गात दाखविणे मात्र स्वत: एकादेसॉप्टवेअर तयारकरणे व्हिडीओ क्लिप तयारकरणे अवघड काम आहे असे त्यांना वाटते.

२).विद्यार्थ्यांना शाळेत जेसंगणकसहज उपलब्ध होतात त्यावर विविध प्रोजेक्टतयारकरतात मात्र शाळेतील ५०% विद्यार्थ्यांना स्वत:चा Laptop नाही.विविध शैक्षणिक अप्स बददल माहिती आहे मात्र जास्त डेटासंकलित करुन ठेवता येईल असेस्मार्टफोन नाहीत.थोडक्यात विद्यार्थ्यांचा मोठयाप्रमाणावर ICT वापरा विषयी सकारात्मक दृष्टीकोन दिसून येतो.उपयोग मात्र शाळेत जे त्यांना संगणक उपलब्ध होतात त्या शाळेच्या वेळेत त्याचा उपयोग करु शकतात.आणि सुट्टीचा दिवशी सायबर कैफेवर जाऊन आपले प्राजेक्ट पूर्णकरतात.

३) शाळेतील विद्यार्थी संख्या जास्त आणि संगणक संख्या कमी यामूळे देखील वर्गातील सर्व विद्यार्थ्यांना संगणकहाताळणे शक्य होत नाही.आणि त्यांना सरावासाठी पाहिजे तसा वेळ दिला जात नाही.कारण शिकविणारा

शिक्षक एकच आणि दिवस भर २०-२० मूलांच्या ५ वी ते १० पर्यताच्या बॅचेस असतात त्यामूळे वेळ उपलब्ध होत नाही.

४) शिक्षक इतिहास विषयाचा अध्यापनासाठी युटयूब वरील विविध एतिहासिक व्हिडीओ क्लिपचा वापर करतात.जसेहडप्पा संस्कृती,शिवाजी महाजांचे किल्ले, ताजमहाल,इजिप्तचे पि-यामीडइ.भूगोल विषयासाठी विविध प्रदुषणत्यामुळेहोणारे दुषपरिणाम उदा. जलप्रदुषण, भूमीप्रदुषण, लोकजीवन, ग्रह तारे, सुर्यग्रहन, चंद्रगहन, आकाशगंगा आणि अपक्षरण, नदीचेकार्य, सागरी लाटांचेकार्य यासाठी ॲमिनेशन चा वापर करतात. विज्ञान विषयासाठी प्रत्यक्ष प्रयोग करणे,भाषा विषयासाठी विविध शैक्षणिक अप्साचा वापर करतात.

सारांश

ICTया विषयाची उपयुक्तता लक्षात घेता शालेय स्तरावर ५०% पेक्षा जास्त शिक्षकहे अध्यापनात ICTचा उपयोगकरतात.आणि त्या शाळेतील विद्यार्थ्यी देखील ICTचा वापर करताना दिसतात.मात्र अजूनही प्रत्येक शाळेत मुबलक प्रमाणात संगणक उपलब्ध नाहीत आणि विद्यार्थी संख्या जास्त असल्याने प्रत्येक विद्यार्थ्यांला संगणकावार जास्त वेळ सराव करता येत नाही.तसेच अजूनही शिक्षकाने ५०% शिक्षकांना ICTचा वापरा बद्दल पाहिजे ज्ञान नाही स्वतः बॉल्ग तयारकरणे आणि त्यावर माहिती अपलोडकरणे विकीपीडीया चा वापर करणे स्वतः ICTचा वापरावर कृतीसंशोधनकरणे याचे प्रमाणत खुपकमी जाणवते.

संदर्भ

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इलेक्ट्रॉनीक माध्यमांचा शिक्षणावरील प्रभाव

प्रा.डॉ.जाधव.व्ही.एन. (Pg. 260-268)

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प्रस्तावना :

शिक्षणही प्रक्रिया पृथ्वीवरील मानवाच्या अस्तित्वाइतकीच जूनी आहे. असे म्हटले तरचुकीचेठरणार नाही. प्राचीन काळापासून अध्ययन-अध्यापनाच्या पध्दतीमध्ये माध्यमांच्या साहयाने बदलहोत आहेत. अमूर्त कल्पना स्पष्ट करण्यासाठी मानव चित्रे, आकृत्या, तक्ते इ. वापर करत असे परंतू सध्याची शिक्षणाच्या माध्यमांमध्ये अमूलाग्र बदलहोत आहेत. प्रत्येक नाण्याला दोन बाजू असतात. तदवत शिक्षणामध्येही इलेक्ट्रॉनीकमाध्यमांचा वापर केल्याने काही भले-बुरे परिणाम शिक्षणावरहोतानादिसून येत आहेत.

संगणक युगाने तर यात क्रांतीच केली आहे.ऑनलाईनमुळे माहितीचा जणूखजीना मोकळा केला आहे.वेळ आणि श्रमाची बचत झाली आहे.तत्परता आणि अचूकता यात तंत्र ज्ञानामुळे नक्कीच पुढचे पाऊल उचलले आहे. लेखक, कलावंत, अभियांते, शास्त्रज्ञ, तंत्रज्ञ, व्यापारी, उद्योजक, व्यावसायिक, डॉक्टर्स, विद्यार्थी, वकील, शेतकरी इ. सर्वच क्षेत्रातील लोकसंगणकाचा सर्रास वापर करताना दिसतात.

१. संगणकाची क्षमताव परिणामकारकता मानवाच्या तूलनेतकिती अधिक असते.

२. मानवाच्या अनेकपट वेगानेसंगणक आकडेमोड करुशकतो.

३. संगणकाचीस्मृती अधिक आहे

४. संगणकचुका करीत नाही.

५. संकगाण कधी थकत नाही.

६. संगणक प्रक्रिया अतिवेगवान असताना

७.संगणकाचे काम अचूकवखात्रीशीर असते.

शिक्षण :

शिक्षणक्षेत्रामध्ये संगणकाचा वापर मोठया प्रमाणावर होत आहे. संगणक थकत नसल्यामुळे व त्याची सेवा २४ तास उपलब्ध असल्यामुळे त्याचा वापरामुळे शिक्षण प्रणाली कमालीची लवचीकव परिणामकारक झाली आहे.शाळा, महाविद्यालये, प्रशिक्षण संस्था, विश्वविद्यालये वइतरशिक्षणसंस्था यामध्ये संगणकाचा वापर अध्यापनासाठी, गणिती आकडेमोड तसेचइतर प्रश्नांची सोडवणूक करण्यासाठी, गृहपाठ करण्यासाठी, विविध बाबींमधील अन्योन्य संबंध स्पष्ट करण्यासाठी अनेकस्थिर तसेच गतिमान वस्तूंचीव प्रणालींची कार्यपध्दती चित्ररुपाने, चलतचित्ररुपाने, संकल्पचित्ररुपाने अतिशय स्पष्टपणे समजावून सांगता येते वा समजावून घेता येते. याचा वापर प्रत्यक्ष करता येणे शक्य नसणारेवैज्ञानिक प्रयोग आभासी पध्दतीनेघडवून आणण्यासाठी होतो. तसेच व्यवस्थापकीय, अर्थशास्त्रीय, अभियांत्रिकी विश्लेषणां मध्येही करता येतो.संगणकाच्या साहाय्याने ज्ञानाशीसंबंधितसंवाद/संदेशवहन/संप्रेषण अतिजलद, अफाट क्षमतेने व कार्यक्षमतेने, थेट संपूर्णपणे बिनचूक आणि अत्युच्च गुणवत्ता असलेलेहोत असल्याने ज्ञानाचीसर्वकषवाढ ववविस्तारघडून येत आहे. सर्वस्तरातीलशिक्षणासाठीसंगणकहा एकसंसाधन म्हणून कार्य करतो.विशिष्ट पाठासाठीच्या शिक्षणविषयक सूचनाव मजकूर यासंबंधी संगणक आज्ञावलीसंगणकात साठविल्या जातात. विद्यार्थी अशा आज्ञावली बोलावून त्यांना हवे ते पाठ शिकूशकतात. अनेक विद्यार्थी एकाचवेळी अशा आज्ञावली बोलावू, शकत असल्यामुळे शिक्षकांचावेळवाचतोव त्यांना प्रत्येक विद्यार्थ्यांकडे वैयक्तिकरित्या व स्वतंत्रपणे लक्ष देणे शक्य होते.

संगणकाचा वापर करुन शिक्षणाच्या प्रक्रियेचे व्यवस्थापन करता येतो. उच्चशिक्षण घेणारे तसेचविज्ञानव तंत्रज्ञानाचे विद्यार्थी संगणकव आज्ञावलींचावापर करुन गुंतागुंतीची गणिते सोडवू शकतात. शिक्षकवृंदाला त्यांच्या प्रशासकीय कार्यातही संगणकाची खूपच मदत होत असल्याने त्यांना अधिकाधिकवेळ अध्यापनासाठी देणे शक्य होते.

ई-लर्निंगः

शिक्षण, प्रशिक्षण, ज्ञान व्यवस्थापन आणि कामगिरी व्यवस्थापन या हेतूंनी ऑनलाईन पध्दतीनेदिले जाते. ही एकवेब एनेबल म्हणजे वेबच्या सहाय्याने कार्य करणारी प्रणाली असून याप्रणालीच्या माध्यमातून शोधकर्त्यांना,व्यावसायिकांना,विद्यार्थ्यांना किंवाइतर कुणीहीज्ञानाच्या शोधात असणाऱ्याला स्थलकालनिरपेक्ष अशा पध्दतीने ज्ञानापर्यंतपोहोचणे शक्य होते. ई-लर्निंग शालेय शिक्षण महाविद्यालयीन शिक्षण तसेच कॉपोरेट प्रशिक्षणामध्येही अतिशय उपयुक्त ठरते.हेइंटरनेट वइंट्रानेट यांच्या माध्यमातून शक्य होते. मोठाल्या कंपन्या नॉलेज मॅनेजमेंट म्हणजे ज्ञानव्यवस्थापनावर खूपच खर्च करतात. कारकिर्दीच्या मध्यावर असणारे व्यावसायिकही ई-लर्निंगच्या माध्यमातून स्वतःला पुनरपी कौशल्य प्रदान करुशकतात.

भारतामध्ये आंध्रप्रदेश व मध्यप्रदेश या राज्यांमध्ये दूरचित्रवाणीच्या माध्यमातून शिक्षण देऊन विद्यार्थ्यांचे प्रतिसाद इंटरनेटच्या माध्यमातून गोळा करण्यासाठी पथदर्शी कार्यक्रम पायलट प्रोग्रॅम हाती घेण्यात आले आहेत.

अनेक अग्रस्थानीअसणाऱ्याखाजगीशिक्षणसंस्था तसेच शासकीय अर्थसाहाय्य असणाऱ्याशिक्षणसंस्था यांनी दूरशिक्षणडिस्टन्सलर्निंग या संकल्पनेचा स्वीकार केला आहे. या माध्यमातून विस्तृतव दूरस्थ अशा ज्ञानग्राहकांपर्यंत वा विद्यार्थ्यांपर्यंत पोहोचणे शक्य होते. स्वगतीने पूर्ण करता येणारे नेट इंटरनेट च्या माध्यमातून पोहोचविले जाणारे अनेक शिक्षणक्रम प्रचलित आहेत.

विदेशीविश्वविद्यालये भारतातील अग्रस्थानी असणाऱ्या शिक्षणसंस्थांशी सहयोग करुन नेट बेस्ड एज्युकेशन म्हणजे इंटरनेटच्या माध्यमातून शिक्षण देऊ करतात. अशास्वगतीने पूर्ण करता येण्याजोगा शिक्षणक्रमाच्या अखेरीसहोणारी परीक्षाही इंटरनेटच्या माध्यमातूनच दिली जातेव उत्तीर्ण विद्यार्थ्यांना विदेशी विश्वविद्यालयाचे प्रमाणपत्र प्रदान केले जाते. अशा शिक्षणक्रमाच्या अभ्यासाची साधनेहीइंटरनेटवर विनामूल्य उपलब्ध असतात.

भारतातील विश्वविद्यालये व प्रशिक्षण संस्था यांचा इंटरनेटवरुन प्रशिक्षण देण्यासाठी सहयोग.उदाहरणार्थ-इंदिरागांधी नॅशनल ओपन युनिव्हर्सिटी इग्नू आणि सत्यम इन्फो टेक यांचा प्रशिक्षणासाठी सहयोग.

ईलर्निगव्दारेखालीलगोष्टी साध्य करता येण्याची शक्यता निर्माण झाली आहे--

* कुशल मनुष्यबळाची निर्मिती
* वैश्विक बाजारपेठेसाठी तंत्रज्ञानव ज्ञानसामग्रीची निर्मिती
* ऑनलाईनशिक्षणासाठी साहाय्यभूत सेवा

भारतातील निरनिराळया क्षेत्रांतील माहिती तंत्रज्ञानाचा वापर

एज्युसॅट:

हा उपग्रह संपूर्णपणे शैक्षणिक उद्देशासाठी सप्टेंबर २००४ मध्ये सोडला गेला.भारताच्या निरनिराळया भागांमध्ये दृकश्राव्य माध्यमांतून या उपग्रहाव्दारे पुढील शैक्षणिकसेवा पुरविल्या जातात :वनवे टी.व्ही.ब्रॉडकास्ट,इंटरॲक्टिव्ह टी.व्ही.,व्हिडीओ कॉन्फरन्सिंग,कॉम्प्युटर कॉन्फंरसिंग,वेब बेस्ड इन्स्ट्रकशन्स इत्यादी. अंधशाळांसाठीचे नेटवर्कहे एज्युसॅट चे एक वैशिष्टयपूर्ण नेटवर्क आहे. आणखी एक वैशिष्टयपूर्ण नेटवर्क म्हणजे देशभरातील ५० अभियांत्रिकी संस्थांना जोडणारे एक्स्ट सी बँड नेटवर्क.तसेचखालील नाही नेटवर्क्स एज्युसॅट युटिलायझेन प्रोग्रॅम खाली निर्माण करण्यात आली आहेत.

* आय.आय.एम.बंगलोर ला त्याच्या चेन्नई केंद्राशी जोडणारे नेटवर्क.
* नॅशनल काऊन्सिल ऑफ सायन्स म्युझियमची पाच केंद्रे जोडणारीसी-बँड नेटवर्क्स
*पुरातत्त्वविषयक साधने,हस्तलिखिते वगैरेंच्या दूरस्थ स्थानांपासूनच्या प्रक्षेपणासाठी व डिजिटायझेशन साठीचे महाभारत संस्थानचे नेटवर्क
* केरळ राज्यातील मतिमंद शाळांमधील शिक्षकांनाव विद्यार्थ्यांच्या पालकांना माहिती वशिक्षण देणारी दोन नेटवर्क्स.

शैक्षणिक दूरचित्रवाणीसेवा (एज्यूकेशनल टी.व्ही.सर्व्हिसेस) :

इन्सॅटच्या माध्यमांतून पुढील भारतीय भाषांमध्ये प्राथमिक शिक्षणाच्या दूरदर्शनसेवा पुरविल्या जातात. तामिळ, मराठी, ओरिया, तेलुगू, हिंदीइतरशैक्षणिकसेवांची उदाहरणे -

१. राष्ट्रीय प्रसारणातील उच्चशिक्षणावरील कार्यक्रम.

२. यु.जी.सी. चे कंट्रीवाईड क्लासरुम कार्यक्रम

३. इंदिरागांधी नॅशनल ओपन युनिव्हर्सिटी ने प्रसारित केलेले कार्यक्रम

प्रशिक्षण वविकाससंबंधीसंचारवाहिनी :

या अंतर्गत एक्स्ट-सी बँड वरील आठ वाहिन्यांचा समावेश होतो.त्यातील सहा वाहिन्या इन्सॅट - ३ बीव २ वाहिन्या एज्युसॅटच्या आहेत. हीसेवा १९९५ पासून कार्यरत आहेत. यामध्ये अन्योन्यक्रियाक्षम शिक्षणासाठीवन-वेव्हिडिओव टू-वे ऑडिओ प्रणाली आहेत.

ही प्रणाली अनेक राज्ये व विश्वविद्यालये खालीलशैक्षणिकसेवांसाठी वापरतात.

* दूरशिक्षण
* ग्रामीण विकास
* महिला व बालविकास
* पंचायतीराज
* आरोग्य
* कृषी
* वनउद्यान इत्यादी

ग्यानदर्शन :

ग्यानदर्शन १ : समाजाच्या शैक्षणिकव विकासविषयक गरजा पूर्ण करण्यासाठी निर्मित करण्यात आलेलाहा दूरचित्रवाणी वाहिन्यांचा एकगट आहे.

ग्यानदर्शन २ : डी.व्ही.बी.आर.सी.एस. हे तंत्रज्ञान वापरुन दूरशिक्षण देणाराहा एकमेव उपग्रह आहे.

विद्यापीठ अनुदान आयोग : यनिव्हर्सिटी ग्रँटस कमिशन - यु.जी.सी.

इंटरनेटचा वापर करुन यु.जी.सी. ने विद्यार्थ्यांना तज्ज्ञांची व्याख्याने ऐकताव बघता येण्यासाठी ई-मोडयुल तयार केले आहे. या मॉडयुल च्या माध्यमातून विद्यार्थी वेब आधारीत परीक्षा देऊ शकतात. यु.जी.सीच्य सी.इ.सी. या आंतरविद्यापीठीय केंद्राने व्यवस्थापित केलेली व्यास हीशिक्षणासाठी समर्पित वाहिनीसुरु करण्यात आली आहे. या वाहिनीने दिलेल्या सेवांचे प्रकार खालीलप्रमाणे -

शैक्षणिकचर्चा, प्रश्नोत्तरे, नेमून दिलेलेशैक्षणिक काम, अभिप्राय किंवा प्रतिसाद

***संगणकाच्या अतिवापरामुळे शरीरावर परीणामी शिक्षणावरहोणारे परिणाम पुढीलप्रमाणे.**

*** शरीरावरहोणारेविवध परिणाम**

१. डोळयांवरील ताण

२. पोस्चर समस्या

३. एपिलेप्सी

४. इलेक्ट्रोमॅग्नेटिक रेडिएशन्स

सतत लॅपटॉप आणि टीव्हीचा वापर केल्यामुळे बऱ्याच किशोरवयीन मुलांच्या डोळयांवर ताण पडून नंतरदृष्टीवर फरक पडतो.त्यामुळे टीव्ही बघताना एकगोष्ट पालकांनी लक्षात ठेवायची की मुलाला टीव्हीपासून २ मीटर अंतरापेक्षा जवळ बसू देऊ नये. तसेच वाजवीपेक्षा जास्तवेळ कीबोर्डचा वापर किंवा व्हिडिओगेम्स खेळतानासतत बटणं दाबणे यांमुळे सतत ताण पडून बोटांनाइजाहोते.

बऱ्याच किशोरवयीन मुलांना संगणकावर काम करताना चुकीच्या स्थितीत बसल्यामुळे मानदुखी, पाठदुखीचाही सामना करावालागतो. तसेच त्यांना इलेक्ट्रोमॅग्नेटिक रेडिएशन्स विषयी जागरुक करणे महत्त्वाचे आहे.कुठल्याही इलेक्ट्रिक उपकरणांच्या जवळ बसण्यामुळे त्याच्या किरणांचा त्याचावर परिणाम होतोच. टीव्हीकिंवाव्हिडिओ खेळांमधील उजेड किंवा प्रकाश सततहालत असल्यामुळे कमी-जास्तहोत असल्यामुळे जास्तवेळ त्याच्या जवळ बसणाऱ्या ऐपिलेप्टिक म्हणजेच फिट् येणाऱ्या मुलांना फिट् येऊ शकते.

इंटरनेटच्या रुपात अस्तित्वात येणारे माध्यम :

मुलांच्यासंगणक आणि टीव्हीच्या अतिवापरामुळे कदाचित पालक अगदी कंटाळूनगेले असतीलकिंवा ते या नवीन आवश्यक अशा शिक्षणाच्या माध्यमाचे कौतुकही करत नसतील, पण इंटरनेट हे नक्कीच किशोरवयीन मुले व तरुणांकरीता भरपूर शैक्षणिक माहिती पुरविण्याची क्षमता असणारे उपकरण असून ते एक प्रचंड घरगुती वाचनालय आहे. असे म्हटल्यास वावगेठरणार नाही.

इंटरनेटच्या रुपात अस्तित्वात येणारे माध्यम :

मुलांच्या संगणक आणि टीव्हीच्या अतिवापरामुळे कदाचित पालक अगदी कंटाळूनगेले असतीलकिंवा ते या नवीन आवश्यक अशा शिक्षणाच्या माध्यमाचे कौतुकही करत नसतील, पण इंटरनेट हे नक्कीच किशोरवयीन मुले व तरुणांकरता भरपूर शैक्षणिक माहिती पुरविण्याची क्षमता असणारे उपकरण असून ते एक प्रचंड घरगुती वाचनालय आहे. असे म्हटल्यास वावगेठरणार नाही.

इंटरनेट वापराचे किशोरवयीन मुलांना होणारे फायदे :

१. अमर्याद माहिती पुरविणारा स्त्रोत

२. सहज परवडणाराव उपलब्ध

३. त्यांच्या शिक्षकांशीसंवाद साधणे शक्य करणारा

४. इ-मेल वव्हिडिओलिंकव्दारे तेसंवाद साधूशकतात.

५. मनोरंजनाचे स्त्रोत

इंटरनेटच्या वापरामुळे उव्दवणारे धोके :

१. जास्तवेळइंटरनेटचा वापर केल्यामुळे मुलांना त्याचं व्यसनच जडतं.

२. हे शाळेच्या कामामध्ये किंवा कार्यालयीन कामामध्ये व्यत्ययही आणूशकतं.

३. जास्तीत जास्तवेळइंटरनेटवर घालविल्यामुळे त्या मुलांचा समाजाशी,
मित्रमैत्रिणींशी आणि आईवडीलांशीसंवाद कमी होऊन जातो.

४. सतत बसून राहिल्यामुळे मुलांचे वजनवाढते तसेच शरीराच्या अवस्थेच्यासमस्या

निर्माण होतात.

५. किशोरवयील मुलांमध्ये इंटरनेटच्या अति वापरामुळे त्यांना लैंगिक विषयांवरील माहिती मिळवण्याचा मोह होण्याचा खूप धोका असतो.

इंटरनेट माध्यमांच्या वापराबाबत काय करुशकतो ?

अमेरिकन ऍकॅडमी ऑफ पिडियाट्रिक्स या संस्थेने असासल्लादिला आहे.की या मुलांना दररोज दोनकिंवा तीन तासांपेक्षा जास्त वेळपर्यंत या माध्यमांसमोर बसू द्यायचे नाही. याचाच अर्थ मुलांना टीव्हीवरीलहिंसक दृश्ये किंवा कार्यक्रम बघायला दिले नाही आणि त्या माध्यमांचा अतिवापर करुदिला नाहीव त्याबद्दल प्रोत्साहित करत राहिल्यास त्यांच्यामध्ये सकारात्मक मूल्ये आकारघेऊ लागतील. त्यासाठी पालकांनी कोणते उपाय अवलंबिले पाहिजेत.

१. तुमची मुले कोणते कार्यक्रम बघतात ते जाणून घ्या.

२. जेंव्हा तुम्ही अगदीलहान बाळांना सांभाळत असता तेंव्हा त्यांना घेऊन कधीही टीव्ही, व्हिडीओगेम्सकिंवाव्हिडिओचा वापर करु नका.

३. दिवसभरात १ ते २ तासच या माध्यमांची वापर करण्याची मर्यादा पाळा.

४. असा नियम करा की मुलांनी घरचा अभ्यास पूर्ण केल्याशिवाय तसेच जेवताना त्यांना टीव्ही, संगणक कशाचाच वापर करता येणार नाही.

५. मुलांच्या झोपण्याच्या खोलीत टीव्हीराहणार नाही याची खबरदारी घ्या.

६. तुमचा मुलगा काय बघतो आहे ते तुम्हीही बघा.

७. तुम्ही त्याच्यासोबत कार्यक्र बघत असताा त्याच्याशी बोला, त्याच्याशी संवाद साधूनरहा.

८. झोपण्याच्या थोडावेळ अगोदर टीव्ही बघणे बंद करा नाहीतर झोपेपर्यंत टीव्ही बघत राहिल्यास भावना त्यातील व्यक्तींशी जोडल्या जाऊन झाप लागणे कठीनहोईल.

९. तुमचे टीव्ही पाहणेसुध्दा मर्यादित ठेवून मुलांसमोर एक आदर्श उदाहरणठेवा.

यावर या मुलांसाठी काय करुशकतो.

या मनोरंजन करणाऱ्या माध्यमांचा अति प्रमाणात वापर करण्यामुळे बालक तसेच किशोरवयीन मुलांच्या मानसिक वशारीरिक आरोग्यावर त्याचा काय परिणाम होतो. याबद्दल

बालरोगतज्ञाने जागरुकराहूनवेळोवेळी मुलांना व त्यांच्या पालकांना त्याची जाणीव करुनदिली पाहिजे, तसेचकिशोरांनाकिंवा तरुणांनावाहनहळू चालविण्याबद्दल, अपघाताबद्दल, तसेच वॉट्सऍप, फेसबूकसारखी माध्यमे वापरताना काय सावधगिरी बाळगली पाहिजे याबद्दल डॉक्टरांनीसांगितले पाहिजे. त्याशिवाय मुलांनी या माध्यमांचा वापर कमी करुन त्या वेळातनिरनिराळे मैदानी खेळखेळले पाहिजेत. स्थूलपणाची समस्या टाळण्यासाठी एका जागेवर बसूनराहणे टाळावे तसेच टीव्हीवरीलहिंसक कार्यक्रम जास्तवेळ पाहू नयेत याविषयी मुलांना सल्लादिला पाहिजे. त्याऐवजी किशोरवयीन मुला मुलींनी फॅशन, हिंसक कार्यक्रम आणिवाईट संदेश देणारे चित्रपट पाहण्याऐवजी धार्मिक कार्यक्रम, योगा, आहारविषयक आणि आरोग्याशी संबंधित कार्यक्रम बघण्यावर भर दिला पाहिजे.

पालकांना बालरोगतज्ज्ञांनी असासला द्यायला हवी की मुलांसोबत तुम्हीही कार्यक्रम बघा, विचार करण्यास प्रवृत्त करणारे कार्यक्रम निवडा आणि मुलांची झोपण्याची खोली माध्यममुक्त ठेवा. जे बालरोगतज्ज्ञ त्यांच्या क्लिनिकच्या वऱ्हांडयात टीव्हीलावतात त्यांनी त्यावर हिंसा नसणारे म्हणजे अहिंसक कार्यक्रम दाखवले पाहिजेत. तसेच पालकांना मार्गदर्शन करुन त्यांच्या मुलांसाठी त्यांनी कोणत्या कार्यक्रमांची आणि माध्यमांची किती प्रमाणात निवड केली पाहिजे त्याविषयी कार्यक्रम राबविले पाहिजेत.

संदर्भ ग्रंथसूची-

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21 व्या शतकात शिक्षणाचे डिजिटलीकरण

देवकांबळे शोभा व्यंकटराव (Pg. 269-275)

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1. प्रास्ताविक

आपण 21 व्या भातकात जात आहोत जिथे तंत्रज्ञानाची मर्यादा नसते. हा कांतीकारक विकासाचा एक टप्पा आहे. जेथे तंत्रज्ञान प्रत्येक कोपऱ्यात होते. स्मार्टफोन, लॅपटॉप, टॅब्लेट हे अज्ञात शब्द नाहीत. या कालखंडात शिक्षण व्यवस्था सुधारल्याबद्दल विकसित होत आहे. कारण या पिढीचे विद्यार्थी सामान्य शिक्षणाच्या मर्यादेपर्यंत मर्यादीत नाहीत. त्यांची जिज्ञासा विशाल आहे आणि यापूर्वी तयार केलेल्या शैक्षणिक सिस्टमची देखभाल केली जावू भाकत नाही. जर आपण आपल्या मुलांना भालेय पध्दतीने शिकवत राहिलो तर आपण त्यांना उद्यापासून वंचीत ठेवू.

आमच्या जुन्या भौक्षणिक व्यवस्थेने 21 व्या शतकात एक संधी उभी करण्याची क्षमता नाही म्हणून आम्ही आमच्या शैक्षणिक व्यवस्थेत डिजिटलीकरण वापरण्यास भाग पाडले जात आहोत.

1.1 शिक्षणाची अंमलबजावणी करणे

''तंत्रज्ञान पंख'' बनू भाकते ज्यामुळे शैक्षणिक जग पूर्वीपेक्षा वेगान
आणि वेगाने उडता येवू भाकेल, जर आम्ही ते मान्य करू'' – जेनी आर्जे

आम्हाला जुन्या शैक्षणिक व्यवस्थेत 21 व्या भातकात एक संधी उभे करण्याची क्षमता नाही, म्हणून आम्ही आमच्या शैक्षणिक व्यवस्थेत डिजिटलीकरण वापरण्यास भाग पाडले जात आहेत.

1.2 शिक्षणाचा नवीन टप्पा सुरू झाला असून त्यात विविध प्रगत तंत्रांचा समावेश आहे.

1. ऑनलाईन अभ्यासक्रम
2. ऑनलाईन परीक्षा
3. डिजिटल पाठ्यपुस्तके
4. ॲनिमेशन
5. इंटरनेट, डिजिटलीकरण
6. प्रशासकीय उपक्रम

1.3 शिक्षणक्षेत्रात संगणकाचा उपयोग –

गेल्या दहा वर्शात शिक्षणात विविध अभ्यासक्रमांचा एक घटक या दृश्टिने संगणकाने महत्वाचे स्थान मिळविले आहे. संगणकाने पदवी व पदवीनंतरच्या जवळजवळ सर्व शास्त्रीय अभ्यासक्रमांचा एक आवश्यक विशय म्हणून स्थान मिळविले आहे. शैक्षणिक परिसर व संगणक यांचा संबंध दुहेरी आहे.

1.3.1 व्यवस्थापनातील उपयोग –

1. **प्रवेश** – कोणत्याही भौक्षणिक संस्थेत विद्यार्थ्यांना प्रवेश देणे हे जिकरीचे काम आहे. प्रवेश देतांना निरनिराळे नियम व कायदे यांचे पालन करावे लागते. अशावेळी संगणकामार्फत प्रवेश देण्याचे काम केल्याने काम झटपट व अचूकपणे करता येते.

2. **विद्यार्थ्यांचे प्रगती अहवाल** – शाळा व महाविद्यालयात विद्यार्थ्यांच्या निरनिराळ्या प्रकारच्या परीक्षा घेतल्या जातात. संगणकाच्या सहाय्याने विद्यार्थ्यांची गुणपत्रके झटपट तयार करता येतात.

3. **वेळापत्रक** – वेळापत्रक तयार करतांना विशयाची व प्रात्यक्षिकांची संख्या, प्रत्येक विशयाला दिलेला वेळ, उपलब्ध शिक्षक, वर्गसंख्या यांचा एकत्रित विचार करावा लागतो. शाळांमध्ये शिक्षकांच्या रजेच्या दिवशी त्या कामाचे नियोजन करावे.

4. **विद्यार्थी माहिती नोंद** – विद्यार्थ्यांचा जन्मदिनांक, पत्ता, पालकांचे वार्शिक उत्पन्न, शुल्क भरणा, शुल्क सवलत, उपस्थितीत, आरोग्य तपासणी इ. नोंदी संगणकाच्या मदतीने साठवून ठेवणे.

5. **विद्यार्थी मदत** – शैक्षणिक संस्थांमधून अभ्यासक्रम पूर्ण केलेल्या विद्यार्थ्यांना योग्य जागी कामाच्या संधी मिळवून देण्यासाठी आजकाल प्रयत्न केले जातात.

6. **माजी विद्यार्थी संघ** – माजी विद्यार्थ्यांची माहिती ठेवण्यासाठइी संगणकाचा वापर करणे फायद्याचे ठरते.

7. **कर्मचारी माहिती नोंद** – शैक्षणिक संस्थेत काम करणाऱ्या सर्व कर्मचाऱ्यांची संस्थेला माहिती ठेवावी लागते. ही माहिती अद्ययावत असणे गरजेचे असते. तसेच ती ताबडतोब व एकत्रितपणे हव्या त्या स्वरूपात उपलब्ध होणे ही महत्वाचे असते.

8. **ग्रंथालय** – संगणकाच्या वापरामुळे ग्रंथालयाचे काम अधिक चांगल्या दर्जाचे होऊ भाकते.

9. **डेड स्टॉक रजिस्टर्स** – शैक्षणिक संस्थांना त्यांच्याकडे असलेल्या फर्निचर, उपकरणे, साधने इ. गोश्टींच्या नोंदवह्या ठेवाव्या लागतात. या वहीत वस्तूंचे नाव, उपकरणांची स्थिती, देखभाल केल्याची माहिती इ.गोश्टींचा समावेश असतो. प्रत्येक सत्रात या गोश्टींची तपासणी व त्यानुसार नोंदी व कार्यवाही करावी लागते. काही गोश्टी मोडतोड झाल्याने टाकून द्याव्या लागतात, तर काही नव्या आणाव्या लागतात. या सर्व नोंदी योग्य स्वरूपात एकत्र ठेवणे संगणकामुळे सोयीचे होते.

10. **आर्थीक व्यवहार** – शैक्षणिक संस्थेच्या आर्थिक व्यवहारात निरनिराळ्या गोश्टींचा समावेश होतो. भुल्क, शिश्यवृत्ती, इ. चा कॅशबुक, बॅकबुक, लेजर, ताळेबंद, खर्चाचा तपशिल, पावत्या, पगार पत्रके या सर्व गोश्टी संगणकाच्या मदतीने करणे सोयीचे होते.

11. पत्रव्यवहार – निरनिराळया कामांसाठी पालक, विद्यार्थी, वित्तीय संस्था, शिक्षण खाते, तज्ज्ञ मंडळी इ. निरनिराळ्या स्वरूपाचा पत्रव्यवहार शैक्षणिक संस्थांना करावा लागतो.

12. अहवाल – शैक्षणिक संस्थांना निरनिराळ्या स्वरूपाचे अहवाल निरनिराळ्या कारणांसाठी सतत तयार करावे लागतात. अहवाल तयार करणे जिकरीचे व कश्टदायक काम असते.

13. नियतकालिक – शैक्षणिक संस्था सामान्यतः दरवर्शी नियतकालिक काढत असतात, त्यासाठी लेख जमविणे, जाहिराती मिळविणे, त्यांचे संपादन करणे व शेवटी छपाई करून घेणे अशा विविध गोश्टी कराव्या लागतात. छपाई सोडून इतर सर्व कामे संगणकाच्या सहाय्याने करून घेता येतात.

14. शालेय परिसर नोंद – शाळेची इमारत, सभोवताली जागा, मैदान व निरनिराळ्या प्रकारचे फर्निचर, वीज, पाणी, सांडपाणी व्यवस्था व सर्वांबाबतचा तपशील निरनिराळ्या स्वरूपात नोंदवणे आवश्यक असते या सर्वांची तपासणी, देखभाल वेळच्या वेळी करून घ्यावी लागते. या सर्व नोंदी योग्य स्वरूपात एकत्रित ठेवणे संगणकाच्या वापारने सोयीचे होते.

1.4 शैक्षणिक उद्दिश्ट्ये, अभ्यासकम व अध्यापन पध्दतींवर माहिती तंत्रज्ञानाचा होणारा परिणाम –

आजकाल ई–एज्युकेशन, ऑनलाईन युनिव्हर्सिटी, ई–लर्निंग असे शब्द शिक्षणक्षेत्रातील तज्ज्ञ मंडळींच्या कायम चर्चेत असतात. माहिती तंत्रज्ञान क्षेत्राची महती शिक्षकांना, विद्यार्थ्यांना, विद्यापीठांना आणि सरकारी शिक्षण खात्यांनाही पटली आहे. प्राथमिक शिक्षणापासून ते पी.एच.डी. पर्यंतच्या शिक्षणात माहिती तंत्रज्ञानाचा वापर होऊ लागला आहे.

1.5 शाळेतील विद्यार्थ्यांकरीता माहिती तंत्रविज्ञान –

वयोगट चार ते पंधरामधील मुले ही नवनवीन कल्पना शिकण्यास उत्सुक असतात. कोणतीही नवीन गोश्ट ही मुले पटकन शिकतात. अशा विद्यार्थ्यांना खडू, फळा,

पुस्तिकेबरोबरच माऊस, मॉनिटर, प्रिंटर, की–बोर्ड भाळेत हाताळायला मिळाला तर त्यांना संगणकाविशयी गोडी निर्माण होईल. विविध पॅकेजेस् ते सहजगत्या वापरू शकतील.

1.6 संगणक वापरातील शिक्षकाची भूमिका –

संगणक आधुनिक आणि अद्ययावत तंत्रज्ञानाची देणगी असून त्याची काम करण्याची विविधता थक्क करून सोडणारी आहे. त्यामूळ स्वतःहून पुढाकार घेवून संगणक वापर करण्याबद्दल एक दूरत्वाची भावना सामान्य लोकांच्या मनात ठाण मांडून बसलेली आहे. संगणक वापर ही आपल्या आवाक्यातली बाब नाही असेही वाटत असते. त्यामुळे कोणत्याही संस्थेत, कोणत्याही परिस्थितीत संगणकाचा वापर सुरू करणे ही प्रयत्नसाध्य गोश्ट ठरते. संस्थेमधील अनेकांच्या मनात संगणकाबद्दल आपुलकी नसल्याने वापरात अडथळे निर्माण होतात. संगणकाबद्दलची अढी दूर करून मोकळ्या मनानो त्याचा स्वीकार करण्यासाठी पार्श्वभूमी तयार करणे ही संगणक वापरातील सगळ्यात महत्वाची गोश्ट असते.

1.6.1 संगणक स्विकारण्याची पार्श्वभूमी तयार करणे –

संगणक स्वीकारण्यासाठी पा''र्वभूमी तयार करतांना खालील निरनिराळ्या गोश्टी कराव्या लागतात. संगणकाच्या उपयोगासांबंधीची माहिती संस्थेतील शिक्षक व कर्मचाऱ्यांना करून देणे ही पहिली गोश्ट आहे. यासाठी पुढाकार घेणाऱ्या शिक्षकाचे किंवा एखाद्या आमंत्रित व्याख्यात्याचे भाशण ठेवता येते. या प्रस्ताविकांनंतर संगणक उपयोगासंबंधीचे छापील साहित्य सर्वांना वाटावे.0 संगणक वापरणारे किंवा संगणक विक्रेते यांना विनंती करून संगणकाचे उपयोग दाखविण्यासाठी दिग्द''र्शन आयोजित करावे. उद्बोधनाची सुरूवात शिक्षकांच्या मनातील संगणकाबद्दलची भीती किंवा गैरसमज दूर करणे या कृतीने करावी.

1.6.2 अभ्यासक –

संगणक हे अतिशय वगाने प्रगत होत जाणारे साधन आहे. संगणक हार्डवेअर व सॉफ्टवेअर निर्मितीत वेगाने प्रगती होत आहे. नवनवीन सोयी, सुविधा, वापर सुकरता या गोश्टी उपलब्ध होत आहेत. या सर्वांची माहिती अद्ययावत राखण्यासाठी अभ्यासकाची भमिका वाढविणे आव''यक आहे.

1.6.3 नियोजक –

संगणकाचा जास्तीत जास्त शिक्षकांनी वापर करून जास्तीत जास्त विद्यार्थ्यांना फायदा मिळावा म्हणून काटेकोर नियोजनाची गरज असते. शिक्षकांना, कर्मचाऱ्यांना नियमितपणे प्रशिक्षण दिले तर नवनवीन सॉफ्टवेअरची यथायोग्य माहिती होऊन संगणकाचा अधिकाधिक वापर होत जातो. यासाठीही नियोजन करावयास हवे.

1.6.4 अध्यापक –

संगणकाच्या वापरातील ही सर्वात महत्वाची भूमिका आहे. अध्यापनासाठी निरनिराळ्या सॉफ्टवेअर्सचा निरनिराळ्या विद्यार्थ्यांसाठी उपयोग करणे, अध्यापन संगणकाच्या वापराने व्हावे म्हणून प्रयत्न करणे.

1.6.5 परीक्षक –

परीक्षक या नात्याने शिक्षकाला पुश्कळच काम करावे लागते. शाळेत वेगवेगळ्या परीक्षा असतात. जसे चाचण्या, सत्र परिक्षा, यासाठी प्रश्नपेढी तयार करणे, वेगवेगळ्या प्रश्नपत्रिका तयार करणे, त्या तपासणे व त्यांचे गुणपत्रक तयार करणे या सर्व कामी संगणकाचा वापर करता येणे सहज भाक्य आहे.

1.6.6 मूल्यमापक –

मुल्यमापन हा अध्ययन–अध्यापनाचा अविभाज्य भाग असतो. अध्ययन अध्यापनासाठी संगणक वापरल्याने खरेच वेगळी उद्दिश्टे साध्य झाली का? झाली नसल्यास साध्य होण्यासाठी काय करायला हवे? त्रुटी कोणत्या व त्यावर उपाय कोणते याचा विचार मूल्यमापनात करावा लागेल.

1.6.7 संशोधक –

स्वतःच्या व्यावसायिक प्रगतीसाठी व समाधानासाठी शिक्षक संशोधन करतात. संशोधनात संगणकाचा वापर सर्व टप्प्यांवर होतो. संगणकाच्या प्रभावी वापरासाठी संशोधन करता येईल.

1.6.8 मार्गदर्शक –

संगणकाचा वापर कोणी, केव्हा व कसा करावा, कोणकोणत्या गोश्टींसाठी संगणकाचा वापर करता येईल इ. संबंधीचे मार्गदर्शन शिक्षक, पालक, विद्यार्थी यांना करणे.

1..7 निश्कर्श –

1 डिजिटलीकरणाने आमच्या शिक्षण व्यवस्थेत कोणतीही शंका नाही परंतु आम्ही असे म्हणू शकत नाही. की आमच्या जुन्या काळातील वर्गाच्या शिक्षणाचे मूल्य कमी झाले आहे.

2 21 व्या भातकात शिक्षणाचे डिजिटलीकरण करण्यातील सर्वोत्तम भाग हा आहे की हे दोन्ही पैलूंशी जोडलेले आहे.

3 वर्ग शिक्षण आणि ऑनलाईन शिक्षण पध्दती, एकमेकांना एक समर्थन प्रणाली म्हणून कार्य करते, जे आमच्या आधुनिक विद्यार्थ्यांना मजबूत करते. शिक्षणातील डिजिटलायझेशन हे स्त्रोत जतन करण्याच्या योग्य पध्दती असल्याचेही सिध्द झाले आहे.

1. ऑनलाईन परीक्षा प्लॅटफॉर्मचे पेपरचा विनाशकारी वापर प्रतिबंधीत केला आहे. थेट झाडे तोडण्यापासुन थेट मर्यादीत केली आहे.

2. अ''याप्रकारे 21 व्या भातकात शिक्षण उद्योगाचे डिजिटलीकरण आमच्या समाजासाठी वरदान असल्याचे सिध्द होते.

संदर्भ ग्रंथ –

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मूक्त व दूरशिक्षणातील विद्यापीठातील डिजीटीलायझेशन

डॉ. दयाराम दु.पवार (Pg. 276-282)

सहायक प्राध्यापक, शिक्षणशास्त्र विद्याशाखा, यशवंतराव चव्हाण महाराष्ट्र मुक्त विद्यापीठ , नाशिक

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Abstract

माहिती तंत्रज्ञानाच्या युगामुळे सर्वत्र डिजिटलायझेशन होत आहे. शिक्षण क्षेत्र त्याला अपवाद नाही. शहरी काय तर ग्रामीण भागातील शाळासुद्धा आज डिजिटल शाळा होत आहे. ह्या बदलामुळे शाळां तर डिजिटल झाल्याच पण त्या शाळेमध्ये शिकणारे विद्यार्थी देखिल उद्याचे भविष्यही डिजिटल तयार होत आहे. शिक्षणापासून वंचित राहिलेल्या विद्यार्थ्यांना पुन्हा शिकण्याची संधी मूक्त व दूरस्थ शिक्षणाद्वारे दिली जाते. त्यासाठी अशा विद्यार्थ्यांसांठी मूक्त व दूरस्थ शिक्षण हे एक महत्वाचे केंद्रबिंदू ठरते. भारतातील वेगवेगळ्या मुक्त विद्यापीठाच्या माध्यमाद्वारे वंचितांना, ज्यांचे शिक्षण अपूर्ण राहीले, ज्यांना शिकायचे आहे अशासाठी हा शिक्षणाचा प्रवाह सुरु आहे . मुक्त व दुरस्थ शिक्षणात अध्ययन साहित्य, स्वंय अध्ययन , विविध माध्यमाद्वारे, संमंत्रण व माहिती तंत्रज्ञान संप्रेषणाचा उपयोग केला जातो . मूक्त व दूरशिक्षणात आयसीटी प्रवेशापासून ते निकालापर्यंतच्या विविध टप्यावर वापर होत असल्यामुळे मूक्त व दूरस्थ क्षेत्राचे डिजीटलायझेशन झालेले आहे. त्या माध्यमातून विद्यार्थ्यांना ई – सुविधा , डिजीटल लायब्ररी , ऑनलाईन डिस्कशन फोरम ,वेब रेडिओ ,लाईव्ह वेब कास्टींग , मूल्यमापनामध्ये ई सुविधांचा वापर , करीअर निवडीच्या संधी इ. उपयूक्त साठी उपयूक्त ठरतात. मूक्त व दूरशिक्षणातील डिजीटलायझेशनमुळे अध्ययनार्थी व विद्यापीठ ह्यांच्यामध्ये वेळेची बचत होते. तात्काळ आतंरक्रीया होतात. अध्ययनार्थींना बहुमाध्यमाच्या वापराचा अधिकाधिक वापर करण्याची क्षमता विकसीत होते. इतरत्र सहज न उपलब्ध होणाऱ्या ग्रंथाची प्रत इ स्वरुपात उपलब्ध होते. अध्ययनार्थींमध्ये शिकण्यासाठी प्रेरणा मिळते. मूक्त व दूरशिक्षणात आयसीटी केवळ अध्ययनार्थींसाठी उपयूक्त आहे असे नसून त्या संस्थेला देखिल प्रक्रीया करण्यासाठी व विद्यापीठ व अध्ययनार्थी ह्यांच्यातील सुसंवाद प्रक्रीया विकसीत करण्यासाठी मदत होते. सदरील पेपर मध्ये मूक्त व दूरशिक्षणातील डिजीटीलायझेशनचा वापर कशाप्रकारे केला जातो हे मांडलेले आहे.

कळीचे शब्द : मूक्त विद्यापीठ , ई – सुविधा , डिजिटल, डिजीटल लायब्ररी ,ऑनलाईन डिस्कशन फोरम ,वेब रेडिओ ,लाईव्ह वेब कास्टींग

प्रस्तावणा :- माहिती तंत्रज्ञानाच्या युगामुळे सर्वत्र डिजिटलायझेशन होत आहे. शिक्षण क्षेत्र त्याला अपवाद नाही. शहरी काय तर ग्रामीण भागातील शाळासुद्धा आज डिजिटल शाळा होत आहे. ह्या बदलामुळे शाळां तर डिजिटल झाल्याच पण त्या शाळेमध्ये शिकणारे विद्यार्थी देखिल उद्याचे भविष्यही डिजिटल तयार होत आहे शिक्षणापासून वंचित राहिलेल्या विद्यार्थ्यांना पुन्हा शिकण्याची संधी मूक्त व दूरस्थ शिक्षणाद्वारे केली जाते. त्यासाठी अशा विद्यार्थ्यासांठी मूक्त व दूरस्थ शिक्षण हे एक महत्वाचे केंद्रबिंदू ठरते. भारतातील वेगवेगळ्या मुक्त विद्यापीठाच्या माध्यमाद्वारे वंचितांना, ज्यांचे शिक्षण अपूर्ण राहीले, ज्यांना शिकायचे आहे अशा गटांसाठी शिक्षणाचा प्रवाह सुरु झाला. मुक्त व दुरस्थ शिक्षण हे स्वंय अध्ययन, माध्यमाद्वारे, संमंत्रणाद्वारे व माहिती तंत्रज्ञान संप्रेषण सारख्या वेगवेगळ्या उपागमातून दिल्या जाते. आयसीटीचा शिक्षणात वापर केल्यामुळे मूक्त व दूरस्थ क्षेत्राचे डिजीटलायझेशन झालेले आहे.

मुक्त व दुरस्थ शिक्षणात अध्ययन साहित्य, स्वंय अध्ययन , विविध माध्यमाद्वारे, संमंत्रण व माहिती तंत्रज्ञान संप्रेषणाचा उपयोग केला जातो . मूक्त व दूरशिक्षणात आयसीटी प्रवेशापासून ते निकालापर्यंतच्या विविध टप्यावर वापर होत असल्यामुळे मूक्त व दूरस्थ क्षेत्राचे डिजीटलायझेशन झालेले आहे. त्या माध्यमातून विद्यार्थ्यांना ई – सुविधा , डिजीटल लायब्ररी , ऑनलाईन डिस्कशन फोरम ,वेब रेडिओ ,लाईव्ह वेब कास्टींग , मूल्यमापनामध्ये ई सुविधांचा वापर , करीअर निवडीच्या संधी इ. उपयूक्त साठी उपयूक्त ठरतात. मूक्त व दूरशिक्षणातील डिजीटलायझेशनमुळे अध्ययनार्थी व विद्यापीठ ह्यांच्यामध्ये वेळेची बचत होते. तात्काळ आतंरक्रीया होतात. अध्ययनार्थींना बहुमाध्यमाच्या वापराचा अधिकाधिक वापर करण्याची क्षमता विकसीत होते. इतरत्र सहज न उपलब्ध होणाऱ्या ग्रंथाची प्रत इ स्वरुपात उपलब्ध होते. अध्ययनार्थींमध्ये शिकण्यासाठी प्रेरणा मिळते. मूक्त व दूरशिक्षणात आयसीटी केवळ अध्ययनार्थींसाठी उपयूक्त आहे असे नसून त्या संस्थेला देखिल प्रक्रीया करण्यासाठी व विद्यापीठ व अध्ययनार्थी ह्यांच्यातील सुसंवाद प्रक्रीया विकसीत करण्यासाठी मदत होते. सदरील पेपर मध्ये मूक्त व दूरशिक्षणातील डिजीटीलायझेशनचा वापर कशाप्रकारे केला जातो हे मांडलेले आहे.

संशोधन पेपर उद्दीष्टे :

1. मूक्त व दूरशिक्षणाची संकल्पना स्पष्ट करणे
2. मूक्त व दूरशिक्षणात डिजीटलायजेशन वापर कशा केला जातो ते मांडणे
3. मूक्त व दूरशिक्षणात आयसीटीचे महत्व स्पष्ट करणे

4. मूक्त व दूरशिक्षणातील डिजीटलायजेशनाची उपयूक्ततता सूचविणे

मूक्त व दूरशिक्षणाची संकल्पना :

मूक्त शिक्षणाची सुरुवात इंग्लंडच्या धर्तीवर सुरुवात करण्यात आली . भारता सारख्या अखंडप्राय भौगोलिक क्षेत्र असलेल्या व जेथे अद्यापही उच्च शिक्षणाच्या सुविधा सर्वत्र उपलब्ध नसल्यामुळे मूक्त शिक्षणाच्या माध्यमातून विद्यार्थी शिक्षण घेत आहे. मूक्त शिक्षण ही एक अध्ययन अध्यापनाची पध्दती आहे . २१ व्या शतकात भारताला महासत्ता बनविण्यात उच्च शिक्षणाचा वाटा महत्वाचा आहे . भारतीय शैक्षणिक धोरणाला उचित व योग्य ती गती देण्यासाठी मुक्त विद्यापीठ उपयुक्त होय. मूक्त व दूरशिक्षण हे सर्व अर्थाने मुक्त असते. ह्यामध्ये अभ्यासक्रम , परीक्षा , नियम , तासिका , शिक्षण , विद्यार्थी , सभा, कालावधी ह्या सर्वांवर कोणतेही बंधने नसतात. वंचिताबरोबरच ज्यांना उच्च शिक्षण घ्यावयाचे आहे ते या प्रवाहात सामिल होतात. भारतामध्ये १९७४ सालीच्या पार्थसारथीची समीती स्थापना मूक्त विद्यापीठाच्या संदर्भात केली होती. १९८० साली आंध्रप्रदेशात डॉ.बाबासाहेब आंबेडकर मूक्त विद्यापीठ स्थापन झाले . त्यानंतर इग्नू ,नवी दिल्ली येथे व पाचव्या क्रमांकाचे महाराष्ट्र राज्यात महाराष्ट्र विधीमंडळ कायद्याद्वारे यशवंतराव चव्हाण महाराष्ट्र मुक्त विद्यापीठ स्थापन झाले. आज रोजी देशामध्ये एकुण पंधरा मुक्त विद्यापीठे उच्च शिक्षणामध्ये कार्य करीत आहेत.

मूक्त विद्यापीठ व्याख्या :

जिथे संवाद आहे , खुली चर्चा आहे , भावनंची उत्कटा आहे , नि :पक्षपाती वातावरण आहे , स्वागत सभा , चळवळ संमेलन प्रेम ह्यांचे जीवन आहे ते म्हणजे मूक्त विद्यापीठ होय (मराठी विश्वकोश खंड १३). ज्या शिक्षण व्यवस्थेमध्ये व्यक्ती कोठेही आणि कोणत्याही परिस्थितीत राहत असली तरी आफल्या निवडीप्रमाणे अभ्यासक्रमात भाग घेवू शकते ते म्हणजे मूक्त शिक्षण होय.

मूक्त व दूर शिक्षणाची वैशिष्टे : स्वंयगतीनूसार शिक्षण , स्वंय अधययनावर भर , गरजांनूसार शिक्षण , अद्यायावत माहिती संप्रेषण तंत्रविज्ञानाचा वापर, उद्योगासारखी कार्यप्रणाली , अनेकविध शैक्षणिक साधनांचा वापर , लवचिकता इ. मूक्त शिक्षणाची वैशिष्ट असल्यामुळे अध्ययनार्थी त्याच्या गतीप्रमाणे , स्वंयअध्ययन स्वंयप्रेरणेने , स्वंयरुचीने व क्षमतेनूसार शिकतात. ह्या प्रणालीमध्ये अधिकत्तम शिक्षकांवर अवलंबून न राहता विद्यार्थी माहिती संप्रेषणाद्वारे वापर करु न त्यांच्या सोईनूसार त्यांच्या ठिकाणी हवी असेल तेव्हा शिकत असतात. मूक्त व दूरशिक्षणामध्ये अध्ययनाच्या विविध कार्यनिती आहेत . प्रकल्प पध्दती , व्यक्तिगत विकास योजना ,

समुपदेशन , सह अध्यायी गट , सहकार्यशिल अध्ययन , समस्यानिराकरण इ. सारख्या स्वंयअध्ययनाच्या कार्यनिती आहे.

मूक्त व दूर शिक्षणातील डिजीटायझेशन

- **ई – सुविधा :-**

ई-सुविधा द्वारे विद्यार्थी प्रत्यक्ष विद्यापीठाशी संपर्क साधू शकतात. इ सुविधा द्वारे प्रवेश अर्ज संबंधित माहिती पात्रता विद्यार्थ्यास प्रवेश प्रक्रीयापासून निकालापर्यंतची सर्व माहिती मिळू शकता त. ह्यात विद्यार्थाच्या विद्यापीठात प्रवेश घेतल्यानंतर प्रत्येक विद्यार्थ्याच्या ई सुविधांचा लाभ घेता येतो. ह्यात सुविधेमुळे विद्यार्थी शिक्षणक्रमा संबधिच्या वेगवेगळ्या करावयाच्या कृतीच्या वार्षिक माहिती वेळापत्रकाद्वारे मिळवितो. प्रामुख्याने प्रत्येक महिन्यात महत्वाच्या कृती वेळापत्रक विशेष नोंदविल्या जातात व विद्यार्थ्यास त्या ईमेल , संदेश, इ द्वारे कळविल्या जातात.ई सुविधेच्या माध्यमातून विद्यार्थी आलेल्या अडचणींचे निराकरण करू शकतो. मायग्रेशन , गुण पडताळणी, उत्तरपुस्तिकांचे पुनर्मुल्यांकन इ. सुविधांचा लाभ घेऊ शकतात. दूरशिक्षणातील विद्यार्थिनी प्रेरणा व कार्यात सातत्य ठेवण्याचे कार्य या ई सुविधच्या माध्यमातून केले जाते.

- **डिजीटल लायब्ररी:-**

अभ्यास करण्यासाठी पूर्वी विद्यार्थ्यांना ग्रंथालयात जाऊन पुस्तके शोधून माहिती मिळवावी लागे. तसेच बऱ्याच वेळा आवश्यक ती पुस्तके न मिळाल्यामुळे विद्यार्थ्याचा वेळ जात असे परंतू आज डिजीटल लायब्ररी मुळे विद्यार्थ्यास हवी ती पुस्तके हवी तेव्हा उपलब्ध होत आहे. दूरशिक्षण घेणाऱ्या विद्यार्थ्यांचे पुस्तक म्हणजेच शिक्षण होय. विद्यार्थी ई बूक सुविधेद्वारे विविध पुस्तके आपल्या मोबाईल किंवा संगणकावर वाचू शकतो. दुर्मिळ लेखकांच्या प्रती ग्रंथालयात उपलब्ध नसलेल्या सुद्धा ह्या ई-बूक सुविधेद्वारे विद्यार्थ्यांना मिळतात. ह्या ई-बूक वरील पुस्तके ही मोफत असल्यामुळे जर विद्यार्थ्यास वेळ नसल्यास ते डाऊनलोड करून त्याचा फायदा नंतर ते अभ्यास करतांना घेतात. अशावेळी त्यांना विविध बूक्स ,मासिके , जर्नल, ई.पुस्तकांच्या ई प्रति उपलब्ध होतात. त्यामुळे डिजीटल लायब्ररी मूक्त व दूर शिक्षणाध्ये अध्ययनर्थीस उपयुक्त ठरते. महागडी पुस्तके असे असतात की जे अध्ययनार्थी काही कारणामुळे, आ र्थिकतेमुळे विकत घेवू शकता नाही अशा वेळी डिजीटल लायब्ररी च्या माध्यमातून ते पूर्ण करतात .सोबतच संदर्भ अभ्यासासाठी देखिल डिजीटल लायब्ररीमुळे ही सुविधा उपलब्ध होते. संशोधन करण्यासाठी देखिल आवश्यक असणाऱ्या स्त्रोतासाठी उपयोगी आहे.

- **ऑनलाईन डिस्कशन फोरम :-**

शिक्षणापासून वंचित असलेल्या विद्यार्थ्यांसाठी मुक्त विद्यापीठांनी दूरशिक्षणा त ऑनलाईन डिस्कशन फोरम ही ऑनलाईन व ऑफलाईन ह्या दोन्हीप्रकारे सुविधा उपलब्ध करून दिलेली आहे. दूरशिक्षणाद्वारे शिक्षण घेणारा विद्यार्थी बाहेर गावातील सुद्धा असतात. तेव्हा त्यांना येणाऱ्या अडचणीसाठी त्यांना नेहमी विद्यापीठात प्रत्यक्ष येण्याची आवश्यकता नाही. त्यांना एखादी अडचण असल्यास मग ती प्रवेश प्रक्रिया संबंधी असो किंवा एखाद्या कोर्स संबंधी माहिती मिळण्याची असो. ऑनलाईन डिस्कशन फोरम द्वारे विद्यार्थी त्याची विचारणा करू शकतात. तसेच त्यांना एखाद्या बाबतीत प्रतिक्रिया द्यावयाची असल्यास विद्यार्थी ती नोंदवू शकतात. त्यां च्या अडचणीचे विद्यापीठ दखल घेवून लगेच त्या अडचणी सोडविण्याची प्रक्रिया ऑनलाईन पूर्ण केल्या जातात. प्रत्यक्ष व्यक्तीशी समोर नसतांनाही विद्यार्थ्याची परस्पर संवाद किंवा आंतरक्रिया घडवून येणे ऑनलाईन डिस्कशन फोरम द्वारे सोपे झाले आहे . यामुळे एकावेळी अनेक व्यक्ती एकाचवेळी जोडल्या जातात. ते ह्या मंचावर विषयानुरुप , अडचणीचे निकाकरण करण्यास मदत करतात.

- **वेब रेडिओ :-**

मूक्त व दूरशिक्षणात विद्यार्थ्यांना अभ्यासकेंद्रावर प्रत्यक्ष मार्गदर्शन , संमंत्रण केले जाते . परंतू अध्ययनार्थींना प्रत्यक्षात अभ्यास करतांना काही विशिष्ट अडचणी येतात. तेव्हा मात्र त्यांना प्रत्यक्ष समोर संमंत्रक असेलच असे नाही. अशावेळी मूक्त व दूरशिक्षणात कार्य क रणाऱ्या विविध संस्थेमध्ये रेडिओच्या माध्यमातून कमीत कमी खर्चामध्ये अधिकतम भारताच्या कानाकोपऱ्यामध्ये विद्यार्थांना शिकण्यास मदत म्हणून वेब रेडीओ मोलाचे ठरते. ह्याद्वारे तज्ज्ञ व्यक्तींचे व्याख्यान रेकॉ र्ड केले जातात. व अध्ययनार्थी त्याचा उपयोग अध्ययनासाठी करुन घेतात. मुक्त विद्यापीठात विद्यार्थ्यांना प्रवेश घेतलेल्या अभ्यासकेंद्रवर वेळोवेळी संपर्क सत्र होतात वर्ग तसेच एकाच वेळी हजारो विद्यार्थ्यांना वेब रेडीओ द्वारे तज्ञ व्यक्तीचे व्याख्यान ऐकण्याची संधी प्राप्त होते. विद्यार्थ्यांना विद्यापीठाशी निगडीत सर्व विषयावर वेगवेगळ्या तज्ञ व्यक्तीकडून मार्गदर्शन देण्याचे कार्य विद्यापीठ स्तरावर वेब रेडीओ द्वारे केले जाते. वेब रेडीओद्वारे कधी लाईव्ह तर कधी संग्रहीत केलेल व्याख्यानाचा अध्ययनार्थी लाभ घेवू शकतात.

- **लाईव्ह वेब कास्टींग :-**

मुक्त शिक्षणाच्या क्षेत्रातील विद्यार्थी डिजिटल साक्षर व स्मार्ट व्हावा ह्या हेतुने वेबकास्टींचा विद्यार्थ्यांना फायदा होतो. स्मार्ट फोन मध्ये यूटूबच्या माध्यमातून विविध संस्थेच्या वेबलिंकवर उपलब्ध असलेल्या कार्यक्रमाचे

प्रसारण विद्यार्थी त्याच्या मोबाईल पाहू शकतात.तसेच इतरही माहिती मिळविता येईल .विद्यापीठांतर्गत विविध कार्यक्रमांची प्रत्यक्ष उपस्थिती न राहता सुद्धा लाभ घेता येईल ह्यामध्ये विद्यार्थी विद्यापिठांतर्गत होणाऱ्या विविध व्याख्यान ,परीसंवाद ,चर्चासत्र सारख्यांच्या लाभ घेऊ शकतात. उदा. यशवंतराव चव्हाण महाराष्ट्र मुक्त विद्यापीठ नाशिक येथे २०१८ मध्ये झालेल्या इंद्रधनुष्य आंतरविद्यापिठीय इंद्रधनु ष्य कार्यक्रमाचे प्रसारण करण्यात आले होते. ह्याचा अनेक विद्यार्थ्यांनी व संस्थेनी व इतरांनी लाभ घेतला. हा कार्यक्रम इंटरनेटच्या साह्याने उपलब्ध करुन देण्यात आलेला होता. अशा कार्यक्रमाचा लाभ विद्यार्थ्यांना कार्यक्रमांना उपस्थित न राहता प्रत्यक्ष लाईव्ह कार्यक्रम पाहण्याची सोय ह्या उपलब्ध झाली .

- **मूल्यमापनात डिजीटायझेशन** :

मूल्यमापन ही विद्यार्थ्याच्या शिक्षणातील महत्वाची प्रक्रीया आहे. मूल्यमापनातून विद्यार्थ्याने क्षमता कितपत मिळविलेल्या ह्याचे मापन केले जाते . मूल्यमापनामध्ये विद्यार्थ्याच्या अंतर्गत स्वाध्याय , प्रात्यक्षिके , परीसवांद, प्रकल्प ह्यासारखे सातत्यपुर्ण मूल्यमापन केले जाते . व अंतिम लेखी परीक्षा आयोजीत केली जाते. हल्ली माहिती संप्रेषणाचा सर्वत्र वापर होत आहे. मूक्त व दूरशिक्षणामधील कार्य करणाऱ्या विद्यापीठामध्ये देखिल वापर केला जातो. परीक्षेतील महत्वाच्या तीन पायऱ्यामध्ये प्री परीक्षा , परीक्षा कार्य व परीक्षेनंतरच्या विविध टप्यावर डिजीटायझेशन झाल्यामुळे परीक्षा पध्दतीमध्ये सुकरता येण्यास मदत होते. विद्यापीठांना देखिल परीक्षा आयोजनामध्ये आयसीटीचा प्रभावी वापर केला आहे. प्रश्नपत्रिकामधील गोपनियता , निकालप्रक्रीया मध्ये दिरंगाई दूर करणे व वेळेवर निकाल लावण्यासाठी मूल्यमापन प्रक्रीयामध्ये ई मूल्यमापन सारख्या बाबी उपयोगी ठरु लागल्या आहेत. परीक्षा पारदर्शक व गुणात्मक होण्यासाठी विविध साधनांचा वापर उदा. सीसीटीव्ही वापर करणे, बायोमॅट्रीक , स्कॅनींग इ. सारख्या उपाययोजना केल्या जात आहे. डिजीटायझेशनमुळे मुक्त व दूरशिक्षणात मूल्यमापनातमध्ये गुणवत्ता निर्माण करण्यास मदत होत आहे. उदा. यचममुवि येथील परीक्षापध्दतीमध्ये वापर होत असलेला डिजीटायझेशन सांगता येईल.

- **करीअर निवडीच्या संधी :-**

मुक्त विद्यापीठाद्वारे केवळ शिक्षणच विद्यार्थाना दिले जात नाही तर त्यांच्या शिक्षणाच्या निकषानुसार त्यांना सरकारी आणि खाजगी क्षेत्रात उपलब्ध असलेल्या नोकऱ्याची माहिती देखील लिंकद्वारे विद्यापीठाद्वारे दिली जाते. तसेच विद्यार्थ्यांना त्याचे करीअर विकसित करण्यासाठी देखील Carrer For you ह्यासारख्या अपद्वारे

मार्गदर्शन केले जाते. मुक्त विद्यापीठातील विद्यार्थ्यांना केवळ शिक्षणच न घेता त्याने आपले करीअर घडवून जीवनात यशस्वी व्हावे ह्या दृष्टीने ह्या माहिती संप्रेषण तंत्रविज्ञाना चा फायदा विद्यार्थांना होतो. मूक्त व दूरशिक्षणातील विद्यार्थ्यांना पारंपारिक विद्यार्थ्याप्रमाणे करीअरच्या संधी उपलब्ध व्हाव्यात ह्यासाठी या माध्यमातून त्यांना जागृक केले जाते. वेगवेगळ्या करीअरविषयक माहिती दिलेली असते.

निष्कर्ष :

1. मूक्त व दूरशिक्षणात डिजीटायझेशन झाल्यामुळे वेळ व पैशाची बचत होते.
2. मूक्त व दूरशिक्षणात आयसीटीच्या माध्यमातून तात्काळ आतंरक्रीया साधता येते.
3. मूक्त व दूरशिक्षणात आयसीटीच्या डिजीटलायझेशनमुळे अध्ययनार्थींना येणाऱ्या अडचणीवर मात करुन निराकरण करुन घेता येते.
4. मूक्त व दूरशिक्षणात डिजीटलायजेशनमुळे अध्ययनार्थींना बहुमाध्यंमाच्या वापराचा अधिकाधिक वापर करण्याची क्षमता विकसीत होते.
5. मूक्त व दूरशिक्षणात आयसीटीच्या वापरामुळे अध्ययनार्थींना हवी असलेली ग्रंथाची प्रत इ स्वरुपात उपलब्ध होते.
6. मूक्त व दूरशिक्षणात आयसीटीमुळे दूर असलेल्या प्रवाह्पासून दूर राहीलेल्या अध्ययनार्थींसाठी शिकण्यासाठी प्रेरणा मिळण्यास मदत होते.
7. मूक्त व दूरशिक्षणात आयसीटीच्या वापरामुळे शिक्षणक्रम पूर्ण करुन नविन करीअरच्या संधी देखिल माहिती होतात.
8. मूक्त व दूरशिक्षणात आयसीटी केवळ अध्ययनार्थींसाठी व संस्थेला देखिल प्रक्रीया करण्यासाठी व सुसंवाद विकसीत करण्यासाठी मदत होते.

संदर्भग्रंथ :

कुलकर्णी विश्वंभर , भिंताडे विनायक , (२००६), भारताचा आधुनिक शिक्षण : समस्या आणि उपाय : विद्या प्रकाशन पुणे.

निताळे विनोद , भटकर सुधिर , सोरडे गोपी (२०१७), माध्यमे आणि सामाजिक बदल : अथर्व प्रकाशन, धुळे

भारतीय शिक्षण मासिक (नोव्हे – डिसें २०१८) , स्वायत्त व मुक्त शिक्षण : ऑल प्रिंट्स ,मुंबई

यशवंतराव चव्हाण महाराष्ट्र मुक्त विद्यापीठ नाशिक वेबसाईट.

पवार एम.डी (२००८) , भारतीय शिक्षण प्रणालीचा विकास : नित्यनुतन प्रकाशन पुणे.

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शैक्षणिक क्रांतीचा नवा अध्याय : स्वयम पोर्टल

प्रा . डॉ . कैलास खोंडे (Pg. 283-286)

असि.प्रोफेसर, म वि प्र समाज, शिक्षणशास्त्र महाविद्यालय, नाशिक

प्रास्ताविक :

21 वे शतक म्हणजेच बदलाचे शतक आहे . रोज नवनवीन शोध लागत आहेत व जनता देखील सहज ते अंगीकारत आहे .आज असे कोणतेच क्षेत्र शिल्लक राहिले नाही की त्यात तंत्रज्ञानाने प्रवेश केला नाही , मग ते कृषी , बँकिंग , औद्योगिक , संरक्षण वा शैक्षणिक असो प्रत्येक क्षेत्र तंत्रज्ञाननमय झाले आहे. शिक्षणात तर आमुलाग्र बदलांना सुरुवात झाली आहे .औपचारिक शिक्षण , दूर शिक्षण , बहिस्थ शिक्षण अशा सर्वच प्रकारच्या शिक्षणात तंत्रज्ञानाने क्रांती केली आहे . औपचारिक शिक्षणाची सर्वदूर पोहोचण्याची मर्यादा लक्षात घेता तंत्रज्ञानाच्या माध्यमातून घराघरात शिक्षण पोहोचवणे शक्य झाले आहे, अशा स्वयम पोर्टल विषयी काही प्रश्नांच्या माध्यमातून आज आपण माहिती घेणार आहोत .

स्वयम काय आहे ?

स्वयम म्हणजेच SWAYAM – Study Webs of Active learning for Young Aspiring Minds होय . स्वयम पोर्टलवर भारतातील मोठ्या प्रमाणात online open कोर्स उपलब्ध आहेत .ज्यांना MOOC (Massive online open course) नावानेही ओळखले जाते . ज्याची निर्मिती भारतातील नामवंत संस्थांच्या शिक्षकांकडून सरकारने केली आहे , त्यामुळे आजीवन शिक्षणाची चांगली व दर्जेदार संधी मोफत स्वरुपात प्राप्त झाली आहे .

रजिस्ट्रेशन कोण करू शकते ?

जगातील कोणत्याही वयोगटातील कोणतीही व्यक्ती स्वयमसाठी रजिस्ट्रेशन करू शकते व आपला कोर्स पूर्ण करू शकते . शिवाय यासाठी कोणतेही शुल्क आकारले जात नाही . रजिस्ट्रेशनसाठी http://swayam.gov.in या वेब साईट वर जावून आपण आपला लोगिन आय डी तयार करून कोण्याही अभ्यासक्रमाला प्रवेश घेवू शकाल .

स्वयम वरील अभ्यास साहित्य कोण पुरवितो ?

भारताच्या मानव संसाधन विकास मंत्रालयाने काही समन्वयकांची नियुक्ती केलेली आहे , ते भारतातील नामवंत संस्था जसे की विद्यापीठ अनुदान आयोग ,इंदिरा गांधी राष्ट्रीय मुक्त विद्यापीठ ,एन पी टी इ एल ,सी इ सी ,एन सी इ आर टी ,एन आय ओ एस ,आय आय एम बी ,एन आय टी टी आर ,ए आय सी टी इ अशा संस्थांमधील नामवंत व उच्च विद्याविभूषित शिक्षक आहेत ते स्वयं वर अभ्यासपूर्ण माहिती पुरवत असतात .

स्वयम वरील अभ्यास साहित्य कशा प्रकारचे असते ?

स्वयम वरील अभ्यास साहित्य चार प्रकारचे असते .1) उच्च तंत्रज्ञानाचा उपयोग करून बहुमाध्यामाच्या सहाय्याने काही व्हिडीओ असतात . 2) खास करून तयार केलेले डाऊनलोड होणारे अथवा प्रिंटेड साहित्य उपलब्ध असते . 3) ऑनलाईन चाचणी व प्रश्नावली असतात त्याच्या माध्यमातून आपण स्वतःचे मूल्यमापन करू शकतो .

स्वयम अभ्यासक्रमाला काही फी आकारली जाते का ?

स्वयम वरील अभ्यासक्रम पूर्णतः मोफत स्वरूपाचे आहेत , अभ्यासक्रम यशस्वी पूर्ण केल्यावर यावर आधारित काही स्वाध्याय व चाचणी पास करून आपणास प्रमाणपत्र प्राप्त करता येते .त्यासाठी श्रेणी पद्धतीने मूल्यमापन केले जाते .

स्वयमच्या MOOCs माध्यमातून केलेल्या अभ्यासक्रमास प्रमाणपत्र व श्रेयांक प्राप्त होतात का ?

स्वयम वरील सर्व अभ्यासक्रमांना यशस्वीरीत्या पूर्ण केल्यानंतर विद्यार्थ्याला श्रेयांक व प्रमाणपत्र प्राप्त होते मात्र संबंधित अभ्यासक्रमासाठी जे स्वाध्याय व प्रात्यक्षिक दिले असते ते आपणास पूर्ण केल्यावरच ज्या संस्थेचा कोर्से करत आहोत त्या संस्थेचे online प्रमाणपत्र अदा केले जाते .

स्वयं वरील अभ्यासक्रमांना सरकारने मान्यता दिली असल्याचा काही कायदा केला आहे का ?

होय, स्वयं वरील अभ्यासक्रमांना सरकारने मान्यता दिली आहे . विद्यापीठ अनुदान आयोगाने सन २०१६ मध्ये " क्रेडीट फ्रेमवर्क फोर ऑनलाईन लर्निंग कोर्सेस थ्रू स्वयम " असा कायदा करून विद्यार्थ्यांनी स्वयम द्वारे प्राप्त केलेल्या प्रमाणपत्रांना मान्यता दिली आहे .

स्वयम पोर्टल चा हेतू काय आहे ?

भारत सरकारचे असे ध्येय आहे की , भारतातील सध्याचे ग्रॉस इंरोल्मेंट रेशिओ चे प्रमाण 20 टक्के आहे ते प्रमाण सन २०२० पर्यंत ३० टक्क्यांवर अपेक्षित आहे ,त्यासाठी माहिती संप्रेषण तंत्रज्ञानातून स्वयम सारख्या कोर्सेस च्या माध्यमातून देशाचा प्रयत्न आहे .

भारतासारख्या मोठ्या देशाला अनेक भौगोलिक मर्यादा आहेत ,सर्वच विद्यार्थी उच्च दर्जाप्राप्त शिक्षण संस्थांमध्ये शिक्षण घेवू शकत नाहीत किंवा इच्छा असूनही त्या संस्थेत मेरीटमुळे नंबर लागत नाही ,अशा सर्व विद्यार्थ्यांच्या स्वयम मुले नक्कीच आशा पल्लवित झाल्या आहेत .आता आय आय टी ,आय आय एम ,एन सी इ आर टी ,तसेच भारतातील अग्रगण्य विद्यापीठे व नामांकित महाविद्यालयामध्येही सहज प्रवेश मिळू शकणार आहे ,इयत्ता 9 पासून ते महाविद्यालयीन शिक्षणापर्यंत सर्व शाखांचे सर्व प्रकारचे अभ्यासक्रम उपलब्ध आहेत .

स्वयम पोर्टलची उद्दिष्टे कोणती आहेत ?

1 . माध्यमिक स्तरापासून ते पदव्युत्तर पदवीपर्यंत सर्व शाखांचे प्रोग्राम तयार करणे .

2. एन एम इ आय सी टी अर्थातच माहिती संप्रेषण तंत्रज्ञानाद्वारे शिक्षण या संकल्पनेत असणारे सर्व कार्यक्रम स्वयम वर उपलब्ध करून देणे .

3. एकाचवेळी हजारो अभ्यासक्रम राबवून जास्तीत जास्त विद्यार्थ्यांना शिक्षणाच्या अद्यावत प्रवाहात आणणे .

4. एकाचवेळी जगभरातील दहा लाख लोक अभ्यास करू शकतील अशी online सुविधा प्राप्त करून देणे .

5. यशस्वीरीत्या अभ्यासक्रम पूर्ण केलेल्या विद्यार्थ्यांना प्रमाणपत्रे वाटप करणे .

6. निवड आधारित श्रेयांक प्रणाली पद्धती संदर्भात (CBCS) महाविद्यालयांना अवगत करणे .

7. भारतीय नागरिकांच्या भारतात राहणारे व अनिवासी भारतीय अशा सर्वांना आजीवन शिक्षणाच्या प्रवाहात आणणे व त्यांना सर्व प्रकारचे शिक्षण घरबसल्या पुरविणे .

8. स्वयम वरील सर्व साहित्य जे बाल अध्ययन केंद्रित असेल तसेच प्रौढ अध्ययन केंद्रित देखील असेल.

किती कोर्सेस सुरु आहेत ?

भारतातील सहा नामवंत संस्थांचे जसे की, एन पी टी इ एल ,सी इ सी ,एन सी इ आर टी ,एन आय ओ २४७ कोर्सेस आजमितीला सुरु आहेत ,त्यात सातत्याने वाढ होताच आहे .

स्वयम वर काही कौशल्य प्रधान कोर्सेस उपलब्ध आहेत का ?

होय, माध्यमिक शिक्षणाशी निगडीत काही ,तसेच काही अभियांत्रिकी शाखेशी निगडीत कौशल्यप्रधान अभ्यासक्रम उपलब्ध आहेत व ते संबंधित विभागाशी जोडलेले आहेत .

समारोप : अशा प्रकारे भारतातील व जगातील सर्व भारतीयांसाठी आजीवन शिक्षणाचे स्वयम च्या रूपाने नवे द्वार खुले झाले आहे .ज्याचा वापर विद्यार्थी ,शिक्षक , प्राध्यापक ,मुख्याध्यापक , प्राचार्य ,पालक व घरी राहून आपला व्यवसाय सांभाळून आपले शिक्षण पूर्ण करू शकतात .शिवाय ज्या शिक्षक व प्राध्यापकांना सेवांतर्गत प्रशिक्षणाची गरज असते ते देखील घरबसल्या उपलब्ध झाले आहे .

संदर्भ :

http://swayam.gov.in

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इमपॅक्ट ऑफ डिजीटल लर्नींग इन एज्युकेशन

डॉ. एम. ए. भदाणे (Pg. 287-290)

एम. एस. सी. पीएच. डी.

श्रीमती वैशाली सूर्यवंशी

संशोधक, मार्गदर्शक, म. वि .प्र. संस्थेचे कॉलेज ऑफ एज्युकेशन व रिसर्च सेंटर, नाशिक

1) प्रस्तावना : शिक्षण म्हणजे ज्ञान. शिक्षणाची प्रक्रीयाही अनादी काळापासून (Time Immemorial) चालत आली आहे. शिक्षणात दोन व्यक्तींचा समावेश असतो. पहिला शिकवणारा त्यालाच आपण गुरू अथवा शिक्षक म्हणतो व दुसरा त्याला, शिकणारा अथवा विद्यार्थी असे म्हणतो.

प्रसिद्ध आफ्रीकन नेते नेल्सन मंडेला यांनी म्हटले आहे की, "Education is most powerful weapon which you can use to change the world."

तसेच प्रसिद्ध शिक्षणतज्ञ अलबर्ट फ्रिनस्टीन यांनी सुद्धा असे लिूहन ठेवले आहे की, Education is not only learning of the facts, but it is a traing of mind.

व्रील दोघांचे मतानुसार दोघांनी शिक्षणाचे अन्यन्न साधारण महत्व अधोरेखीत केलेले आहे. त्यानंतर आपण शिक्षण आणि शिक्षण पद्धती यात कशाप्रकारे स्थितंतरे घडत गेली व आधुनीक युगांत घडत आहेत. याचा इतिहास मोठा रंजक आहे.

2) प्राचिन काल : आपण जर इतिहासाच्या मागोवा घेतला तर आपणास असे दिसून येईल की, पुर्वीच्या काळात ''गुरूकुल शिक्षण'' पद्धत अस्तीत्वात होती. गुरूकुल पद्धतीत पुर्वीचे ऋषीमुनी जंगलांत तपश्चयज्ञ करत असत तेथेच ते राजघराण्यातल्या राजपुत्रांना किंवा इतर तत्सम व्यक्तींना शिक्षण घेण्यासाठी त्या त्या गुरूकुलांत पाठवले जात असे. सदर गुरूकुल पद्धतीत ऋषीमुनी अशा राजपुत्रांना काही कालावधीत आश्रमांत ठेऊन घेत असत व त्यांना तेथे धर्नुविद्या, अश्वरोहन, तलवारबाजी इत्यादींचे ज्ञान देत असत. तसेच त्यांना व्यवहार चतुर्य, राज धर्माचे पालन कसे करावे, आदर्श राजा कसा असावा आणि आदर्श प्रशासन कसे असावे इत्यादींचे शिक्षण देऊन त्यांना त्यात पारंगत करून काही

कालावधीत परत पाठवून देत असत. उदा. दशरथ राजांनी त्यांची दोन्ही मुले राम आणि लक्ष्मण यांना गुरू वशिष्ट यांचेकडे धर्नुविद्येत पारंगत होण्यासाठी पाठवले होते असे दाखले आपणास पाहायला मिळतात. अशा गुरूकुलांत शिक्षण घेतल्यामुळे चरा महा आदर्श राजा होऊन गेला. आजच्या आधुनीक युगांतसुद्धा "रामराज्य'' ही संकल्पना, आधुनीक युगांत देखील आजच्या शासन कर्त्यांना मार्गदर्शक ठरलेली आहे.

आधुनीक युग :आधुनीक युगांत शिक्षण पद्धतीत अमुलाग्र बदल सातत्याने घडत आहेत. उदा. पुर्वी विद्यार्थींना शिकवण्यासाठी खडू फळा व डस्टर इत्यादी साधनांचा वापर करावा लागत असे. आधुनीक युगांत खडू, फळा व डस्टर इत्यादी साहित्य/उपकरणे कधीच इतिहास जमा झाली असून, त्याची जागा मोबाईल ॲप, इंटनेट, लॅपटॉप ई–मेल, फेसबुक, मोबाईल ॲप व कॅलक्युलेटर इत्यादी डिजीटल टुल्सनी घेतली असून सध्याचा विद्यार्था व शिक्षक या डिजीटल टूल्सचा वापर करून शिक्षण घेत आहेत. त्यामुळे आधुनीक युगांत हजारो विद्यार्थी व शिक्षक वेगवेगळ्या वेबसाईटना भेट देऊन तेथील माहिती उपलब्ध झाल्यामुळे त्यांच्या संशोधन प्रकल्पात तसेच Ph.D. चा अभ्यास सक्षमपणे करतांना दिसतात. एकच क्लीकवर त्यांना हवी ती माहीती व हव्या तेवढ्या कॉपीज काढता येतात. उदा. पुर्वा Print Textbook पद्धतीत खुप वेळ वाया जात होता एखाद्या प्रिंट टेक्स्ट बुकीच्या कॉपी काढतांना काही मर्यादा होत्या. परंतू डिजीटल टूलचा वापरामुळे आता त्यासाठी वेळ लागत नाही व फार शारीरीक श्रम इत्यादीची आवश्यकता नाही. क्षणार्धात तुम्हाला हव्या तेवढ्या कॉपीज मिळू शकतात व तेही कोणतेही शारीरीक श्रम न करता.

यानंतर आपण आता डिजीटल टूल्स वापरामुळे विविध शैक्षणीक क्षेत्रांत काय बदल घडून आलेत त्याचा थोडक्यांत आढावा घेऊ!

3) विज्ञान व तंत्रज्ञान :विज्ञान व तंत्रज्ञान क्षेत्रांत संगणकी करणामुळे किंवा विविध डिजीटल टूलस्चा वापर केल्यामुळे क्रांती घडून आली आहे. विज्ञान आणि तंत्रज्ञान क्षेत्रात आता मानव गगणाला गवसणी घालतांना दिसतो. अवकाशात वेगवेगळा उपग्रह पाठऊन त्यातुन तो चंद्रावरी लहवा, पाणी व जिवसृष्ठी व भ्पृष्ठ इत्यादीचा अभ्यास करून तेथे मानवी वस्ती स्थापन करणे शक्य आहे का? इत्यादींचा अभ्यास करत आहे.

त्सेच मंगळावरचाही अभ्यास करून आता तेथील वातावरण, हवा, पाणी, भ्पृष्ठ व जिवसृष्ठी इत्यादीचा अभ्यास करून तेथे मानवी वस्ती स्थापीत करणे शक्य आहे का? यांची

खात्री करून घेत आहे. चंद्र, मंगळ यांच्या संशोधनानंतर मानवाने आता डिजीटल टुल्सचा व तंत्रज्ञानाचा वापर करून सुर्ययान तयार करून सुर्यावरील वातावरण हवा, पाणी, भुपृष्ठ, जिवसृष्ठी, जमीन इत्यादींचा अभ्यास करणेची मोहीम हाती घेतली आहे. थोडक्यात मानवाने डिजीटल टूलचा व तंत्रज्ञानाचा वापर करून प्रथम अशक्य प्राय वाटणाऱ्या गोष्टी आता प्रत्यक्षांत पहावयास मिळतात.

आणखी दुसरे उदाहरण देता येईल ते असे की, आपले तत्कालीन राष्ट्रपती अब्दुल कलाम हे जगप्रसिद्ध शास्त्रज्ञ होते. त्यांनी अनेक डिजीटल साधने व तंत्रज्ञान यांचा वापरून करून शक्तीशाली मिसाईल्स भारतासाठी तयार केलीत. त्यामुळे त्यांना" मिसाईलमेन'' असे संबोधीत असे.

गणीत :गणीतीय सिद्धांत काढण्यासाठी डिजीटल टूल्सचा वापर करून आपण गणीतीय सिद्धांत मांडू शकतो.

उदा : गणीत त "अपुर्व'' यांनी पॉलीमॅथ प्रकल्पाचे मालीकेत चौदावा प्रकल्प पूर्ण केला तो प्रकल्प हा बंगलोरच्या इंडीयन इंस्टीट्युट ऑफ सायन्स या संस्थेत सुरू आहे.

अपुर्व या गणीततज्ञान एका प्रश्नातुन व ते सोडवण्यात नाविन्यपूर्ण योगदान दिले. संगणकाचा वापर करून गणितीय सिद्धांत कसे सिद्ध करावेत याबद्दल त्यांचे संशोधन सुरू आहे.

तसेच याच बंगलोरमधील दुसरे गणीत तज्ञ सिद्धार्थ यांनी सुद्धा शंभर वेगवेगळ्या शब्दांचे कमीत कमी मुल्य किती असेल? हे संगणकाच्या मदतीने शोधायला सुरवात कली. प्रत्येक शब्दाबद्दल त्याने अनेक प्रकारची माहिती धुंडाळत व अशा माहीतीची शिस्त तर मांडणी करून अशा शब्दांचे नऊ दशांश मुल्य असू शकेल असा निष्कर्ष काढला. थोडक्यांत डिजीटल टूलस् अथवा संगणीकरण व उपकरणे इत्यादीतुन गणित सारख्या क्लीस्ट विषयांत सुद्धा कसा फायदा होतो यावरून हे दिसून येते. आता तर डिजीटल टूल वापरून मानव भकंप, त्सुनामी इत्यादींचे ज्ञान अगोदर मिळवतो व त्याला खबरदारीचे उपाय काय करावेत याच्या सुचना अगोदरच मिळालेने त्यावर उपाययोजना करणे सोपे झाले आहे.

दुसरे आणखी असे सांगता येईल को सरकारला या माहितीचा उपयोग करून शहरांतील अतिक्रमण, जमीनीचे हिस्से, शेताच्या अथवा जमीनीच्या व गावठाणातील

सिमासिद्ध करणे शक्य झाले आहे त्यामुळे सरकारची या कामीवेळ, खर्च, शारीरीक कष्ठ इत्यादीची आता गरज उरलेली नाही.

निष्कर्ष :

1) आजचा विद्यार्थी संगणकाचा वापर करून वर्कलोड व वर्कफोर्स मध्ये स्वतःचे स्थान निर्माण करू शकतो.
2) त्यासाठी क्लासरूम मधील शिक्षक व विद्यार्थ्यांना मोठ्या प्रमाणांत संगणक लॅपटॉप ई–मेल, इंटरनेट इत्यादी उपकरणांचा सेवा उपलब्ध करून देणे अत्यंत गरजेचे आहे.
3) शिक्षणासाठी आता विद्यार्थींना क्लास रूम मध्येच शिक्षण घेणे बंधनकारक नाही. डिजीटल टुल्सचा वापर करून तो त्यांच्या शिक्षकाशी त्वरीत संपर्क साधुन त्याला हवी असलेली माहिती शिक्षकाकडून प्राप्त करू शकतो.
4) पालकांना त्यांच्या पालकाची शैक्षणीक प्रगती संबंधीत शाळेतुन प्राप्त करता येते.
5) विद्यार्थी ऑनलाईन इंस्ट्रक्शन प्राप्त करू शकतो.
6) विद्यार्थी त्याला हवे असलेले ज्ञान वेगवेगळ्या शिक्षण तज्ञाकडून प्राप्त करू शकतो. येवढेच काय इतर देशातून सुद्धा तो विनाविलंब ज्ञान प्राप्त करू शकतो.
7) वेळेची बचत होते व हव्या तेवढ्या कॉपीज काढता येतात. कोणतेही शारीरीक श्रम करावे लागत नाहीत.

वरील प्रमाणे डिजीटल शिक्षणाचे फायदे असल्यामुळे आजचा शिक्षक व विद्यार्थी मोठ्या प्रमाणांत डिजीटल टुल्सचा वापर करून शिक्षण घेतांना दिसतो. त्यामुळे आमच्या देशातील विद्यार्थी कुठल्या देशातील विद्यार्थ्यांत कमी पडत नाहीत उलट इतर देशातील विद्यार्थ्यांमध्ये उजवाच दिसून येतो. उदा. भारताने जगातील बहुतेक देशांना डॉक्टर्स व इंजीनिअर्स पुरवलेले आहेत ही भारतास भूषण वह बाब आहे.

संदर्भ :

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How Learning Contributes to deeper learning by Jom Vander Ark Carri Schneider.
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Scholarly Research Journal for Interdisciplinary Studies,
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PEER REVIEWED JOURNAL, NOV-DEC, 2018, VOL- 6/49

जिल्हा परिषद प्राथमिक शाळेतील शाळा बाह्य व स्थलांतरीत मुलांसाठी तंत्रज्ञानाचा उपयोग एक शोध

श्री. गोकुळदास अरविंद वाघ (Pg. 291-295)

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प्रस्तावना :

आज सर्वत्र संगणक व माहिती तंत्रज्ञानाचा मोठ्या प्रमाणावर वापर केला जातो. शिक्षण क्षेत्रात अनेक समस्या आहेत आणि त्यातील स्थलांतरीत व शाळाबाह्य मुले ही एक मोठी समस्या आहे. आज प्राथमिक स्तरावर स्मार्ट टी.व्ही., प्रोजेक्टर, ई लर्निंग, चलतचित्रे, व्हिडीओ यांचा उपयोग करुन स्थलांतरील व शाळाबाह्य मुलांना शाळेत आणून टिकवून ठेवणे यासाठी माहिती तंत्रज्ञान, विविध शैक्षणिक साहित्याचा वापर करुन शाळा बाह्य व स्थलांतरील मुले शाळेत टिकवून ठेवण्यास मदत होत असल्याने प्रस्तुत संशोधन हाती घेण्यात आले आहे.

शोध निबंधाचे शीर्शक :

जिल्हा परिषद प्राथमिक शाळेतील शाळा बाह्य व स्थलांतरीत मुलांसाठी तंत्रज्ञानाचा उपयोग एक शोध.

उद्दिश्ट्ये :

1. शाळाबाह्य व स्थलांतरीत मुलांचा शोध घेउन मुलांना प्रवाहात आणणे.
2. शाळाबाह्य व स्थलांतरीत मुलांना शिक्षणाच्या प्रवाहात टिकवून ठेवणे.
3. शाळाबाह्य व स्थलांतरीत मुलांसाठी तंत्रज्ञानाचा वापर करुन आवड निर्माण करणे.
4. तंत्रज्ञानाच्या मदतीने स्थलांतरीत व शाळाबाह्य मुलांमध्ये गुणवत्ता निर्माण करणे.

विषयाची गरज व महत्त्व :

गरज :

स्थलांतरीत व शाळाबाह्य मुले ही शिक्षणक्षेत्रात मोठी समस्या आहे. स्थलांतरीत व भााळाबाह्य मुलांना शिक्षणाच्या मुलांना सामिल करुन घेतल्याशिवाय शिक्षणाचे सार्वत्रिकीकरण व आरटीई 2009 शिक्षण हक्क कायद्याची अम्मलबजावणी होवू भाकत नाही. या विद्यार्थ्यांना भाालेय प्रवाहात आणून आधुनिक ज्ञानाशी जोडण्यासाठी तंत्रज्ञानाचा वापर आवश्यक आहे. यासाठी आवश्यक असणारे साहित्य उपलब्ध असणे गरजेचे आहे. यासाठी तंत्रज्ञानाच्या साधनांचा सुनियोजीत वापर करुन अध्ययन व्हाव व त्याचा प्रत्यक्ष गुणवत्तेशी संबंध येवून स्थलांतरीत व भााळाबाह्य मुलांना शालेय प्रवाहात आणावे या हेतूने स्थलांतरीत व शाळाबाह्य या मुलांना इंटरनेट, स्मार्ट टीव्ही, प्रोजेक्टर, ईलर्निंग, विविध ॲपच्या मदतीने मार्गदर्शन करुन त्यांच्यात गुणवत्ता निर्माण करणे गरजेचे आहे.

महत्त्व :

स्थलांतरीत व शाळाबाह्य मुलांना दाखल करुन त्यांच्यात शिक्षणाविशयी व तंत्रज्ञानाविशयी आवड निर्माण होण्यासाठी स्मार्ट टीव्ही प्रोजेक्टर, स्मार्ट फोन यांचा उपयोग करुन कार्टून, बडबडगीते, बालगीते दाखविणे. भाालेय विशयांशी संबंधित ध्वनी चित्रफिती व रेडिओवरुन प्रसारित केले जाणारे कार्यक्रम यांच्या सहाय्याने वर्गात अध्यापन करणे. शाळेमध्ये शिक्षणाला पूरक असे कार्यक्रम प्रसारीत करणे. या कार्यक्रमांमुळे शिक्षकांना तो विशय अधिक चांगल्या रितीने अध्यापन करण्यास मदत होत असते. तसेच मुलांनाही तो विशय समजून घेणे सोपे जाते. अध्यापनात मुलांना प्रत्यक्ष कृती करायला लावणे. यामुळे मुलांना शिक्षणात आनंद निर्माण होवून तंत्रज्ञानाची ही गोडी निर्माण होते. संगणक व ईसाहित्य, माहिती, तंत्रज्ञान यांचा वापर करुन मुलांचे मनोरंजन करुन शालेय प्रवाहात टीकवून ठेवता येते. त्यांच्यात गुणवत्ता निर्माण करण्यास माहिती तंत्रज्ञान, साहित्य मोलाची मदत करते.

संशोधनाची व्याप्ती व मर्यादा :

व्याप्ती :

प्रस्तुत संशोधनात स्थलांतरीत व शाळाबाह्य मुले यांचा भाोध घेणे अतिशय गरजेचे आहे. स्थलांतरीत व शाळाबाह्य मुलांना तंत्रज्ञानाचा वापर करुन शिकविल्याने झालेला परिणाम अभ्यासणे गरजेचे आहे. हे संशोधन महाराश्ट्रातील स्थलांतरीत व शाळाबाह्य मुलांसाठी लागू आहे. हे संशोधन संपूर्ण महाराश्ट्रातील स्थलांतरीत व शाळाबाह्य मुलांसाठी गरजेचे आहे.

मर्यादा :

1. प्रस्तुत संशोधन हे नाशिक जिल्ह्यातील येवला तालुक्यातील स्थलांतरीत व शाळाबाह्य मुलांपुरते मर्यादित आहे.
2. प्रस्तुत संशोधन येवला तालुक्यातील काही स्थलांतरीत व शाळाबाह्य मुलांपुरते मर्यादित आहे.

स्थलांतरीत साहित्य व संशाधनाचा आढावा :

संबंधित साहित्य :

1. स्थलांतरीत व शाळाबाह्य मुलांसाठी विविध दैनिकातून प्रसिध्द होणारे लेख.
2. विविध मासिके, शैक्षणिक वेबसाईट सूचनात्मक साधने – मेडियाचे माध्यम.

संशाधनाचा आढावा :

स्थलांतरीत व शाळाबाह्य मुले यांचा शोध घेवून त्यांना शाळेत दाखल करणे. स्थलांतरीत व शाळाबाह्य मुलांना तंत्रज्ञानाचा वापर करुन शिकविल्याने झालेला परिणाम अभ्यासणे. या संबंधिचे संशोधन आहे. स्मार्ट टीव्ही, स्मार्ट फोन, ई–लर्निंग, प्रोजेक्टर इ. चा अध्यापनात उपयोग केल्याने स्थलांतरीत व भााळाबाह्य मुलांमध्ये भााळेविशयी आवड निर्माण झाल्याचे दिसत आहे.

तसेच तंत्रज्ञानाचा उपयोग केल्यामुळे स्थलांतरीत व शाळाबाह्य मुलांना संकल्पना, समजावून देणे सोपे होते.

एकत्रिकरण साधने :

1. विविध / अनेक शाळेतील शिक्षकांना प्रश्न विचारुन माहिती संकलित करण्यात आली.
2. अनेक शिक्षकांशी चर्चा करुन स्थलांतरीत व शाळाबाह्य मुलांची माहिती संकलित करण्यात आली.
3. मुलाखत.

न्यादर्श :

प्रस्तुत संशोधन हे जिल्हा परिशद प्राथमिक शाळा अंगणगांव येथे करण्यात आले आहे. प्रथम शाळाबाह्य व स्थलांतरीत मुलांचे सर्वे करुन भाोध घेतला. त्या मुलांना शाळेत दाखल करुन घेतले.

स्थलांतरीत व शाळाबाह्य मुलांच्या अध्यापनात स्मार्ट टीव्ही, स्मार्ट फोन, ई लर्निंग, प्रोजेक्टर, ई साहित्य यांच्या वापरामुळे स्थलांतरीत शाळाबाह्य मुलांना भााळेविशयी आवड निर्माण झाल्याचे दिसून आले. सदरची माहिती ही पालक भेटी, मुलाखती, चर्चा, प्र''नोत्तरे यांद्वारे संकलित केलेली आहे.

निरीक्षणे :

1. स्थलांतरीत व भााळाबाह्य मुलांना शिक्षणाविशयी आवड निर्माण झाली.
2. संगणक, प्रोजेक्टर, यांचा सुयोग्य रितीने वापर केल्यास त्या मुलांमध्ये आवड निर्माण करता येते.
3. शिक्षणाची गुणवत्ता सुधारण्यास मदत होते.
4. विद्यार्थी हा केवळ परीक्षार्थी न राहता ता कृतीशील बनतो.
5. या साधनांच्या वापरामुळे अभ्यासाची घोकंपट्टी करुन गुण मिळविण्यापेक्षा विद्यार्थ्यांचा शिक्षणातील रस वाढत आहे.
6. शिक्षक व विद्यार्थी यांच्यामध्ये सुसंवाद मोठ्या प्रमाणात वाढीस लागला आहे.
7. शिक्षक व पालक यामध्ये सहकार्याची भावना व सुसंवाद साधला जात आहे.

8. स्वतःच्या कलाकृती, गीते, गायन, विविध उपक्रम शैक्षणिक साहित्य जतन करण्यात येउ लागली.
9. ई वापर वाढला.

निष्कर्श :

स्थलांतरीत व भाळाबाह्य मुलांना शाळेत दाखल करुन स्मार्ट टीव्ही, स्मार्ट फोन, प्रोजेक्टर, मोबाईल टॅब, वेबसाईड, यांद्वारे स्थलांतरीत व शाळाबाह्य मुलांना शिक्षणाच्या प्रवाहात टिकवून ठेवण्यास मदत होते.

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शिक्षा पर प्रौद्योगिकी का प्रभाव

डॉ . शैला चव्हाण (Pg. 296-300)

आज का युग विज्ञान और तंत्रज्ञान का युग है। इसलिये हर एक क्षेत्र में 'करलो दुनिया मुठ्ठी में' के प्रयास हो रहे है। नये नये अनुसंधान आज मानव जीवन को पूर्ण रुप से प्रभावित कर रहे है। कल की तुलना मे आज हमारा जीवन आसान और सुविधा पूर्ण बन गया है। उदा. घर में आज उपलब्ध सुविधाओं के कारण घर के काम आसानी से हो रहे है। क्यों कि आज मिक्सर, फ्रिज, वॉशिंग मशिन के कारण श्रम कम हो रहे है। व्यक्ति अपना समय अन्य कामों में व्यतित करते हुए जीवन का आनंद उठा रहे है। आज सारा समाज इस विज्ञान और तंत्रज्ञान से प्रभावित होकर अपना विकास और उन्नति में जुटा हुआ है। घर से लेकर कारखानों तक नये नये मशिनों ने हमारा जीवन व्याप्त किया है। इससे कोई भी क्षेत्र छुटा नहीं है। इसी कारण आज शिक्षा के क्षेत्र में भी इस विज्ञान और तंत्रज्ञान ने अपने पैर भरभक्कम रुप में जमाएं है। शिक्षा क्षेत्र में भी इसी कारण अमूलाग्र परिवर्तन दिखाई देते है। कल की तुलना में आज पाठशाला और महाविद्यालयों के स्वरूप बदल गये है। और यह यात्रा गुरूकुल से लेकर डिजीटल कक्षा तक आकर पहुंची है। और यह परिवर्तन हमें एक नयी पहचान दे रहा है। जो समयानुसार उचित है।

आज हमे पाठशाला और महाविद्यालयों के जो दर्शन होते है, वह कल की तुलना में अत्यंत नवीन रुप है। हमारे ही यहां गुरुकुल पद्धती ने जन्म लिया और आज की कक्षाए डिजीटल रुप में सामने आती है। यह विज्ञान और तंत्रज्ञान की ही देन है। आज हमारे विद्यालय और महाविद्यालयों की कक्षाओं का रुप पूर्णतः बदल गया है। कल की अध्यापक केंद्रीत अध्यापन पद्धती आज शिक्षा देनेवाले आधुनिक उपकरणों से सज्जित कक्षाएं हमें दिखाई दे रही है। और इन उपकारणों की संख्या भी नगन्य नही है। हर रोज अनुसंधान इन उपकरणों मे वृद्धी ही कर रहे है। इसमें मुख्य रुप से मोबाईल, संगणक, लॅपटॉप, प्रोजेक्टर, स्मार्ट बोर्ड, दूरदर्शन, व्हिडीओ, ऑडिओ कॉन्सफरिंग, ई-मेल, सीडी,

ई-शिक्षा आदि महत्त्वपूर्ण है। जो समय की मांग के अनुसार समायोचित अपनी भूमिका निभा रहे है, और २०२० का डिजीटल इंडिया का हमारा सपना पूर्ण होने की और हम कदम बढा रहे है।

कक्षा मे पाठ्यपुस्तको द्वारा शिक्षा और आशय समझाने हेतु फलक का उपयोग और तत्पश्चात छात्रों का लेखन इस क्रम में छात्रों को अध्यापकों पर निर्भर रहना और आशय लेखन और याद करनेपर ध्यान केंद्रित करना पडता था। इस प्रक्रिया से अधिक श्रम और समय खर्च होना स्वाभाविक था। परंतु आज इस स्थिती की तुलना में एकदम विरुद्ध स्थिती दिखाई दे रही है। आज फलक और खडिया की उपयोग की तुलना में प्रौद्योगिकी के माध्यमसे कक्षाओं में पीपीटी, व्हिडिओ, ई-लर्निंग, डेमो, ऑनलाइन प्रशिक्षण, और अन्य डिजिटल पद्धतियों के प्रयोग से आज शिक्षा अत्याधिक आधुनिकता के साथ संवादात्मक बनती जा रही है। वैसे तो शिक्षक केंद्रीत कक्षाओं के निम्नलिखित लाभ होते है, जिनके साथ साथ कुछ हानियां भी साथ साथ होती है, वह इस प्रकार

लाभ

- छात्रों के सामने अधिक मात्रा में अध्ययन सामग्री पेश करने का प्रभावी तरीका
- अध्यापक और छात्र आमने - सामने होते है।
- अध्यापको का व्यक्तिगत कार्य होता है।
- एक ही समय सभी छात्रो को समान जानकारी की प्राप्ति होती है।
- इसपर आर्थिक व्यय्य कम मात्रा में होता है।

हानी

- संवाद का अभाव होना।
- अध्यापन की सफलता शिक्षक की प्रभावशीलता पर निर्भर होती है।
- तकनीकी कौशल और क्षमता वृद्धी का अभाव होता है।
- याद रखना और रट पर अधिक ध्यान दिया जाना।
- समय का अधिक व्यय होता है।

उपर्युक्त बातों को हम सभी भलीभांती जानते है। किंतु आज समय बदला है। शिक्षा मानव जीवन की एक छोटी अवधि तक ही सिमट कर नहीं रह गई है वरना मानव के संपूर्ण जीवन काल का एक पर्याय बन गयी है ज्ञान के भंडार में अत्यंत तीव्र गति से हो रही वृद्धी एवं सुचना व संचार की नवीन प्रौद्योगिकी ने शिक्षा को तेजी से परिवर्तित होने वाली एक अखंड अनवरत प्रक्रिया के रुप में वैश्विक स्तर पर प्रस्तुत कर दिया है। शिक्षा के क्षेत्र में पाठन-पठन, अध्ययन - अध्यापन, ज्ञानवर्धक जानकारियाँ सामान्य ज्ञान, परीक्षा के निए उपयुक्त सामग्री, संस्कृत, ज्ञान, विज्ञान, वैदिक गणित और स्वाध्याय, को संगणक ने आत्मसात किया है। साथ ही में वेद, स्मृति, अरण्यके, उपनिषदों का ज्ञान अल्प समय कें ही सूचना प्रौद्योगिकी एवं संचार अध्ययन द्वारा प्राप्त किया जा सकता है, शिक्षा के विभिन्न मानकों को परिदृश्य पटल पर लाने का श्रेय भी संचार प्रौद्योगिकी को जात है।

२१वीं सदी में डिजीटल तकनीक हमें अलग अलग तरीकों से प्रभावित कर रही है। हम आज प्रौद्योगिकी का उपयोग दिन - प्रतिदिन अपनी गतिविधियों, नवनिर्माण और उद्योगों, सेवाओं, शिक्षा आदि में कर रहे है। वास्तव में शिक्षा यह एक ऐसा क्षेत्र है, जहाँ प्रौद्योगिकी के उपयोग के माध्यम से एक बडा परिवर्तन देखा गया है, शिक्षा के क्षेत्र मे ऑनलाइन दुनिया की मौजूदगी ने पूरी तरह शिक्षा की प्रक्रियाओं में क्रांति ला दी है, शिक्षा का चेहरा ही बदल गया है। क्यों कि इससे अनगिणत फायदे होने के कारण हम प्रौद्योगिकी को नकार नहीं सकते। इसमें से कुछ महत्त्वपूर्ण फायदे निम्नलिखित है।

१) व्यापक मंच :-

प्रौद्योगिकी द्वारा समर्थित शिक्षा, एक ही मंच तक सिमित न रहकर पूर्ण विश्व में व्यापक रूप से फैल गयी है। डिजिटाइजेशन के कारण छात्र दूरस्थ विदेशी स्थान से विडीयो कॉन्फ्रेसिंग, तथा ऑनलाईन तकनिकी के माध्यम से शिक्षा प्राप्त कर सकते है। यही क्रिया अध्यापक भी आराम से कर सकते है। इसलिए छात्र और अध्यापकों के लिए एक वैश्विक मंच ही प्राप्त हुआ है।

२) विचार विमर्श का प्रभावी माध्यम :-

कल तक सिर्फ अध्यापक केंद्रीत अध्यापन पद्धती में कक्षांतर्गत ही छात्रों मेल-जोल और विचारोंका आदान-प्रदान हुआ करता था। परंतु आज तकनीक के माध्यम से व्हाट्सएप, स्काइप, ई-

मेल के माध्यम से लगातार छात्र और अध्यापक एक दूसरे के संपर्क में रहते हुए विचार, समस्या, अध्यापन सामग्री के संबंध में आसानी से विचार विमर्श कर सकते है।

३) शीघ्र जानकारी अथवा समय की बचत

छात्रो को अब पाठ्यपुस्तको पर निर्भर नहीं रहना पडता है, क्योंकि सभी ऑनलाइन होने के कारण शिघ्रता से एक क्लिक पर आसानी से जानकारी प्राप्त होती है। पलभर में जानकारी के ढेर लग जाते है। परिणामतः समय की बचत होती है।

४) ऑनलाइन खोज

छात्र अध्यापन हेतु एक क्लीक पर जानकारी ऑनलाइन शिघ्रता से खोज सकता है। नेट के माध्यम से ऑनलाइन ग्रंथालय, ई-लर्निंग, ई-पुस्तके, विडियो, ऑडियो, चित्र, आदि, गुगल के माध्यम से प्राप्त करते हुए घर बैठे अपनी पढाई पूर्ण कर सकते है।

५) मोबाईल अनुप्रयोग - Mobil Applications

शिक्षा क्षेत्र में ऑनलाइन अध्यापन के लिए, अनेक अभिनव अनुप्रयोग (ॲप्लीकेशन्स) उपलब्ध है। और इन प्रयोगों के अनेक नये नये तरीके भी उपलब्ध होने के कारण इस प्रकार के शिक्षा में छात्र अधिक दिलचस्पी के साथ कार्य करते हुए आपस में संवाद करते है।

६) विशेष आवश्यकता रखनेवाले छात्रों के लिए

यह प्रौद्योगिकी अत्यंत उपयुक्त है। आसान तरीका और घर बैठे जानकारी उपलब्ध होने के कारण कक्षाओं पर होनेवाली निर्भरता कम होती दिखाई दे रही है। आधुनिक तकनीक द्वारा उन्हे सक्षम बनाया जा रहा है।

७) निष्पक्ष मूल्यांकन

सिर्फ अध्ययन-अध्यापन ही नहीं तो अनेकानेक परीक्षाओं के मूल्यांकन हेतु डिजिटल तकनिक का प्रयोग किया जा रहा है। और यह अत्यंत विश्वासपूर्ण और निष्पक्ष रुप में होता है। इसलिए ऑनलाइन परीक्षा और परीक्षाओं का होनेवाला मूल्यांकन महत्त्व रखता है।

८) अन्य

डिजिटल प्रौद्योगिकी के कारण आज छात्रों की अध्ययन रुचि बढाने हेतु अनेक वीडियो गेम का निर्मान किया है। जिससे छात्रो को मनोरंजन के साथ शिक्षा दी जा रही है। कुछ खेल ऐसे भी है, जो छात्रों की समस्या हल करने की क्षमता में वृद्धी कर रहे है। खेलखेल में पढाई से छात्र पढाई में रुचि ले रहे है। साथ ही मे भारत और पाश्चात्य देशो में भी ऐसे अनेक अभ्यासक्रम का निर्माण किया गया, जिनका अध्ययन और डिग्री ऑनलाईन प्राप्त कर सकते है।

अतः प्रौद्योगिकी ने शिक्षा प्रक्रिया को अमूलाग्र रुप से बदल कर रख दिया है। क्योंकी आज इसका क्षेत्र अत्यंत विस्तृत होने के कारण सिखना, संचार, और सहयोग के साथ आधुनिक प्रगति का मार्ग प्रशस्त कर दिया है। शिक्षा और छात्रों की पहुँच आज देशों की सिमाएं पार कर रही है क्यों कि डिजिटल प्रौद्योगिकी ने संवादात्मकता, शीघ्र समापन, शब्द खोजना, अपनी क्षमता नुसार उपयोग, और अपने आप सिखना, आवश्यकता नुसार बाह्य मार्गदर्शन आदि ने विशेषताओं के कारण डिजिटल प्रौद्योगिकी आज शिक्षा क्षेत्र में अपना एक स्थान बनाया है। और यह विज्ञान की देन हमारे लिए एक वरदान सिद्ध हुई है। इसमें कोई आशंका नहीं है।

संदर्भ

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रुपाली लक्ष्मण राठोड (Pg. 301-304)

पी एच.डी. संशोधिका , पदव्यूत्तर शिक्षण विभाग, संत गाडगेबाबा अमरावती विद्यापीठ अमरावती

Abstract

माहिती तंत्रज्ञानाच्या युगामुळे सर्वत्र डिजिटलायझेशन होत आहे. शिक्षण क्षेत्र त्याला अपवाद नाही. सदरील पेपर मध्ये वाशिम जिल्ह्यातील जि.प.शाळेतील डीजीटल शिक्षण आणि ग्रामिण बंजारा समाजातील विद्यार्थी ह्यावर भर देण्यात आलेला आहे .ग्रामीण भागातील शाळासुद्धा आज डिजिटल शाळा होत आहे. भारतीय समाज हा विविध जाती , धर्म भाषांच्या लोकांची संपन्न अशी सांस्कृतिक आहे .प्रत्येक समाजाची एक अशी आपली ओळख आहे. बंजारा समाजाचीही ही आपली एक वेगळी ओळख आहे. नोकरी व्यवसायाच्या निमित्ताने बंजारा समाज शहरी भागात वास्तव्यास आलेलाही आढळून येतो. शिक्षणाचे महत्व या समाजातील लोकांना समजल्यामुळे ह्या समाजातील मुले प्राथमिक पासून ते उच्च शिक्षण घेत आहेत. प्रगत शैक्षणिक महाराष्ट्र उपक्रमांतर्गत वाशिम जिल्ह्यात समग्र शिक्षा अभियानाच्या निधीतून आणि लोकवर्गणी , शिक्षक सहभागातून चारशे चौऱ्हांशी शाळा डिजीटल झाल्या आहेत. दोनशे अठ्यानव शाळांना डिजीटल करण्याचा विडा शिक्षण विभागाने उचललेला आहे. ह्या अध्ययन वातावरणामुळे ग्रामीण विद्यार्थ्यांच्या गळती व स्थगितीचे प्रमाण ही कमी करुन त्यांच्या ठिकाणी शिक्षणाची आवड निर्माण करण्याचा प्रयत्न केला जात आहे. शाळा मुख्याध्यापक , शिक्षक , पालक व गावकऱ्याच्या सहकार्यातून लोकवर्गणीतून शाळा डिजीटल होत आहेत. ह्या डिजीटल शिक्षणातून बंजारा समाजातील ग्रामीण विद्यार्थ्यांचा शैक्षणिक स्तर उंचावण्याची व प्रगती होत आहे. प्रस्तुत पेपर मध्ये वाशिम जिल्ह्यातील जि.प.शाळेतीलडीजीटल शिक्षणातून ग्रामिण बंजारा समाजातील विद्यार्थी ह्यावर भर देण्यात आलेला आहे.

कळीचे शब्द : *माहिती तंत्रज्ञान , बंजारा समाज , ई – लर्निंग , डिजीटल शाळा ,ग्रामीण विद्यार्थी*

प्रस्तावणा :- डिजीटल इंडीया मोहीमेअंतर्गत माहिती तंत्रज्ञानाच्या युगात डिजीटायजेशनचे वारे सर्वत्र शिक्षण क्षेत्रांतर्गत वाहतांना दिसत आहे. माहिती तंत्रज्ञाना च्या युगा मुळे सर्वत्र डिजिटायझेशन होत आहे. शिक्षण क्षेत्र त्याला अपवाद नाही. शहरी काय तर ग्रामीण भागातील शाळासुद्धा आज डिजिटल शाळा होत आहे. डिजीटल शिक्षणाने केवळ शहरी भागातच नव्हे तर ग्रामीण भागात देखिल मोठ्या प्रमाणात बदल निर्माण होत आहे. ग्रामीण भागातील विद्यार्थ्यांना हसत खेळत शिक्षण प्रवाहात आणण्यासाठी वेगवेगळ्या योजनांचा शिक्षण प्रक्रीयेत प्रयोग होतांना आढळते. त्यात ग्रामीण भागातील जिल्हा परीषद डिजीटल शाळा ही तर विद्यार्थ्यासाठी जगासोबत चालण्याची एक पर्वणीच होय. महाराष्ट्र राज्यातील वाशिम जिल्ह्याच्या डिजीटल शिक्षणासंदर्भात माहिती घेण्याआधी बंजारा समाजाच्या शिक्षण प्रवाहांचा थोडक्यात बंजारा समाजाचा परीचय खालीलप्रमाणे.

भारतीय समाज हा विविध जाती , धर्म भाषांच्या लोकांची संपन्न अशी सांस्कृतिक आहे . प्रत्येक समाजाची एक अशी आपली ओळख आहे. प्रत्येक समाजाची आपल्या काही परंपरा , संस्कृती , खाणपान पध्दती आहेत. बोली भाषा बोलणाऱ्या समूह ह्या देशात आपली वेगळी ओळख निर्माण करत आहेत. बंजारा समाजाचीही ही आपली एक वेगळी ओळख आहे. आपण एखाद्या दिवशी प्रवास केला तर आपण थकून जातो. परंतू आपल्या देशात बंजारा समाजात असा एक समाज आहे की ज्या समाजातील लोक आयुष्यभर प्रवास करत आपले जीवन व्यतीत करीत होते. भटकंती करणाऱ्या या समाजाने आता तांडा स्वरुपात आपली वस्तीस्थाने निश्चित केलेली आहे. तांड्यात राहणाऱ्या या समाजाने शिक्षणाची कास धरलेली आहे. नोकरी व्यवसायाच्या निमित्ताने बंजारा समाज शहरी भागात वास्तव्यास आलेलाही आढळून येतो. शिक्षणाचे महत्व या समाजातील लोकांना समजल्यामुळे ह्या समाजातील मुले प्राथमिक पासून ते उच्च शिक्षण घेत आहेत.

भटकंती करीत बंजारा समाज भारतभर विखुरलेला आहे. राज्यामध्ये वेगवेगळ्या नावाने ओळखल्या जातो. बंजारा, बनजारा, लमाण, गोरमाटी इ.समाज म्हणून ओळखल्या जातो. हा समाज ग्रामीण भागात मोठ्या संख्येने वसलेला आहे. गुरे ढोरे पाळणारे हया समाजाचा मुख्य व्यवसाय शेती हा आहे. समाजातील मोठी लोकसंख्या तांड्यात असल्यामुळे प्राथमिक तसेच माध्यमिक शिक्षणही बंजारा समाजातील विद्यार्थी ग्रामीण भागातून घेतांना दिसतात. ह्या समाजातील मुलांना तसेच मुलींना शिक्षण प्रवाहात आणण्यासाठी जिल्हा परीषद शाळेचा मोठा हातभार आहे.

- **डिजीटल शाळा म्हणजे काय** :

महाराष्ट्र शासनाच्या शालेय विभागात शाळा सिध्दी ह्या नव्या उपक्रमांतर्गत तंत्रस्नेही , ई लर्नींग , ई क्लास ह्या संकल्पेवर भर दिला आहे. ह्याच दरम्यान जिल्हा परीषद शाळेंना डिजीटल शाळा करण्याचे कार्य हाती घेतले आहे. डिजीटल शाळेचा ह्या संकल्पनेचा वटवृक्ष राज्याबाहेरही दिसून येत आहे .

‘ जेथे शिक्षणाचा तंत्रज्ञानाचा त्रिवेणी संगंम होतो ती डिजीटल शाळा होय ’. शाळेत चालणाऱ्या तीन बाबींचे वर्गीकरण अध्ययन अध्यापन , मूल्यमापन व शालेय व्यवस्थापन असे करता येईल. ह्या तिनही बाबी इलेक्ट्रानिक उपकरणाच्या आधारे करीत असेल तर त्या शाळेस डिजीटल शाळा असे संबोधल्या जाते.

- मोबाईल , संगणक ,दूरदर्शन , इंटरनेट, इंटर अक्टीव्ह बोर्ड , इत्यादी इलेक्ट्रॉनिक साधनांच्या माध्यमातून पाठ्यांशाचे प्रभावी अध्ययन अध्यापन करणे तसेच विविध संकल्पनांचे मॉडेल बनवून ऑनिमेशन, सादरीकरण करणे म्हणजे ई लर्निंग.
- ई लर्निंग द्वारे पाठ्यांश शिकवून झाल्यानंतर संगणकाद्वारे त्याचे मूल्यमापन करणे.
- शालेय कामकाजात , व्यवस्थापनात संगणक , मोबाईल ह्याचा वापर करणे.

डिजीटल शाळा शाळा म्हणजे केवळ वस्तू आणून ठेवणे नव्हे तर त्यानूसार शाळेची रंगरंगोटी , वर्गखोल्यामधील फर्निचर , बोलक्या भिंती , विद्यूत प्रवाह , वर्गाबाहेरील परीसर इत्यादी गोष्टींचा अंतर्भाव डिजीटल शाळेत होतो .

वाशिम जिल्हा परीषद डिजीटल शाळा :

आज जिल्हा परीषद शाळा डिजीटल होत आहे. आणि ह्याचाच फायदा तांड्यात राहणाऱ्या बंजारा समाजातील मुलांना होत आहे. वाशिम जिल्ह्यात समग्र शिक्षा अभियानाच्या निधीतून आणि लोकवर्गणी , शिक्षक सहभागातून चारशे चौऱ्हांशी शाळा डिजीटल झाल्या आहेत. तसेच दोनशे अठ्यानव शाळांना डिजीटल करण्याचा विडा शिक्षण विभागाने उचललेला आहे. प्रगत शैक्षणिक महाराष्ट्र उपक्रमांतर्गत शिक्षण क्षेत्रात अमुलाग्र बदल घडवून आणण्यासाठी विविध उपक्रम राबविण्यात येत आहे . बहुतांश शाळांनी दप्तर मुक्त शिक्षणासाठी पुढाकार घेतलेला आहे. डिजीटल शिक्षणाद्वारे खेळीमेळीच्या वातावरणात अध्ययन अनुभव विद्यार्थ्यांना देता यावे म्हणून शासनाचा प्रयत्न आहे . ह्या अध्ययन वातावरणामुळे ग्रामीण विद्यार्थ्यांच्या गळती व स्थगितीचे प्रमाण ही कमी करुन त्यांच्या ठिकाणी शिक्षणाची आवड निर्माण करण्याचा प्रयत्न केला जात आहे. जिल्हा परीषद शाळा डिजीटल करण्यामागे मुख्य हेतू म्हणजे ग्रामीण भागातील विद्यार्थ्यांना आनंददायी शिक्षण देणे . तसेच त्यांचा त्याद्वारे सर्वांगीण विकास साधणे होय. वाशिम जिल्ह्यांतर्गत काही डिजीटल शाळा ह्या तिनसे पासस्ट दिवस सुर असतात. अशा काही गावांमध्ये टिव्ही बंद कार्यक्रम रात्री चालतो. सहा ते आठ ह्या वेळेत पालक विद्यार्थाकडून अभ्यास करुन घेतात. काही शाळांनी ह्या उपक्रमासाठी ईनव्हरटरची व्यवस्था देखिल केलेली आहे. राज्य सरकारकडून उपक्रमांतर्गत मिळणाऱ्या निधीतून जिल्हा परीषद शाळेतील वर्गखोल्या डिजीटल करणे शक्य होत नाही . कुठे कुठे तर शाळा मुख्याध्यापक , शिक्षक , पालक व गावकऱ्याच्या सहकार्यातून लोकवर्गणीतून शाळा डिजीटल होत आहेत . ग्रामीण विद्यार्थ्यांना चांगले शिक्षण मिळावे म्हणून जिल्ह्यातील गावकरी हातभर लावत आहेत . वाशिम जिल्ह्यात अनेक तांड्यात बंजारा विद्यार्थी शिक्षण घेत

आहेत. ह्या डिजीटल शिक्षणातून शाळांमधून आनंददायी प्राथमिक व माध्यमिक शिक्षण घेणे शक्य झालेले आहे. शेती व्यवसाय करणाऱ्या ह्या ग्रामीण भागातील बंजारा विद्यार्थी डीजीटल शिक्षणामुळे जगाशी जोडला गेला आहे.

डीजीटल शिक्षणामुळे शिक्षणात येणाऱ्या अडचणी , नविन तंत्रज्ञान हाताळणे , नविन माहिती तंत्रज्ञानाच्या आधारे मिळविणे ह्यामुळे बंजारा समाजाच्या ग्रामीण विद्यार्थ्यांचा विकास होत आहे. ह्या विद्यार्थ्यास डिजीटल शिक्षणाच्या माध्यमातून आपला शैक्षणिक स्तर उंचावण्याची व प्रगती करण्याची संधी जिल्हा परीषद शाळेमुळे लाभली आहे.

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*365 **दिवस चालणारी वाशिममधील जिल्हा परिषदेची शाळा 'हाऊसफुल्ल'** https://abpmajha.abplive.in/maharashtra/365-days-zp-school-in-washim-latest-updates-424196*

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एम.अध्ययन शाळाबाहय विद्यार्थ्यांचा अध्ययनस्तर वाढविण्यासाठी प्रभावी साधन.

विजय वामनराव बागूल (Pg. 305-308)

संशोधक, अॅड.विठलराव हांडे शिक्षणशास्त्र महाविद्यालय नाशिक.

डॉ. एस. आर. वाजे

मार्गदर्शक, अॅड.विठलराव हांडे शिक्षणशास्त्र महाविद्यालय नाशिक.

प्रास्ताविक

मोबाईलचा वापर माहितीची साठवणूक, माहितीची देवाणघेवाण,इंटरनेटच्या वापरासाठी आज मोठया प्रमाणात केला जात आहे.मोबाईल वापरणारा सर्वात मोठा गट म्हणून विद्यार्थ्यांकडे पाहिले जाते.मोबाईलचा वापर अध्ययनासाठी करणे निश्चितच प्रभावी ठरणार आहे.यासाठी Mobile Learning ही संकल्पना खूपच उपयुक्त आहे. मोबाईल लर्निंग ही संकल्पना तशी नवीन नाही मात्र याची हवी तेवढया प्रमाणात सखोल ,व्यापक व परिपूर्ण चर्चा घडून आली नाही.

मोबाईल अध्ययनाची पार्श्वभूमी

२००८ : Carnegic Mellon University मधील प्राध्यापक मॅथ्यू काम (Mathew kam) यांनी २००८ मध्ये भारतातील ग्रामीण भागातील विदयार्थ्यांसाठी मोबाईल फोन लर्निंग गेम्स विकसित केले.

२००९ : The International Association For Mobile Learning (I am learn) याची स्थापना झाली. मोबाईल लर्निंगबाबतचे संशोधन,विकास,उपयोजन याबाबत ही संघटना कार्य करते.

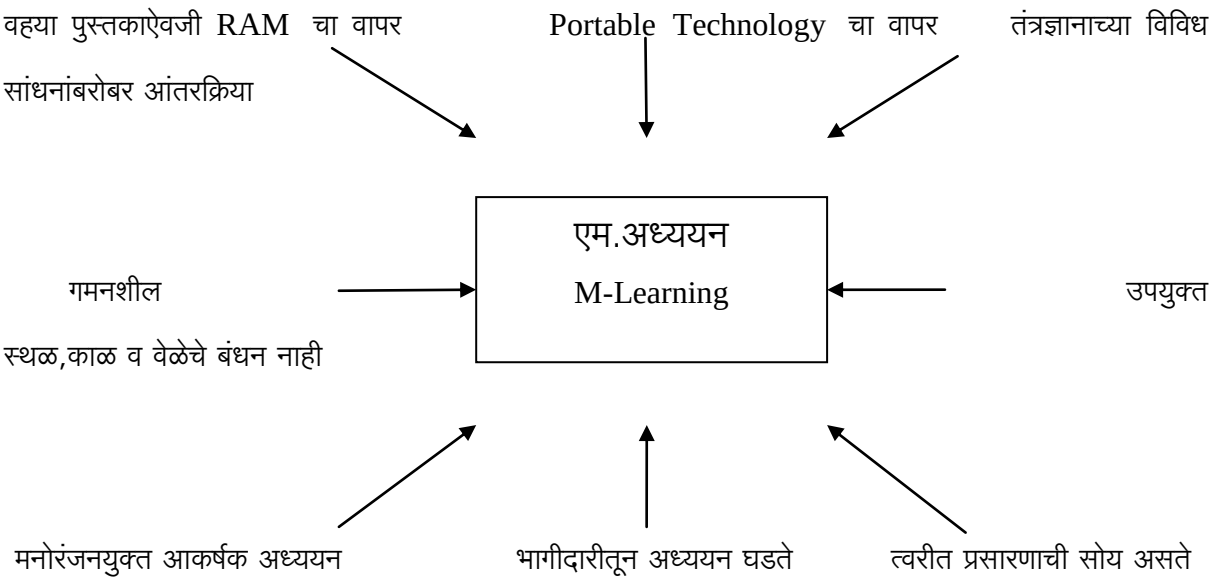
एम.अध्ययन – अर्थ : (Meaning Of M-Learning)

संगणक,लॅपटॉप या साधनांच्या वापराने समाजाची जीवनशैली बदलून गेली आणि बिनतारी समाज (Wireless Society) निर्माण झाला.या सर्व घटनांनी अध्ययनाच्या एका नवीन पदधतीची दारे खुली केली.ती पदधत म्हणजे एम.अध्ययन किंवा एम लर्निंग होय.

ज्यावेळी हाताळण्यास सोप्या किंवा सुटसुटीत अशा साधनांचा उदा. PDA's (Personal Digital Assistants) मोबाईल फोन्स,लॅपटॉप,या व यासारख्या इतर माहिती तंत्रज्ञानातील साधनांचा वापर अध्ययन – अध्यापनासाठी केला जातो. तेव्हा एम लर्निंग किंवा मोबाईल लर्निंग घडून येते. विविध साधनांबरोबर विद्यार्थ्यांच्या आंतरक्रिया घडून येत असतात,याबरोबरच ही साधने हाताळण्यास सोपी असल्याने कोणत्याही ठिकाणी अध्ययनाची संधी प्राप्त होते. Collaboration हे एक एम लर्निंगचे विशष आहे.

व्याख्या –

Mobile Learning is an E-learning that uses mobile devices and wireless transmission – pinkwert et.al [2003]



एम लर्निंग म्हणजे मोबाईल तंत्रज्ञानाच्या विविध साधनांद्वारे स्थळ,काळ व वेळ यांच्या मर्यादेशिवाय प्रभावीपणे वेगवेगळया आंतरक्रिया करून ओझ्याविणा व मनोरंजकतेने अध्ययन करणे होय.

एम.अध्ययनाची वैशिष्ये : Characteristics Of M-learning

1) गरजेनूसार त्वरीत अध्ययन घडून येते.
2) ज्ञानप्राप्तीकरणाचा हा आधुनिक/नवीन [Initiative] मार्ग आहे.
3) अध्ययनाच्या ठिकाणाबाबत गमनशीलता असते.
4) संपूर्ण अध्ययन प्रक्रिया आंतरक्रियाभिमुख घडून येते.
5) शैक्षणिक आशयाचे [Instructional Content] एकात्मीकरण केले जाते.

एम–अध्ययनाचे फायदे .

एम लर्निंग हा अध्ययनाचा आधुनिक विचार आहे.

१) अनुकूल अध्ययन : [Convenient Learning] : घरी,प्रवासामध्ये,कामाच्या ठिकाणी अध्ययन करण्यास एम लर्निंग सुकर [accessible] आहे.प्रश्नोत्तरे विविध लेखन, अध्ययन गेम्स यासाठी एम लर्निंग अनुकूल ठरते.

२) भागीदारीतून/सहभागतून अध्ययन : [Collaborative learning]

प्रभावी अध्ययन तेव्हाच घडते जेव्हा त्या बाबतची देवाण – घेवाण त्वरीत घडते. एम लर्निंगमध्ये माहिती व ज्ञानाची देवाण–घेवाण होते. [Sharing of Information]

३) सुटसुटीत अध्ययन : [Portability learning] वहया पुस्तकांची जागा RAM ने घेतल्या कारणास्तव सुटसुटीत अध्ययन घडून येते. सुटसुटीत अध्ययनामुळे सहज व कोणत्याही वेळी, ठिकाणी अध्ययन घडून येते.

४) सुसंगत / अनुरूप अध्ययन : [Compatibility learning] - एम लर्निंगमधिल अध्ययन हे मुख्यत्वेकरून मोबाईल साधनांसाठीच [devices] तयार केले जाते.

५) आकर्षक ,मनोरंजक अध्ययन : [Atrractive, Fun Learning] एम लर्निंगमध्ये खेळ [Games] व अध्ययन कृती यांचा सुदर मिलाप असल्याकारणास्तव ते आकर्षक व मनोरंजक असते.

कार्यपदधती –

शाळाबाहय विदयार्थ्यांचा अध्ययनस्तर वाढविण्यासाठी कृतीकार्यक्रमात जाणीवपूर्वक मोबाईलचा वापर संशोधकाने केला.

शब्दवाचन – शब्दवाचन ही चित्रफीत सुरू करून एकेक विदयार्थ्याला शब्दावर बोट ठेवण्यास सांगितले बोट ठेवल्याबरोबर शब्दाचे वाचन मोबाईल मधून होऊ लागले.मुलांना यामुळे खूप आनंद होत असे.सर्व मुलं उत्साहाने शब्दवाचनात सहभागी होत असत.व पुन्हा पुन्हा हीच चित्रफीत सुरू ठेवण्याची मागणी करत असत.

यापध्दतीने मोबाईलद्वारे विविध खेळ घेतले व विदयार्थी सहभाग वाढविला.

१) गटातील वेगळा शब्द ओळखणे.

२) गटातील वेगळा प्राणी ओळखणे.

३) गटातील वेगळे फळ ओळखणे.

४) गटातील वेगळी वस्तू ओळखणे.

५) बेरीज करणे उत्तर शोधणे.

६) वजाबाकी करणे उत्तर शोधणे.

७) लहान व मोठी संख्या ओळखणे.

इत्यादी खेळांचा मोबाईलद्वारे सराव केला व विदयार्थ्यांचा अधिकाधिक सहभाग मिळविला.

लवचिक वेळापत्रक –

वाचन व अनुलेखनात या मुलांना लवकर कंटाळा येत असे.त्याएवजी मोबाईलवर गाणी अथवा खेळ घेण्याचा आग्रह करायचे त्यांच्या इच्छेनुसार अध्ययन अनुभवात बदल न केल्यास प्रतिसाद कमी मिळत असे.त्यामुळे अध्ययन अनुभवात

विदयार्थ्यांच्या इच्छेनुसार बदल करावा लागत असे. अशा वेळी प्रार्थना,गाणी,इंग्रजी कविता, Rhymes ऐकविणे त्यासोबत कृती करून गायन करणे यात मुलं अधिक रममाण होत असत.

युटयुब – दुर्गम व डोंगराळ क्षेत्रातील विद्यार्थ्यांची बोलीभाषा ही मुख्य अडचण होती. युटयुब वरील कविता व प्रार्थना गायनात सुरूवातीस अडचणी आल्या मात्र दररोजच्या सरावाने व श्रवणाने मुलांच्या उच्चारणात व गायनात सुधारणा झाली.प्रार्थनेच्या सुरात सुर मिसळून ही मुले सुंदर प्रार्थना गायन करत.

फलनिष्पत्ती –

१) कृतीकार्यक्रमात मोबाईलच्या वापरामुळे अध्ययन स्तरात वाढ झाली

२) विद्यार्थी–विद्यार्थी, विद्यार्थी–शिक्षक, शिक्षक–पालक अशा जास्तीच्या आंतरक्रिया घडून आल्या. अध्ययन एकांगी न होता परस्परांशी निगडीत अध्ययन घडून आले.

३) मोबाईलच्या वापरामुळे विदयार्थ्यांच्या दिर्घकाळ स्मरणात राहणारे व अर्थपूर्ण अध्ययन अनुभव मिळाले.

४) विद्यार्थी सतत अध्ययनशील राहीले. मनोरंजक पदधतीने विदयार्थ्यांना अध्ययनाची संधी मिळाली.

५) विदयार्थ्यांना शिक्षण म्हणजे प्रत्यक्ष जीवनाची तयारी असा अनुभव या निमित्ताने देता आला.

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डिजीटलीकरण: भारताचा ज्ञान केंद्र म्हणून कायापालट

प्रितम दत्तात्रय वीर (Pg. 309-314)

डॉ. कविता घुगुसकर

मार्गदर्शक, सहा.प्राध्यापिका

आजच्या माहिती तंत्रज्ञानाच्या युगामध्ये डिजीटायजेशन ही संकल्पना मोठया प्रमाणात वापरली जाते आज एकही क्षेत्र राहिले नाही जे डिजीटायजेशन खाली आलेले नाही.शाळा महाविद्यालय विविध कंपन्या अत्यावश्यक सेवा शासकिय काम या पेक्षा ही अनेक इतर गोष्टीमध्ये तंत्रज्ञानाचा वापर करून मानवाने प्रगती केलेली आहे. अगदी मानवाची जागा काही ठिकाणी यंत्र मानवाने म्हणजेच रोबर्टने घेतली आहे लहाण मुलांपासून मोठया मानसापर्यंत प्रत्येक व्यक्ती या संसाधनाचा वापर लिलया करतात.माहिती तंत्रज्ञानाच्या महाजाळयाच्या माध्यमातून संपुर्ण जग हे एक खेडे गांव झाले आहे केवळ पुस्तकी ज्ञानवर आवलंबून न राहता प्रत्यक्षे अनुभव देण्यासाठी या डिजीटायजेशन या संकल्पनेचा मोठया प्रमाणावर वापर होत आहेत. संगणक, मोबाईल, डिजीटल डायरी, डिजीटल कॅमरे आशा प्रकारच्या वस्तुच्या माध्यमातून प्रत्येक क्षेत्र हे डिजीटील झालेले आहेत. भारत हा जगातील अत्यंत प्राचीन संस्कृती असलेला तरीही आधुनकतेची जोड आसलेला देश आहे.कारण इतर प्रगतशील देशांप्रमाणेच भारत हा प्रत्येक क्षेत्र डिजीटायजेशन अंतर्गत घेतलेले आहे प्रत्येक क्षेत्रामध्ये माहिती तंत्रज्ञानाचा वापर होत चाललेला आहेत.

मेक इन इंडिया

भारताचे पंतप्रधान मा.नरेंद्र मोदी यानी मेकींग इंडिया या २५ सप्टेंबर २०१४ रोजी राबवलेल्या योजने अंतर्गत प्रत्येक क्षेत्रामध्ये भारताला सक्षम करुन कौशल्य विकासानावर भर देउन विकास साधण्या मोठया प्रमाणात काम सुरू झालेले आहे कोणत्याही देशाचे शिक्षण व्यवस्था ही त्या देशाच्या प्रगती होण्या करीता कारणीभुत असते जगातील सर्वात मोठी लोकशाही असलेल्या भारतासारख्या देशामध्ये तसेच तळागळापर्यत शिक्षण पोहचविण्यासाठी अनेक योजना राबविल्या गेल्या मोठया प्रमाणात शालेय शिक्षणाची व्यसस्था करून गरीबातील गरीब व्यक्तीपर्यत शिक्षण पोहचवावे प्रचंड प्रयत्न सुरू झाली म्हणुनच शालेय विद्यार्थ्याना केवळ पुस्तकी ज्ञान न देता आधुनिक तंत्रज्ञानाच्या म्हणजेच डिजीटायजेशन शाळा महाविद्यालयामध्ये डिजीटायजेशन ही संकल्पना व लोकप्रिय होत चाललेली आहेत शिक्षाणाच्या माध्यमातून कुशल काम करणारे व्यक्ती तयार होणे हे शिक्षणाचे ध्येय रूजायला लागलेले आहेत.

डिजीटल इंडिया

देशाच्या प्रगती करीता शालेय किंवा महाविद्यालय जीवनामध्येच विद्यार्थ्यांना तंत्रज्ञानाधारीत शिक्षण दिलयास जागतीक स्पर्धेच्या युगाात आपले विद्यार्थी प्रगती करू शकता व त्याचे महत्व जाणून डिजीटल इंडिया ही कल्पना देखील भारताच्या पंतप्रधान मा. नरेंद्र मोदी यांनी ही योजना आमलात आणली.

डिजीटायजनशच्या बाबतील सद्यस्थिती पाहता शिक्षण क्षेत्रामध्ये डिजीटायजेशन माध्यमातून नव नविन संकल्पना विद्यार्थ्यांना सहजा सहजी शिकविता येतात. छोटया मोबाईल पासून ते आगदी मोठ मोठया प्रोजेक्टचा/संगणाकाचा/ डिजीटल बोर्डचा वापर करून जगातील विविध शोध व संकल्पनाच्या बाबतीत आपले विद्यार्थी निश्चित पणे जाणकार होतात व जे ज्ञान केवळ पारंपारीक पदधीतींच्या मदतीने देणे अशक्य असते असे ज्ञान तंत्रज्ञानाच्या माध्यमातून मोठया प्रमाणात दिले जाते शालेय किंवा महाविद्यालय शिक्षण व शाळेची निगडीत असलेल्या प्रत्येक घटकाला व तांत्रिक घटकाचे ज्ञान असणे आवश्यक झालेले आहे.

डिजीटायजेशन चे फायदे

शिक्षण क्षेत्रामध्ये डिजेटायजेशन मुळे अमुलाग्र बदल झालेला आहे.

१. शाळा महाविद्यालयामध्ये शिकवत असताना शिक्षक मोठया प्रमाणात संगणक प्रक्षेपक,मोबाईल किंवा तत्सम डिजीटल साधनांचा वापर करून गणित शास्त्र,भाषा या विषयामध्ये समजण्यास कठिण असणा—या समस्या या साधनांच माध्यमातून तंत्रस्नेही शिक्षक चांगलया प्रकारे स्पष्ट करू शकतात तांत्रिक महाविद्यालय मेडीकल, वैद्यकिय महाविद्यालय व अनेक विविध अभ्यास क्रमा मध्ये महाविद्यालयामध्ये याचा वापर करून एखादया विषयातील तज्ञ व्यक्तीचे मार्गदर्शन व्हिडीयो कॉन्फरन्स च्या माध्यमातून सहजा सहजी उपलब्ध होउ लागलेले आहे. विद्यार्थ्यांना कौशल्य पुर्ण ज्ञान देण्यासाठी या सर्व तंत्रज्ञानाचा मोठया प्रमाणात उपयोग होत आहे.

२. विद्यार्थ्यांसाठी देखील संगणाकाच्या माध्यमातून व माहिती जाळाच्या माध्यमातून ज्ञानाची कवाडे उघडी झालेली आहेत स्वंयम अध्ययनाच्या माध्यमातून तसेच आपल्या शिक्षांकाच मार्गदर्शनाखाली विद्यार्थी मोठया प्रमाणात ज्ञान आत्मसात करू लागले आहेत.

३. व्यवस्थापन क्षेत्रात देखील या डिजीटायजेशन मुळे कठिण कामे करणे सहज शक्य झाले आहेत शाळा महाविद्यालया बरोबर शासकिय कार्यालय तसेच खाजगी कार्यालये,बॅका कंपन्या आशा प्रत्येक क्षेत्रामध्ये अनेक विविध गोष्टीमध्ये व्यवस्थापन करण्याासाठी डिजीटायजेशन अत्यंत महत्वाची भूमिका बजावत आहेत. विविध व्यक्तीना हाताळत असताना त्यांचे रेकॉर्डस मेन्टेन करत असताना या संकल्पनेचा मोठया प्रमाणात उपयोग

होत असल्यामुळे वेळेची देखील खुप बचत होते. व वेळेची बचत झाल्यामुळे मिळालेला वेळ सत्कारणी लागतो व त्यामुळे वैयक्तिक प्रगती बरोबरच समाज व पर्यायाने देशाची प्रगती होण्यास मोठया प्रमाणात मदत होते. या मध्ये शाळा महाविद्यालयीन, कार्यालयीन, दस्ताऐवज किंवा इतर अनेक गोष्टींचा डिजीटायजेशन मुळे अत्यंत सोपे झालेले आहेत शालेय किंवा महाविद्यालयीन किंवा कोणत्याही कार्यालयाध्ये उपस्थिती विद्यार्थी किंवा कर्मचा—याची निगडीत असणारे विविध प्रकाराचे दस्ताऐवज ऑनलाईन सहजा सहजी उपलब्ध होतात. कोअर बॅकीग संकल्पणेच्या माध्यमातून बॅकाच्या कामकाज आर्थिक व्यवहार अत्यंत सुकर झाले आहेत मोठ मोठया मल्टी नॅशनल कंपन्या मध्ये देखिल मोठ मोठी यंत्रे रोबर्टच्या साहायाने अत्यंत कठिण असे कामे देखील क्षणामध्ये होउ लागलेले आहे.

४. विविध उपग्रहांच्या माध्यमातून आधिकधिक तंत्र वैज्ञानिक प्रगती साधन्यामध्ये भारत अग्रेसर होउ लागलेला आहे अमेरीका रशिया चिन अशा बलाढय देशांच्या बरोबरीने भारताने अत्यंत कठिण असणारी मोहिम ज्यामध्ये एका वेळी आवकाशा मध्ये १०५ उपग्रह विक्रम करण्याचे आवहान सहजा सहजी पेलले विकसीत देशानी भारतास देण्यास नाकारलेले तंत्राज्ञान भारतीय शास्त्रज्ञांनी तसेच तंत्रज्ञानी विकसीत केले ज्यामुळे जगातील महाशक्ती समजाल्या जाणा—या देशांनी देखील तोंडात बोटे घातली जगातील प्रगतीशिल देशांशी आपल्या भारता सारख्या विकसनशील देशांनी मोठया प्रमाणात स्पर्धा करूण देशाचे नाव आदराने घेण्यास या महाशक्तीना भाग पाडलेले आहे हे केवळ या डिजीटायजेशन मुळे शक्य झालेले आहेत

५. जगातील सर्वात जास्त लोकसंख्या असणा—या भारतासारख्या सर्वात मोठया लोकशाही राष्ट् मध्ये सर्व प्रकारचे शासकिय कामकाज हे अत्यंत किचकट असे काम आज खुप सोपे झालेले आहे. व याचे कारण डिजीटायजेश्न ही संकल्पना आहे. ग्रामीण पातळीवरील, जिल्हा पातळीवरील, राज्यपातळीवरील, विविध शासकिय कामकाजा बरोबर देश पातळीवर कामकाज देखील सहज झालेले आहेत मॅन्युअली कामकाजा पेक्षा डिजीटायजेशनच्या माध्यमातून होणारे कामाचा वेग हा अत्यंतिक असल्यामुळे प्रत्येक नागरीकाला विविध गोष्टी सहज सुखकर पदधतीने उपलब्ध होउ लागलेले आहे. देशाच्या प्रगती साठी कारणीभूत असलेल्या विविध योजना मोठया प्रमाणात राबविण्यासाठी व तळागळा पर्यंत पोहचविण्यासाटी या डिजीटल तंत्रज्ञानाचा मोठया प्रमाणात उपयोग होउ लागलेला आहेत नागरीकांच्या सुख सुविधांसाठी शासन व्यवस्था चांगलया प्रकारे चालण्यासाठी या तंत्रज्ञानाचा वापर केल्यास जागतिक महासतेच्या बरोबर आपला देश सहज स्पर्धा करू शकतो.

६. आर्थिक व्यवहार हे पहिल्या पेक्षा अत्यंत सुकर झालेले दिसून येतात जसे क्रेडिट,डेबिट, ऑनलाईन पेमेन्टसच्या माध्यमातून आर्थिक व्यवहार मोठया प्रमाणात पारदर्शकता आलेली

आहे तसेच कुठल्याही प्रकाराच्या कागदी स्वरूपातील रक्कम जवळ नसली तरी ऑनलाईन देणे घेणेच्या माध्यमातून देणे घेण्याच्या माध्यमातून सर्व गोष्टी सोप्या झालेलया आहेत मोबाईलच्या माध्यमातून देखीन पेमेन्ट रिचार्ज खरेदी अशा अनेक गोष्टी सहजा सहजी होतात

डिजीटायजेशनचे तोटे

ज्या प्रमाणे डिजीटायजशनेचे अनेक विविध फायदे आहेत त्या प्रमाणे काही तोटे आहेत

१. शैक्षणिक क्षेत्रामध्ये जरी मोठया प्रमाणामध्ये डिजीटायजेशचा वापर होत असला तरी अनेक विविध समस्या तोंड दयावे लागते जसे नवनविन साधनाचे वापराचे ज्ञान नसने किंवा प्राध्यापक किंवा कर्मचारी त्या बाबत उदासिन असने तसेच वापरण्याचे योग्य ज्ञान नसल्यामुळे साठविलेलया किंवा उपलब्ध असलेल्या माहितीचा अयोग्य वापर होण्याचे मोठया प्रमाणात शक्यता असते गोपनीय स्वरूपाची माहिती योग्य प्रकारे न हताळल्याने ति चोरली/हॅक होण्याची शक्यता मोठया प्रमाणात असते तसेच डिजीटायजेशन मुळे अनेक चांगल्या गोष्टीमुळे अनेक घातक गोष्टी सहज उपलब्ध असल्या कारणाने मोठया प्रमाणात नुकसान होण्याचे नाकारता येत नाही मात्र या सर्व गोष्टींचे योग्य ज्ञान असेल तर अत्याधुनिक ज्ञान विद्यार्थ्या पर्यंत पोहचविण्याचे काम शिक्षक प्राध्यापक प्रशिक्षकांच्या माध्यमातून योग्य प्रकारे वापरले जाउ शकते.

२. न्वनविन साधानांचा वापर करत असताना शालेय महाविद्यालयीन स्तरावरील विद्यार्थ्यांनी योग्य वापर न केल्यास या साधनामुळे प्रचंड हानी होण्याची शक्यता असते ब—याच वेळात आवश्यक ज्ञानापेक्षा आनावश्यक व समाज विघातक गोष्टींचे ज्ञान जे खरे तर विद्यार्थी व ते लहान किंवा तरूण व वयातील असून त्यांच्या पर्यंत घातक असते जे तरूणाना व मुलाना दिशा भरकटून टाकू शकते. म्हणून योग्य प्रकारचे मार्गदर्शन ज्ञान मिळाल्या नंतरच याचा वापर होतो अन्यथा विघातक गोष्टी पर्यंत जाण्याची शक्यता वाढते.

३. व्यवस्थापना क्षेत्रामध्ये जरी याचा मोठया प्रामाणात वापर केला जात असला तरी ब—याच वेळात गोपनीय स्वरूपातील माहिती सायबर गुन्हेगारांच्या माध्यमातून चोरली जाते व त्याचा मोठया प्रमाणात गैर वापर केला जातो एखादया संस्थेचा अत्यंत गोपनीय असे दस्ताएवेज अशा प्रकारे जर चोरले गेले तर त्याचा मोठया प्रमाणात तोटा त्या संस्थेला होतो म्हणून या गोष्टी कडे दुर्लक्ष न करता आवश्यक खबरदारी घेतल्यास नुकसान होणार नाही. वास्ताविक पाहता तंत्रज्ञान हे माणसाच्या प्रगती करीता असलेले साधन आहे परंतु

योग्य मार्गदर्शन आभावी अथवा ज्ञाना अभावी त्याचा योग्य वापर न झाल्यास जास्त नुकसान होउ शकते

४. ज्या प्रकारे अवकाश संशोधना मार्फत प्रगतशिल देशांच्या तुलनेत भारताने मोठी प्रगती साधलेली आहे. परंतु सगळया क्षेत्रात यांत्रिकी करण झाल्याने माणसाची संख्या कमी होउन त्यांची जागा यंत्रानी घेतली आहे त्यामुळे दुस—या बाजुला बेरोजगारी सारख्या गहन समस्येतून आजच्या तरूणाना जावे लागत आहे. योग्य मार्गदर्शनचा आभाव धार्मांधता जातीयता,प्रोदशिक वाद अशा अनेक समस्या देशा समोर उभे आहेत याचाच फायदा समाजकंटक घेतात त्यामुळे आजच्या तरूणाला देशद्रोही कारवाया करावयास भाग पाडत आहे. दहशतवाद कारवाया समाज विघातक कृत्य अशा गोष्टी आमिष दाखवून तरूणाकडून घेतल्या जात आहे. यात माहिती आंतरजालाचा देखिल मोठा वाटा असलेला दिसून येतो जसे फेसबुक मेल व्हाटसअप यांच्या माध्यमातून असे काही कृत्य गट तयार झालेले आहेत. जे तरूणाना विनाशकतेकडे घेउन आहेत

५. जगातील सर्वात मोठी लोकसंख्या असलेले तसेच जगातील सर्वात मोठया लोकशाही राष्ट् मध्ये राबविलेलया डिजीटल या संकल्पनेच्या माध्यमातून सर्व शासकिय कामकाज हे डिजीटल झालेले असले तरी देखील सामान्यतल्या सामान्य माणसा पर्यंत सुविधा पोहचविण्याचे मोठे आव्हान व्यवस्थेपुढे असते कारण सगळयाणाच डिजीटल स्वरूपातील गोष्टी हाताळणे जमत नाही तसेच बरेचसे लोक हे तंत्रज्ञान वापरण्या मध्ये उदासिन असलेले दिसून येतात तसेच जे इच्छूक असतात त्याना तज्ञ लोक फसविताना दिसून येतात त्यामुळे सर्व शासकिय योजना सुविधा दस्ताऐवज सामान्य लोकापर्यंत योग्य प्रकारे कशा पोहचविता येतील व लोकांचे जीवन सुखकर होईल याचा विचार होणे गरजेचे आहे.

६. आर्थिक व्यवहार,बॅकाचे व्यवहार, खरेदी विक्री, असे अनेक गोष्टी ऑनलाईन ई—बॅकेच्या माध्यमातून होतात परंतू त्यातही मोठया प्रमाणात फसवणूक होते ब—याच वेळेला फेक मेल व कॉलच्या माध्यमातून ग्राहकांच्या फसवणूकीचे प्रकार निदर्शनास आलेले आहे. त्यामुळे योग्य ती सुरक्षीतता न घेतल्यास ग्राहकांचे मोठे नुकसान होण्याचा संभव जास्त आहे व प्रत्येक ठिकाणी ई—पेमेंट सुविधा अद्याप पर्यंत न पोहचल्याने बरेचसे घटक या पासून वंचित अथवा उदासिन दिसतात.

डिजीटायजेशन खरे तर दुधारी तलवारी प्रमाणे आहे त्याचा योग्य प्रकारे वापर झाल्यास डिजीटायजेशनच्या माध्यमातून आपला देश ज्ञानाचे केंद्रस्थान होते आहे जगामध्ये आदर्श संस्कृती बरोबर तंत्रवैज्ञानिक क्षेत्रामध्ये देखिल भारत आपला ठसा उमटवत आहे यामध्ये सर्वात मोठा वाटा शिक्षण व्यवस्थेचा आहे शिक्षणात मोठया प्रमाणात होणा—या

आत्यधुनिक बदलामुळे विद्यार्थी देखिल नवनविन साधने हाताळून स्वताचे ज्ञान वाढवित आहे यातूनच मोठ मोठे शास्त्रज्ञ तंत्रज्ञ यांना चालना मिळत आहे शालेय व महाविद्यालया मध्ये प्रशिक्षण दिले गेल्याने जागतिक महासत्ता समाजल्या जाणारे मोठ मोठया देशाचे बरोबरीने आपल्या देशाचे नाव घेतले जात आहे एखादया जादुई दिव्या प्रमाणे डिजीटायजेशने संपुर्ण देशा मध्ये अमुलाग्र बदल घडवून आणून भारताला ज्ञानाचे केंद्र बनवलेले आहे प्राचिन काळी जो देश उच्च संस्कृती व आदर्श तसेच ज्ञानाचा प्रचंड असा स्त्रोत होता त्याच प्रमाणे आपल्या उच्च संस्कृती बरोबर आजच्या तंत्र वैज्ञानिक संस्कृतीच्या हातात हात घालून आपला देश प्रवास करत आहे आणि आपले आदरणीय राष्ट्रपती ज्यानी २०२२ पर्यंत भारत एक महासत्ता होणेचे भाकित केले होते ते निश्चितपणे सत्यात उतरेल यात शंका नाही.

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कनिष्ठ महाविद्यालयीन स्तरावर भौतिकशास्त्र विषयाची प्रात्याक्षिके करण्यासाठी बहुमाध्यम संचाचा वापर

कैलास सावळीराम शिंदे (Pg. 315-321)

संशोधक विद्यार्थी, *स्वामी रामानंद तीर्थ मराठवाडा विद्यापीठ, नांदेड. महाराष्ट*

डॉ. वैजयंता एन.पाटील

प्रोफेसर व संचालक, *शिक्षणशास्त्र संकुल, स्वामी रामानंद तीर्थ, मराठवाडा विद्यापीठ, नांदेड.* ***महाराष्ट्र***

Abstract

विज्ञानातील भौतिकशास्त्राचा अत्यंत आधुनिक शास्त्र म्हणून अभ्यास चालू आहे. भौतिकशास्त्राचे यांत्रिकी, उष्णता, प्रकाश, ध्वनि, चुंबकत्व, विदयुत, आधुनिक भौतिकशास्त्र इत्यादी प्रमुख विभाग आहेत, तसेच ते परस्परांशी संबंधित आहेत. त्यांचा उपयोग गणित, जीवशास्त्र, रसायनशास्त्र, खगोलशास्त्र, भूगोल वैद्यकशास्त्र इत्यादी सर्वच शाखांमध्ये होतो. इयत्ता अकरावी व बारावी विज्ञान शाखेतील विद्यार्थ्यांना भौतिकशास्त्र विषयातील प्रात्यक्षिके करताना उपकरणे हाताळणे, उपकरणांचे लघुत्तम माप काढणे, आकृती काढणे, सूत्र लिहिणे, प्रयोगाची मांडणी करणे, निरीक्षण करणे, आलेख काढणे, निष्कर्ष काढणे तसेच प्रयोगातील त्रुटी कमी करणे याचे परिपूर्ण प्राथमिक ज्ञान नसते. भौतिकशास्त्राचा अभ्यास करतांना प्रात्यक्षिकांना अनन्य साधारण महत्व असते. प्रात्यक्षिकांच्या माध्यमातून सैध्दांतिक भाग लवकर समजतो व चिरकाल लक्षात राहतो. पारंपरिक पध्दतीने विद्यार्थ्यांना प्रात्यक्षिकांचे अध्यापन केल्यास ते जास्त वेळ स्मरणात राहत नाही, तसेच महाविद्यालयातील भरमसाठ विद्यार्थी संख्येमुळे प्रत्येक विद्यार्थ्याला प्रात्यक्षिक करण्याची संधी मिळतेच असे नाही. बहुमाध्यम संचाचा वापर विद्यार्थी, संगणक, टॅब व मोबाइल याद्वारे त्याला हवे तेव्हा हवे तेथे सहजतेने करतील. बहुमाध्यम संचाच्या वापरातून विद्यार्थ्यांचे आनंददायी अध्ययन होईल, वारंवार केलेल्या सरावामुळे विद्यार्थ्यांत प्रात्यक्षिक कौशल्य विकसित होतात. त्याचप्रमाणे गुणात्मक वाढ झाल्याचे आढळून आले आहे.

मुख्य शब्द : *प्रात्यक्षिके, बहुमाध्यम संच, बहुमाध्यम संचाचे विकसन, बहुमाध्यम संचाच्या परिणामकारकतेचा अभ्यास.*

प्रस्तावना :

विज्ञानाच्या युगात सर्वच क्षेत्रातील संशोधनाला फार महत्वाचे स्थान प्राप्त झाले आहे. शैक्षणिक क्षेत्रात संशोधनामुळे मोलाची भर पडत आहे. शैक्षणिक प्रणालीत नवीन क्षमताधिष्ठित अभ्यासक्रम, नवनवीन अध्यापन पध्दती तंत्रज्ञान यांचा उगम संशोधनातून झालेला आहे. शिक्षणातून व्यक्तीचा सर्वांगीण विकास साधणे व चांगले ज्ञान देऊन सुसंस्कृत बनविणे हे शिक्षणाचे मुख्य उद्दिष्ट आहे. शिक्षणाची उद्दिष्टे साध्य करण्यासाठी नवनवीन मार्ग शोधून काढणे हे संशोधनाचे उद्दिष्ट आहे.

देशाच्या वैज्ञानिक प्रगतीचे मोजमाप करताना भौतिक शास्त्राच्या प्रगतीला अनन्यसाधारण महत्त्व दिले जाते. या विषयाचे अध्ययन करणे हे एकविसाच्या शतकातील संगणक युगात अत्यंत आवश्यक आहे. विद्यार्थ्यांला भौतिकशास्त्राचे महत्त्व

समजले तर विद्यार्थी संगणकाचा उपयोग आपल्या जीवनात पावलोपावली करु शकेल. त्याकरता विद्यार्थ्याच्या मनात भौतिकशास्त्र विषयाबद्दल आवड निर्माण करणे गरजेचे आहे.

सुलभ अध्ययन व अध्यापनासाठी भौतिकशास्त्र ह्या विषयाचा अधिक विचार होणे आवश्यक आहे. भौतिकशास्त्र हा विषय सिध्दांत, नियम व प्रात्यक्षिके या तीन भागात विभागलेला आहे. सिध्दांत व नियम यांच्या पडताळणीसाठी प्रात्यक्षिकांची आवश्यकता आहे. प्रात्यक्षिकांमुळे विषयाचे योग्य तऱ्हेने आकलन होते. इयत्ता अकरावी व बारावी विज्ञान शाखेतील विद्यार्थ्यांना भौतिकशास्त्र विषयातील प्रात्यक्षिकांचे अध्यापन करताना असे लक्षात येते की, एकदा प्रयोगशाळेत प्रयोग केल्यानंतर परीक्षेपर्यंत विद्यार्थ्यांच्या ते लक्षात राहत नाही व प्रात्यक्षिके पुन्हा-पुन्हा प्रयोगशाळेत जाऊन करणे अशक्य असते. म्हणून कनिष्ठ महाविद्यालयीन स्तरावरील इयत्ता बारावी विज्ञान शाखेतील विद्यार्थ्यांना भौतिकशास्त्र विषयातील प्रात्यक्षिके सुलभतेने करता यावी तसेच वारंवार सराव करता यावा यासाठी बहुमाध्यम संचाची निर्मिती करुन तिची परिणामकारकता अभ्यासलेली आहे.

बहुमाध्यम संच संकल्पना :

प्रेषकाचा संदेश ग्राहकापर्यंत पोहचविण्यासाठी ज्यावेळी दोन किंवा दोन पेक्ष जास्त माध्यमांचा (उदा.ध्वनिफित - Audio, चित्रफीत - Video, आकृती - Images, कृतियुक्त हालचाल-Animation, संवाद युक्त आशय - Interactive content इ.) एकाचवेळी वेगवेगळे उपक्रम वापरुन कृतीकार्यक्रम तयार केला जातो, त्यास बहुमाध्यम संच (Multimedia Package) असे म्हणतात. (संदर्भ : शैक्षणिक तंत्र विज्ञानाची विविध रुपे, डॉ.ह.ना.जगताप, पृ.क्र.९५)

मल्टिमीडिया हे व्यक्तिगत कम्प्यूटिंग सॉफ्टवेअर आणि ॲप्लिकेशन आहे जे टेक्स्ट, उच्च दर्जाचे ध्वनी,द्विमिती किंवा त्रिमिती ग्राफिक्स, ॲनिमेशन, फोटो इमेजेस, आणि फुल मोशन व्हीडिओ यांचे एकत्रिकरण करते. (कोलंबिया एनसायक्लेपिडिया)

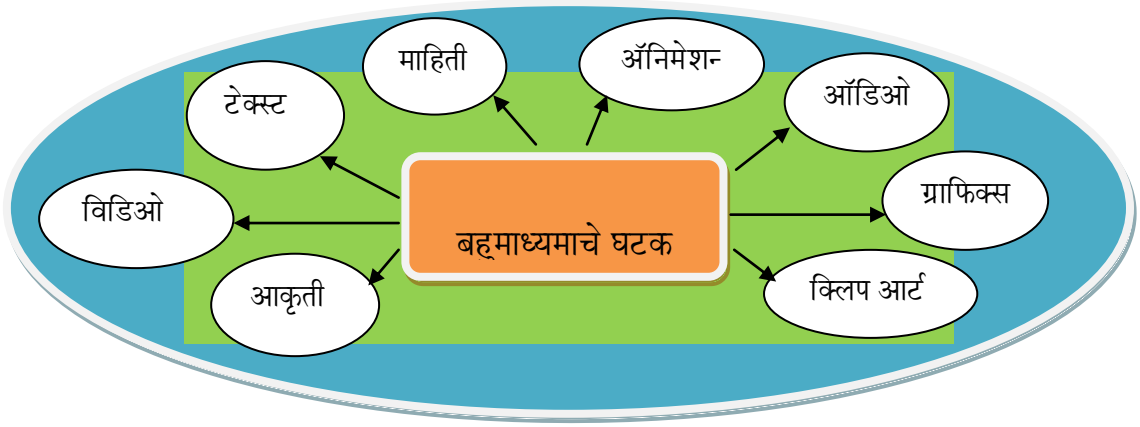
संगणकाने बहाल केलेली इलेक्ट्रॉनिक पध्दत जी वापरणाऱ्याला टेक्स्ट, ध्वनी, कम्प्युटर ग्राफिक्स आणि ॲनिमेशन यांसारख्या विविध प्रकारच्या माध्यमांचे नियंत्रण करणे, एकत्रित करणे आणि हातळणे (काळजी घेणे) यास मदत करते. (ब्रिटानिका कन्साईज डिक्शनरी)

बहुमाध्यम संच फायदे :

- ॲनिमेशनमुळे विद्यार्थ्यातील आंतरक्रियांना चालना मिळते.
- व्हीडीओमुळे विद्यार्थ्यांची कल्पनाशक्ती वाढते.
- बहुमाध्यमांच्या वापरामुळे विद्यार्थ्यांना विविध संकल्पनांचे यथायोग्य आकलन होते.
- ई-लर्निंग, वेब बेस्ड-लर्निंग, बहुमाध्यमांद्वारे अध्ययन इ.बाबी समजतात.
- बहुमाध्यमांच्या वापर भौतिकशास्त्र प्रात्यक्षिकात केल्याने विद्यार्थ्यांच्या कौशल्य व संपादणूकीत वाढ होते.

- बहुमाध्यमांच्या वापरामुळे अध्ययन व अध्यापनात सुलभता येते.
- बहुमाध्यमांच्या वापरामुळे विद्यार्थ्यांचे अवधान केंद्रित करता येते त्यामुळे आकलन चांगले होते.
- विद्यार्थ्यांना त्यांचे ज्ञान चांगल्या पध्दतीने सादर करण्याची संधी मिळते.
- अध्ययन व अध्यापन परिणामकारक होते.

बहुमाध्यमाचे घटक :



बहुमाध्यम संच निर्मितीचे टप्पे :

१. संकल्पनात्मक विश्लेषण व नियोजन

बहुमाध्यमांची सुरुवात एखाद्या कल्पनेने होते, त्या संकल्पनेवर आधारित बहुमाध्यमाची निर्मिती करण्यासंदर्भात प्राथमिक बाबींची चर्चा या टप्प्यावर केली जाते. बहुमाध्यमांसाठी लागणारा आशय, बहुमाध्यम निर्मितीची उद्दिष्टे, त्यासाठी लागणारा वेळ पैसा, उपलब्ध साहित्य, आवश्यक असणारे तंत्रज्ञान इ. बाबींचा विचार या पातळीवर केला जातो.

२. आशयाची निश्चिती :

आशयाच्या स्वरुपावरच मल्टिमीडियाची निर्मिती अवलंबून असते. आशयाच्या अनुषंगाने मल्टिमीडिया आर्टिस्ट मल्टिमीडिया तयार करण्याचे काम करतो.

३. आराखडा निर्मिती :

या टप्प्यावर निश्चित केलेल्या वेळेनुसार बहुमाध्यमाची रचना केली जाते. प्रत्येक पातळीवर कृती व वेळ यांची निश्चिती केली जाते.

४. आशय निर्मिती यंत्रणा :

बहुमाध्यमाच्या निर्मितीसाठी अनेक तंत्रज्ञांची गरज भासते. त्यांची निवड व त्यांच्यावरील जबाबदारीची निश्चिती केली जाते. उदा. टेक्स्ट इडिटर, स्क्रिप्ट लिहिणारे, मल्टिमीडिया आर्किटेक्ट, संगणक तज्ज्ञ इ.

५. बहुमाध्यमांची निर्मिती :

तयार केलेल्या रचनेप्रमाणे बहुमाध्यमाची काटेकोर निर्मिती केली जाते. साऊंड रेकॉर्डिंग, इंटरफेस डिझाईन, ॲनिमेशन निर्मिती, आशयाची मांडणी अशा विविध टप्प्यातून बहुमाध्यमाची प्रत्यक्ष निर्मिती केली जाते.

६. बहुमाध्यम साहित्याची चाचणी :

बहुमाध्यम साहित्याची निर्मिती केल्यानंतर प्रत्यक्ष वापर करुन त्याची योग्यता तपासली जाते. तसेच त्यामध्ये योग्य ते बदल केले जातात.

७. बहुमाध्यम संचाचे दस्त ऐवज :

सॉफ्टवेअर आणि हार्डवेअरसाठी आवश्यक असणारी माहिती एकत्रित करुन ॲप्लिकेशन मध्ये स्थापित केली जाते.

८. बहुमाध्यम संचाचे वितरण :

तयार केलेल्या बहुमाध्य साहित्याचे प्रत्यक्षपणे सादरीकरण केले जाते. त्यासाठी सी.डी., डी.व्ही.डी. व्हाट्सअप, यूट्यूब, इंटरनेट अशा विविध माध्यमांचा वापर केला जातो.

अशा रितीने बहुमाध्यम साहित्याची विविध पातळयांवर काळजीपूर्वक निर्मिती केली जाते.

संशोधनाची उद्दिष्टे :

- इयत्ता बारावी विज्ञान शाखेतील विद्यार्थ्यांना भौतिकशास्त्राचे प्रात्यक्षिक करतांना येणाऱ्या अडचणींचा शोध घेणे.
- इयत्ता बारावी विज्ञान शाखेतील विद्यार्थ्यांना भौतिकशास्त्राचे प्रात्यक्षिक करतांना येणाऱ्या अडचणी सोडविण्यासाठी बहुमाध्यम संचाची (Multimedia Package) निर्मिती करणे.
- इयत्ता बारावी विज्ञान शाखेतील विद्यार्थ्यांना भौतिकशास्त्राच्या प्रात्यक्षिकातील अडचणी सोडविण्यासाठी विकसित केलेल्या बहुमाध्यम संचाची परिणामकारकता अभ्यासणे.

संशोधनाची परिकल्पना :

इयत्ता बारावी विज्ञान शाखेतील विद्यार्थ्यांना भौतिकशास्त्राचे प्रात्यक्षिके करण्यासाठी बहुमाध्यम संचाचा (मल्टिमीडिया पॅकेज) वापर केल्याने त्यांच्यात प्रात्यक्षिक कौशल्ये विकसित होतात. तसेच त्यांच्या संपादणुकीत वाढ होते.

संशोधन पध्दती :

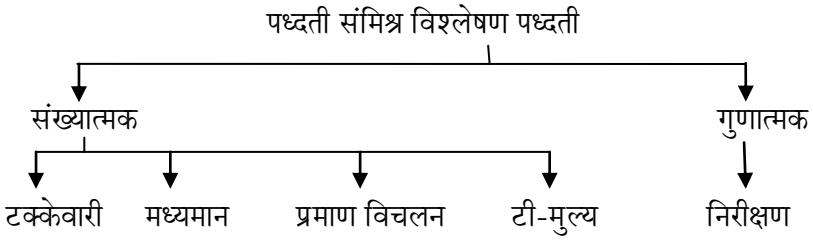
प्रस्तुत संशोधनाची प्रामुख्याने वर्णनात्मक पध्दती व प्रायोगिक पध्दती अशा संमिश्र संशोधन पध्दती वापरलेल्या आहेत.

संशोधनाची साधने :

- पूर्व प्रात्यक्षिक चाचणी
- निरीक्षण

- तज्ज्ञांच्या मुलाखती (मुलाखत सूची)
- उत्तर प्रात्यक्षिक चाचणी (संपादणूक चाचणी)

संख्याशास्त्रीय विश्लेषण :



प्रायोगिक संशोधन पध्दती :

प्रायोगिक संशोधनात प्रायोगिक पध्दतीचा अवलंब केला जातो. प्रायोगिक पध्दती ही वैज्ञानिक पध्दती असून शैक्षणिक संशोधनात तिचा वापर होतो. वैज्ञानिक पध्दतीवर ती अवलंबून असली तरी तिचे वैशिष्ट्ये प्रयोग हे आहे. इयत्ता बारावी विज्ञान शाखेतील विद्यार्थ्यांना प्रयोग करताना येणाऱ्या अडचणी सोडविण्यासाठी तसेच बहुमाध्यम संचाची परिणामकारकता पडताळून पाहण्यासाठी प्रायोगिक पध्दतीची निवड करण्यात आली.

प्रायोगिक अभ्यासाचे प्रकार :

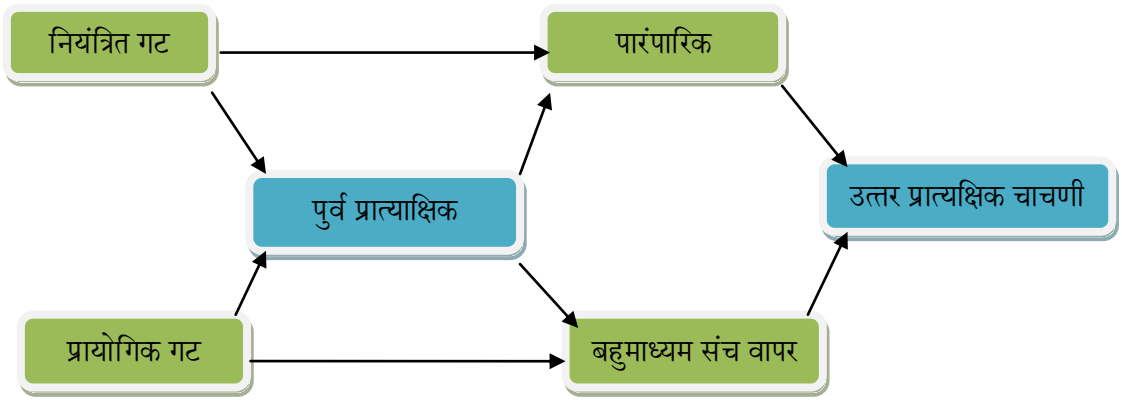
- पूर्व -प्रायोगिक अभिकल्प
- वास्तव-प्रायोगिक अभिकल्प
- प्राय - प्रायोगिक अभिकल्प
- सहसंबंधात्मक आणि एक्स पोस्ट फॅक्टो अभिकल्प

वास्तव-प्रायोगिक अभिकल्प :

वास्तव-प्रायोगिक अभिकल्पात मध्यस्थ चलावर नियंत्रण ठेवणे शक्य असल्याने इतर पध्दतींपेक्षा ही पध्दत सोयीची असते. त्यामुळे या पध्दतीला प्राधान्य दिले जाते.

यामध्ये एका गटाला उपचार दिला जातो व दुसऱ्या गटाला पूर्वीच्याच सूचना दिल्या जातात. गटांची चाचणी घेतली जाते. पुनर्मुल्यांकन केले जाते व दोन्ही गटांची तुलना केली जाते. ज्या गटाला उपचार दिल्या त्यांच्या कौशल्यात तसेच प्राप्तांकात वाढ झाली तर प्राप्तांकात झालेली वाढ व उपचार पध्दती यात साहचार्य आहे. याची खात्री देता येते. गटात झालेला बदल हा उपचारामुळे झालेला आहे हा निष्कर्ष काढता येतो. प्रस्तुत संशोधनासाठी साठ विद्यार्थ्यांची यादृच्छिक पध्दतीने निवड केली. पैकी तीस विद्यार्थी प्रायोगिक गटासाठी व तीस विद्यार्थी नियंत्रित गटासाठी निवडले.

पूर्व - उत्तर प्रात्यक्षिक चाचणी ओघ तक्ता :



निष्कर्ष - चर्चा :

संशोधन शिक्षकाच्या भूमिकेतून अध्यापनाचे कार्य करीत असतांना असे निदर्शनास आले की, इयत्ता अकरावी व बारावी विज्ञान शाखेतील विद्यार्थ्यांना भौतिकशास्त्र विषयातील प्रात्यक्षिके करतांना उपकरणे हाताळणे, उपकरणांचे लघुत्तम माप काढणे, आकृती काढणे, सूत्र लिहिणे, प्रयोगाची मांडणी करणे, निरीक्षण करणे, आलेख काढणे, निष्कर्ष काढणे तसेच प्रयोगातील त्रुटी कमी करणे याचे परिपूर्ण प्राथमिक ज्ञान नसते. संशोधकाला गेल्या वीस वर्षापासून अध्यापनाचे कार्य करतांना ही समस्या सातत्याने जाणवते आहे.

भौतिकशास्त्र विषयाचे अध्यापन करतांना निरनिराळया अध्यापन पध्दती, शैक्षणिक साधने व प्रयोगाद्वारे हा विषय सोपा, सुटसुटीत करणे गरजेचे आहे. विद्यार्थ्यांमध्ये विविध प्रायोगिक कौशल्यांची रुजवणूक करुन त्यांना सैद्वांतिक भाग प्रयोगाच्या माध्यमातून शिकविला तर विद्यार्थ्यांमध्ये विषयाबद्दलची आवड तसेच गुणात्मक वाढ झाल्याचे आढळून येते.

कनिष्ठ महाविद्यालयातील इयत्ता बारावी विज्ञान शाखेतील विद्यार्थ्यांना भौतिकशास्त्र प्रात्यक्षिके करतांना अडचणी येतात. सदर अडचणी सोडविण्यासाठी संशोधकाने बहुमाध्यम संचाची (मल्टिमीडिया पॅकेज) निर्मिती करण्याचे ठरविले आहे. जेणेकरुन विद्यार्थ्यांना भौतिकशास्त्र विषयातील प्रात्यक्षिके करतांना अडचणी येणार नाहीत. बहुमाध्यम संचाच्या वापरामुळे विद्यार्थ्यांचा प्रत्यक्ष प्रात्यक्षिक कार्यात कृतियुक्त सहभाग असल्याने प्रात्यक्षिक कार्य अधिक सुलभ होणार आहे. त्यामुळे भौतिकशास्त्र विषयातील प्रात्यक्षिके सुलभ होऊन त्यांच्या प्रायोगिक कौशल्यात तसेच प्रात्यक्षिक संपादणुकीत वाढ होईल. त्याचप्रमाणे विद्यार्थी सैध्दांतिक भाग प्रात्यक्षिकांच्या मदतीने पडताळून पाहू शकतील, त्यामुळे भौतिकशास्त्र विषयातील संकल्पना दृढ होण्यास मदत होईल.

समारोप :

प्रस्तुत संशोधनामध्ये भौतिकशास्त्र विषयाचे प्रात्यक्षिके करण्यासाठी बहुमाध्यम संचाचे विकसन करण्याचे ठरविले आहे. सदर बहुमाध्यम संचाच्या माध्यमातून विद्यार्थ्यांमध्ये प्रयोगिक कौशल्ये प्रयोगातील अचूकता, त्रुटी कमी

करणे तसेच प्रयोग करतांना घ्यावयाची काळजी सविस्तरपणे विस्तृत करण्यात आली. सदर संशोधनाचा फायदा इयत्ता बारावी विज्ञान शाखेतील विद्यार्थ्यांबरोबर कनिष्ठ महाविद्यालयीन स्तरावर अध्यापन करणा-या शिक्षकांना देखील होईल.

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तंत्रज्ञान वापराची अध्ययन अध्यापनातील भूमिका

डॉ. किरण सहादू खैरनार *(Pg. 322-325)*

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आजचे युग हे तंत्रज्ञानाचे युग आहे. आज अनेक क्षेत्रांमध्ये तंत्रज्ञानाचा उपयोग मोठ्या प्रमाणात केला जात आहे. शिक्षणाच्या अध्ययन आणि अध्यापन या प्रकियेमध्ये सुध्दा तंत्रज्ञानाचा वापर होत आहे. शिक्षकाला याबाबत सखोल माहिती असणे आवश्यक ठरते. केवळ भाषिक, शाब्दिक अनुभवाद्वारे दिले जाणारे शिक्षण कायम स्वरुपाचे नसते त्यामुळे अध्यापन प्रक्रिया प्रभावी न होता कंटाळवाणी होण्याची शक्यता असते म्हणून अध्ययन करणाऱ्या विद्यार्थ्यांला नवनवीन तंत्रज्ञा-ना-नूसार ज्ञान देणे गरजेचे ठरते. ऐकलेले विसरले जाते, पाहिलेले लक्षात रहाते कारण डोळा या ज्ञानेंद्रियाव्दारे ८२% तर कान या ज्ञानेंद्रियाद्वारे ११% तर जिभ, त्वचा, नाक या ज्ञ ाा-नेंद्रियाद्वारे ७% ज्ञान मिळविता येते. शिक्षकांनी अध्यापनात बहूविध तंत्रज्ञानाचा वापर केला असता विद्यार्थ्यांच्या मनात आशयासंबंधीच्या कल्पना मनपटलावर ठळकपणे कोरल्या जातात. घटकातील आशयाकडे डोळसवृत्तीने पाहण्याची सवय विद्यार्थ्यांना लागते.

तंत्रज्ञान हे मानवी जीवनासाठी वरदान आहे. जीवनाच्या सर्व क्षेत्रात त्याने बदल घडून येत आहे. अशा तंत्रज्ञ ानाने मानवी जीवनाच्या संबंधित सर्व क्षेत्रावर प्रभाव टाकलेला दिसून येतो. तंत्रज्ञानाच्या प्रभावातून शिक्षण प्रणाली विभक्त राहू शकत नाही. शिक्षणक्षेत्रात तंत्रज्ञानाच्या उपयोगामुळे, वापरामुळे अध्ययन अध्यापनात प्रभावीपण येत आहे. तंत्रज्ञानाचा परिणाम शैक्षणिक विकास, शैक्षणिक रचना, अभ्यासक्रम रचना याबरोबरच शिक्षकांच्या कामावर सुद्धा होत आहे. कारण शिक्षकाला अध्यापनासाठी वेगवेगळ्या साधनांची मदत मिळत आहे. [illegible]मीत-कमी वेळामध्ये, कमीत-कमी खर्चामध्ये, जास्तीत जास्त लोकांपर्यत, जास्तीत जास्त प्रभावीपणे, जास्तीत जास्त ज्ञान कसे पोहोचले याचा विचार तंत्रज्ञानाने केला जातो.

तंत्रज्ञानामुळे जगण्याचे संकेत झपाट्याने बदलत आहे. तंत्रज्ञा-न झपाट्याने प्रगती साधत आहे. आज दूरदर्शन, संगणक, इंटरनेट, ई-मेल यासार[illegible]या माध्यमां-नी ज्ञान प्रसारणाच्या बाबतीत अभुतपूर्व अशी क्रांती घडवून आणलेली आहे. दूरदर्शन, संगणक, दूरशिक्षण यासारख्या अनेक माध्यमाद्वारे कमी वेळात जास्तीत जास्त लोकांना शिक्षण देण्याचा प्रयत्न होतांना दिसत आहे.

आजच्या स्पर्धात्मक तसेच गतिमान युगात जर शिक्षक पारंपरिक पद्धतीने विद्यार्थ्यांना ज्ञान देणार असेल तर विद्यार्थी अशा शिक्षकाला स्वीकारणार नाहीत म्हणून शिक्षकाला आपले अस्तित्व टिकवून ठेवण्यासाठी, स्वत:चे ज्ञान अद्ययावत ठेवण्यासाठी विविध आधुनिक तंत्रज्ञानाचा वापर अध्ययन अध्यापनामध्ये करणे गरजेचे आहे. सध्याच्या खाजगीकरणाच्या युगात कार्यक्षमतेला व गुणवत्तेला प्राधान्य प्राप्त होत आहे. शिक्षकांनी पारंपरिक अध्यापन पद्धती बरोबरच नवनवीन अध्यापन तंत्रे, नवनवीन शैक्षणिक साधने, नवनवीन तंत्रज्ञानाचा स्वीकार करुन त्याचा अध्यापनात योग्यरित्या वापर करुन घेतला पाहिजे.

शाब्दिक, चित्रपूर्ण पुस्तकातील आशयासंबंधी तसेच सांख्यिकीय माहिती आत्मसात करणे, त्या माहितीवर योग्य प्रक्रिया करणे, माहिती साठवून ठेवणे, आवश्यक तेव्हा ती वापरणे यासाठी संगणक, दूरसंचार व इलेक्ट्रॉनिक्स माध्यमांचा वापर करणे म्हणजे तंत्रज्ञा-न होय.

तंत्रज्ञान म्हणजे शास्त्रीय संशोधनाचे व्यक्ति व मानव समाज यांच्या गरजा भागविण्यासाठी केलेले सुनियोजित उपयोजन होय. समाजाच्या गरजा समाधानपूर्वक भागविण्यासाठी जी साधने किंवा कौशल्ये वापरली जातात त्याचा संघ म्हणजे तंत्रज्ञान होय. थोडक्यात वैज्ञानि ज्ञानाचा व्यावहारिक उपयोग म्हणजे तंत्रज्ञा-न होय. तंत्रज्ञानामुळे अध्ययन-अध्यापन प्रक्रियेत सुधारणा घडवून अवघड विषय व संकल्पना सोप्या होण्यास मदत होते.

जॉन लिडहॅम यांच्यामते 'शिक्षण तंत्रज्ञान म्हणजे शिक्षणाच्या वाढीकरीता नवीन तंत्राचा, पद्धतीचा वापर होय.' यातून शिक्षकाला नवीन भूमिका साकाराव्या लागणार आहेत. यातील काही पारंपरिक असतील तर ही नवीन असतील. शिक्षण प्रक्रियेच्या समृद्धीसाठी विविध शास्त्रीय पद्धतीची, साधनांची सुव्यवस्थित बांधणी करण्यासाठी केलेले प्रयत्न म्हणजेच तंत्रज्ञान होय. आधुनिक शैक्षणिक पद्धती, तंत्र, मूल्यमापन, माध्यम, आदान प्रदान, शिक्षण व विद्यार्थी यांच्यामध्ये जोडला जाणारा दुवा म्हणून तंत्रज्ञानाचे महत्त्व स्पष्ट करता येईल.

तंत्रज्ञानामुळे पुढील क्षमतांचा विकास होण्यास मदत होते.

१) अध्ययन अध्यापनात प्रभूत्व

२) गुणवत्तेच्या क्षमतांचा विकास

३) अमूर्त कल्पनांना मूर्त रुप

४) माहितीचे, ज्ञानाचे संपादन व संक्रमण

५) संप्रेषणात गतिमानता व प्रभावीपणा

६) सेवा क्षमतेचा विकास

७) विविध भाषिक क्षमतांचा विकास

८) विविध ज्ञानेंद्रियांची अनुभव क्षमता

९) स्वयंअध्ययन क्षमता

तंत्रज्ञानाद्वारे अध्यय-न प्र□ाली : तंत्रज्ञान ही कल्पना अभियांत्रिकी उद्योग व्यवस्थापनाकडून शिक्षणक्षेत्रात आलेली आहे. प्रणालीमध्ये विविध घटक असून ते एका विशिष्ट अशा नियमित बंधनाने गुंफलेले असतात असे आपणास म्हणता येईल.

अध्ययन अध्यापन

तंत्रज्ञानामुळे आज शिक्षणाची दिशा पूर्णपणे बदलत आहे. शिक्षकांना विविध माहिती तंत्रज्ञानाच्या साहाय्याने त्वरीत मिळू शकते. त्यामुळे जगभरातील शिक्षण क्षेत्रातील नवनवीन संशोधने, शिक्षणातील बदल, उपाययोजना, आंतरक्रिया, नाविण्यपूर्ण अध्ययन साहित्याची निर्मिती होऊन त्यांची देवाणघेवाण होते. अभ्यासक्रम आराखडा, अभ्यासक्रम रचना, अभ्यासक्रम निर्मिती, अभ्यासक्रम तत्त्वे, माहितीचे संकलन, पाठ्यपुस्तके, तयार करण्यासाठी तसेच मार्गदर्शन करण्यासाठी तंत्रज्ञानाचा उपयोग होतो.

मूल्यमाप-न

अध्ययन अध्यापनानंतर विद्यार्थ्यांमध्ये अपेक्षित वर्तन बदल कसा झाला याचा पडताळा घेणे म्हणजेच मूल्यमापन होय. प्रश्नपत्रिका तयार करणे, परीक्षांचे निकाल तयार करणे, गुणपत्रके तयार करणे, गुणवत्ता यादी तयार करणे, तंत्रज्ञानामुळे अत्यंत जलदपणे व सहजतेने करणे शक्य झाले आहे.

अभ्यासक्रम

१) तंत्रज्ञानाच्या विविध साधन सुविधांचा उपयोग करणे.

२) विद्यार्थ्यांच्या क्रिया-कौशल्यांच्या विकासासाठी प्रेरणा देणे.

३) तंत्रज्ञानाच्या माध्यमातून शैक्षणिक संशोधनाची तसेच विविध उपक्रमांची माहिती मिळविणे.

४) बौद्धिकदृष्ट्या मागासलेल्या विद्यार्थ्यांच्या अध्ययनासाठी विविध माध्यमांची निवड करणे.

५) व्हिडीओ कॉन्फरन्सींगच्या माध्यमातून तज्ज्ञ व्यक्तींच्या मार्गदर्शनाचा लाभ मिळतो.

तंत्रज्ञा-न वापरासंबंधी शिफारशी

१) डी.एड्, बी.एड, एम.एड, स्तरावर शैक्षणिक तंत्रज्ञानाचा वापर अनिवार्य करावा.

२) अभ्यासक्रमात प्रात्यक्षिक कार्याचा व्यापक समावेश करावा.

३) विविध तंत्रज्ञान हाताळणीचे प्रशिक्षण देण्यासाठी तज्ज्ञ व्यक्तींची नियुक्ती □रावी.

४) प्रात्यक्षिक कार्यवाहीचे काटेकोरपणे पालन करण्यात यावे.

५) तंत्रज्ञानाची उपलब्धता असल्याशिवाय महाविद्यालयाला मान्यता देऊ नये.

६) शिक्षक प्रशिक्षकांना विविध तंत्रज्ञानाच्या अनुषंगिक उद्बोधन व उजाळा वर्गाचे आयोजन करण्यात यावे.

७) ज्ञानाधिष्ठित शिक्षक निर्माण करण्यासाठी अभ्यासक्रमामध्ये अध्ययनाच्या प्रक्रिया स्पष्ट करणारी तंत्रे, पद्धती, कौशल्ये विकसित करणे.

८) सैद्धांतिक भागापेक्षा सराव व प्रात्यक्षिक या भागावर अधिक भर द्यावा.

९) शालेय चित्रवाणी कार्यक्रम तयार करुन त्याचा योग्य उपयोग करावा.

१०) तंत्रज्ञानाद्वारे अध्ययनकर्त्यांना वैयक्तिकरित्या अभ्यास करण्याची संधी प्राप्त करुन घ्यावी.

११) तंत्रज्ञानाद्वारे अध्ययन-अध्यापन साहित्याची ओळख, शिक्षण सुधारणा व जीवन शिक्षण सुधारण्यासाठी उपयोग करुन घ्यावा.

१२) तंत्रज्ञानाचे वर्तमानातील व भविष्यातील वाढते महत्त्व आजच्या शिक्षकांनी लक्षात घेणे व त्यानुसार अध्ययन-अध्यापनात वापर करणे आवश्यक आहे.

समारोप

तंत्रज्ञानाच्या विविध माध्यमांचा वापर अध्ययन-अध्यापनात करण्यात आला तर निश्चितच पाठ्यांशावर प्रभुत्व निर्माण होईल. अध्ययन-अध्यापनाच्या प्रत्येक टप्प्यावर तंत्रज्ञान अत्यंत महत्त्वाची भूमिका बजावते. तंत्रज्ञानाची विविध माध्यमे अध्ययनाची स्त्रोत आहेच शिवाय प्रत्यक्ष कार्यवाही, कार्याचा पडताळा व मूल्यमापनासाठी उपयुक्त दिसून येतात. शिक्षणक्षेत्रात कार्य करणाऱ्या प्रत्येक व्यक्तीने तंत्रज्ञानाच्या बाबतीत सक्रीय राहणे आवश्यक आहे. शिक्षण क्षेत्रातील बदलांचे सहर्ष आणि कृतीयुक्त स्वागत करणे अपेक्षित आहे. शिक्षणातील उदयोन्मु आव्हाने पेलण्यासाठी तंत्रज्ञानाचा उपयोग प्रशिक्षण महाविद्यालयात होणे गरजेचे आहे की, ज्यामुळे शिक्षक-प्रशिक्षणातून गुणवत्तापूर्ण, सक्षम, सामाजिक बांधिलकीयुक्त व कर्तव्यदक्ष शिक्षक निर्माण होतील.

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डिजिटलकरणाचा शिक्षणावरील प्रभाव

प्रा. प्रताप भाऊसाहेब आत्रे *(Pg. 326-330)*

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Abstract

विज्ञानात होत चाललेली प्रगती, ज्ञान क्षेत्रात होत असलेली वाढ, शिक्षण क्षेत्रात नवनव्याने प्रवेश करणारे मानव समूह यांचा शिक्षणावर होणारा परिणाम, शिक्षण क्षेत्रात काम करणाऱ्या व्यक्तीची जबाबदारी, नवीन शिक्षण पद्धती, साधने, तंत्रे यासाठी मदत करणारे अप्लीकेशन, ज्ञान मिळविण्याची व अध्यापनाची माध्यमे, माहिती मिळविण्याची साधने, ज्ञान वापरण्याची उपकरणे व त्याचा शि वर झालेला परिणाम याची सविस्तर चर्चा प्रस्तुत लेखात केलेली आहे.

उद्दिष्ट्ये

1) 21 व्या शतकामधील डिजिटलकरणाचा शिक्षणावरील प्रभाव जाणून घेणे.
2) शिक्षणात वापरण्यात येणाऱ्या ॲप्लिकेशन सॉफ्टवेअरचे उपयोग माहिती करुन घेणे.
3) इंटरनेट, मल्टीमिडियाचा शिक्षणाच्या विकासासाठी झालेला फायदा जाणून घेणे.
4) तंत्रज्ञानाचे शैक्षणिक उपयोजन जाणून घेणे.

प्रास्ताविक

आज 21 व्या शतकामध्ये डिजिटलीकरण हा शब्द सामान्यातील सामान्य व्यक्तिलाही परिचित झालेला आहे. मानवी जीवनातील प्रत्येक क्षेत्रावर डिजिटलकरणाने आक्रमण केलेले आहे. शिक्षण हे तर मानवाने स्वत:च्या प्रगतीसाठी स्वत: निर्माण केलेले क्षेत्र आहे. मानवाची सांस्कृतिक आणि सामाजिक प्रगती त्याने घेतलेल्या व होत असलेल्या शिक्षणावर अवलंबून असते. डिजीटल करणामध्ये अध्ययन-अध्यापन प्रक्रिया परिणामकारक होण्यासाठी विविध माध्यमे वापरली जातात. उदा. दूरदर्शन, व्हीडीओ, संगणक, शैक्षणिक सॉफ्टवेअर, पॉवर पॉईट, कोरेल ड्रॉ, मेलमर्ज, इंटरनेट, मल्टिमिडीया, विविध सर्च इंजिने इत्यादी या माध्यमांच्या साह्याने 21 व्या शतकात अध्ययन-अध्यापन परिणामकारकता वाढविण्याचा प्रयत्न केला जात आहे.

परिणामकारकता वाढविण्यासाठी खालील गोष्टी विचारात घ्यावा लागतात.

अ) अध्ययनाची गुणवत्ता किंवा प्रभुत्त्वाचे प्रमाण वाढविणे.
ब) अपेक्षित ध्येय साध्य करण्यासाठी किमान वेळेचा उपयोग करणे.

) अध्ययनाची गुणवत्ता कमी होऊ न देता जास्तीत जास्त विद्यार्थ्यांना शिकविण्याची क्षमता शिक्षकांमध्ये विकसित करणे.

ड) गुणवत्तेला बाधा न आणता किंमत कमी करणे.

थोडक्यात, अध्ययनाच्या गुणवत्तेला धक्का न लावता कमीत कमी खर्चामध्ये कमीत कमी वेळात अपेक्षित ध्येय गाठण्यासाठी तंत्रज्ञानाचा प्रभावी वापर करणे म्हणजे डिजीटलकरणाची परिणामकारकता होय. डिजीटलकरणामध्ये खालील उपकरणे वापरली जातात.

1) डेटाबेस व्यवस्थापन प्रणाली (Data Base Management System)

संगणकात विविध प्रकारची माहिती साठविली जाते. परंतू ही माहिती एका विशिष्ट पद्धतीने संग्रहित करणे व तिचे व्यवस्थापन करणे तितकेच महत्त्वाचे असते. डेटाबेस व्यवस्थापन प्रणाली हा अशा प्रकारचा प्रोगॅम आहे की, जो डेटाबेसच्या संरचनेवर नियंत्रण ठेवतो. डेटाबेस मध्ये आपण कोणत्याही प्रकारची माहिती संग्रहित करु शकतो व आवश्यक त्यावेळी तिचा यथायोग्य वापर करु शकतो.

2) डेटाबेसचे उपयो

1. विद्यार्थ्यांना अध्यापनातील विविध प्रकारचा तपशील नोंदवून ठेवण्यासाठी व त्या तपशीलाची वेळोवेळी मदत घेण्यासाठी डेटाबेसचा उपयोग होतो.
2. शालेय दप्तर, ज्यामध्ये जनरल रजिस्टर, मस्टर, पगारपत्रके, फी पत्रके इत्यादी नोंद ठेवण्यासाठी व त्याचा पुन्हा पुन्हा कार्यालयीन कामकाजासाठी उपयोग करता येतो.
3. शाळेतील विद्यार्थ्यांना प्रत्येक विषयाचे स्वाध्याय द्यावे लागतात. त्यासाठी विविध विषयांचे स्वाध्याय नोंदवून ठेवले तर आवश्यक त्या वेळी आवश्यक ते स्वाध्याय निवडून ते स्वाध्याय विद्यार्थ्यांना देणे सुलभ होते, कारण यातील बहुतेक स्वाध्याय हे वर्षानुवर्षे द्यावे लागतात. एखाद्या शिक्षकाच्या अनुपस्थितीत देखील दुसऱ्या शिक्षकाला स्वाध्याय देता येऊ शकतात.

3) मल्टिमिडीया (Multimedia)

मल्टिमिडीया मधील ॲनिमेशन्स, आवाज व आरेखनामुळे माहिती दृक स्वरुपात प्राप्त होते व अध्ययन सुकर होते. मल्टीमिडीयामुळे अवधान खेचले जाते व टिकवून ठेवले जाते. एरवी कंटाळवाणी वाटणारी माहिती, आरेखन, दृश्य व आवाजामुळे मनोरंजक बनते. मल्टिमिडीयामुळे एकतर्फी अध्ययन-अध्यापन प्रक्रिया दुतर्फी करता येते. अध्यापनातील विविध घटक मल्टीमिडीयाचा वापर करुन अधिक नैसर्गिकपणे व योग्य क्रमाचा वापर करुन सादर करता येतात. विद्यार्थ्यांचा प्रत्यक्ष कृतीयुक्त सहभाग असल्यामुळे अध्ययन सुरु असतांनाच मूल्यमाप-न र चुका दुरुस्त करणे केलेल्या कृतीचा ताबडतोब फिडबॅक देणे या गोष्टी सहजपणे करता येतात.

4) ग्राफिक्स सॉफ्टवेअर

संख्यात्मक माहितीचा विचार करुन चित्रात्मक स्वरुपात सादरीकरण करणाऱ्या पॅकेजसना ग्राफिक्स पॅकेजस् म्हणतात. स्केचेस तयार करणे, ते स्केचेस लहान मोठे करणे, सरकविणे, झुम करणे, निर्मिती करणे यासाठी डिझाईन पॅकेजस वापरतात. तर कलाकारांसाठी पेंट य पॅकेजसा उपयोग चित्र काढणे, रंगविणे, रंगाचा शेडस् तयार करण्यासाठी होतो. खूप मोठ्या माहितीचे सारांश रुपाने व चित्र रुपाने सादरीकरण करण्यासाठी ॲनालिसिस व प्रेझ ोटेंशन पॅकेजसचा उपयोग होतो. तसेच शहर नियोजन, लो□सं□या सर्वे□□ भू-सर्वेक्षण इत्यादीसाठी नकाशातील माहती स्पष्ट होण्यासाठी जी.आय.एस. (GIS) हे पॅकेजस् वापरतात.G.I.S. कडून मिळणारी माहिती, नकाशे, तक्ते, आलेख यांचे एकत्रीकरण करुन मिळविता येते.

5) शैक्षणिक सॉफ्टवेअर्स

शिक्षणात संगणकाचा विविध प्रकारे वापर करता येतो. टेलरक याने ट्युटर, टुल, टयुटी असे तीन गट सूचविले आहे.

5.1) ट्यूटर (Tutor)

या प्रकारात संगणक शिक्षकांची भूमिका पार पाडतो. संगणक काही माहितीचे सादरीकरण करतो. त्यातून विद्यार्थ्यांना समस्या देऊन ती सोडवायला सांगितली जाते. संगणक विद्यार्थ्यांच्या प्रतिसादाचे मूल्यमापन करतो, यामध्ये चार गट पडतात.

1. **ड्रिल आणि प्रॅक्टिस-** विद्यार्थी पाठांतरास मदत करणे. गणिती आकडेमोड, स्पेलिंग पाठांतर, बेरजेचा सराव इत्यादी गोष्टीसाठी उपयुक्त.
2. **ट्युटोरियल-** क्रमान्वित अध्ययनावर आधारित ट्युटोरियल प्रोग्राम्सची रचना असते. लहानसा मुद्दा समजावून सांगितला जातो. त्या माहितीवर आधारित प्रश्न विचारुन प्रतिसाद देण्यास सांगितले जाते. प्रतिसादावर आधारित पुनर्भरण दिले जाते.
3. **सिम्युलेश-न-** सिम्युलेशन मुळे कमीत कमी खर्चात परिस्थिती घटक, प्रसंग इत्यादी संबंधित अनुभवांशी आंतरक्रिया करण्याची संधी विद्यार्थ्यांना उपलब्ध करून दिली जाते व त्यातून विद्यार्थ्यांचे अध्ययन घडवून आणले जाते.
4. **□म्स-** अध्ययनासाठी प्रेरणेची गरज असते. खेळातून अध्ययनासाठी आवश्यक ती प्रेरणा देता येते, त्यास गेम्स पॅकेजस् उपयुक्त आहे.

5.2) टूल (Tool)

1. शब्द संस्करणाचे साधन म्हणून संगणक इलेक्ट्रानिक टाईपरायटर म्हणून वापरता येतो.
2. शिक्षक व्यवस्थापनाचे साधन म्हणून वापर करतात.
3. क्रिएटिव्ह आणि कमर्शियल आर्ट सरावासाठी उपयोग होतो.
4. ाफ काढून देणारे प्रभावी साधन म्हणून वापर करता येतो.
5. सिम्युलेशन तंत्राचा प्रभावी वापर करता येतो.
6. ध्वनिमुद्रण करणे, ध्वनिफित ऐकण्यासाठी संगणक उपयुक्त

5.3) ट्यूटी (Tutee)

या प्रकारचा संगणक विद्यार्थी बनतो, वापरणारा शिक्षक बनतो. यामध्ये विद्यार्थ्यांने स्वत:ची समस्या सोडवून घेण्यासाठी प्रोग्राम करुन संगणकाकडून ते काम करुन घ्यायचे असते.

6) इंटरनेट (Internet)

इंटरनेट हे जागतिक स्वरुपाचे माहितीचे देवाण-घेवाण करणारे जाळे आहे. जगभरातील विविध शैक्षणिक संस्था व त्यामध्ये चालणारे शैक्षणिक संशोधन कार्य या सर्व बाबी इंटरनेटशी जोडलेल्या असल्यामुळे ही माहिती काही सेकंदात घरबसल्या आपल्याला सहज उपलब्ध होते. इंटरनेटमुळे आपल्याला विविध सुविधांचा वापर करता येतो.

6.1) ई-मेल (E-mail)

पत्रव्यवहार, माहितीची देवाण-घेवाण लवकर होण्यासाठी ई-मेल (E-mail) ही सुविधा उपलब्ध आहे.

6.2) वर्ल्ड वाईड वेब (World Wide Web)

मनोरंजन, क्रिडा, प्रश्नोत्तरे, बातम्या, दररोजच्या घडामोडी, विज्ञानातील नवनवीन शोध, ऐतिहासिक माहिती इत्यादी भांडार म्हणून याला विश्वव्यापी जाल असे म्हणतात.

6.3) सर्च इंजिन (Search Engine)

तुम्ही एखादा शब्द किंवा विषय शोधण्यासाठी दिला असता काही मिनिटात त्या संबंधीच्या माहितीची, संकेतस्थळाची यादी तुम्हाला मिळते.

6.4) वेब डिरेक्टरी (Web Directory)

वेब डिरेक्टरी मध्ये वेगवेगळ्या माहितीची विषयावर यादी केलेली असते. या सर्व माहितीतून आपल्याला हवी असणारी माहिती शोधण्यासाठी मार्गदर्शन केले जाते.

6.5) □ोफर स्पेस (Gopher Space)

500 हून अधिक इंटरनेट जाळ्याला गोफर स्पेस म्हणतात. गोफरसाठी Vernica हे साधन वापरले जाते. एका सर्व्हरकडून उत्तर न मिळाल्यास दुसऱ्या सर्व्हरकडून उत्तर मिळविले जाते.

6.6) चॅट रुम (Chat Room)

इंटरनेटच्या माध्यमातून जगातील विविध शिक्षकांशी, विद्यार्थ्यांशी, शिक्षण तज्ज्ञांनी चर्चा करता येऊ शकते.

वरील उपकरणाचा शिक्षणाच्या अध्ययन अध्यापन प्रक्रियेत विकासात्मक परिणाम झालेला दिसतो.

समारोप

आर्थिक आणि सामाजिक गरजांपासून, बदलापासून शिक्षण वेगळे □रता येणार नाही. सध्याच्या समाजाच्या वैज्ञानिक आणि तांत्रिक गरजा बदलत आहे, त्यासाठी आपणास डिजीटलकरणाचा विचार करावा लागेल. चांगल्या प्रतीचे शिक्षण, शिक्षणातील गुणवत्ता सुधारणा ही डिजीटलकरणाचा एक परिपाक आहे. प्रत्येक गुणागणिक अत्यंत जलद गतीने ज्ञानात बदल होतो म्हणून ज्ञान संचयन, ज्ञा-न सं□म□ ज्ञान सबलीकरणासाठी डिजीटलकरण फायद्याचे आहे.

संदर्भ

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डिजिटल शिक्षण

प्रा . वायळ लक्ष्मण सिताराम *(Pg. 331-332)*

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सध्याचे युग हे ज्ञा-न, विज्ञान व तंत्रज्ञानाचे युग म्हणून ओळखले जाते. या तंत्रज्ञानाच्या युगात तंत्रज्ञा-ाने प्रत्येक क्षेत्रामध्ये आपला ठसा उमटविला आहे. उदा. उद्योग, व्यापार, राजकीय, आर्थिक, सामाजिक, सांस्कृति, कला याबरोबरचच शिक्षण क्षेत्रातही तंत्रज्ञानाचा मोठा वापर आज केला जात आहे. आज डिजिटल शाळा, ई-क्लास, ई-लर्निग च्या माध्यमातून विद्यार्थ्यांच्या अध्ययनास पूरक ठरत आहे. विद्यार्थ्यांच्या सर्वांगीण विकासासाठी या साधनांचा मोठ्या प्रमाणात शाळा महाविद्यालयामध्ये वापर केला जात आहे. यामुळे असे वाटते की, ई-तंत्रज्ञानाचा ध्यास हेच आपले ध्येय झाले आहे. आणि विद्यार्थी घडविणे कुठेतरी दुर्लक्षित होत आहे. निश्चितच डिजिटल अध्ययनामुळे विद्यार्थ्यांची गुणवत्ता वाढते. त्यांच्यात परिवर्तन होते. अध्ययनात विद्यार्थ्यांना आवड निर्माण होते. अध्ययनात गती प्राप्त होते. सकारात्मक दृष्टीकोन तयार होतो. त्यामुळे देशात शाळांचे डिजिटलीकर र यावर मोठा भर दिलेला दिसून येत आहे. आज प्रत्येक शाळा स्वत:हून डिजिटल शाळा होण्यास इच्छूक आहेत व त्यादिशेने प्रयत्न करीत आहेत.

आज भारत सरकार व महाराष्ट्र सरकारच्या शालेय विभागाकडून पुढाकार घेऊन शाळा डिजिटल करण्यासाठी प्रोत्साहन दिले जात आहे. यातून शाळांना मोठ्या प्रमाणात अनुदान प्राप्त झाले आहे. यातूनच शालेय परिसर, स्वच्छ, रंगीबेरंगी, नीटनेटका, सुरक्षित बनला आहे. विविध भौतिक सुविधा शाळांना प्राप्त झाल्या आहेत. या सुविधांमुळे शालेय वातावरणात अनुकूल वातावरण निर्मिती होऊन परिस्थिती बदलली आहे. त्यामुळे रस्त्यातून जातांना गाव-खेड्यातील शाळा पाहिल्या तरी मन हरखून जाते.

डिजिटल शाळा स्विकार करतांना पुढील बाबींचा विचार करावा.

१) यंत्र हे साधन आहे ते साध्य नाही हे लक्षात ठेवले पाहिजे कारण, पाश्चात्यांनी तंत्रज्ञानाचा स्विकार केला असला तरी शाळेत (वर्गात) यंत्रमानव आणलेला नाही.

२) डिजिटल शाळेतील वेळापत्रक, अध्यापन पद्धती यांचे सूक्ष्म अध्ययन व्हायला हवे.

३) तांत्रिक त्रुटीवर मात कशी करायची उदा. लाईट गेल्यावर संगणक बंद पडल्यावर काय करावे.

४) डिजिटल नसणाऱ्या शाळाही गुणवत्तापूर्ण शिक्षण देऊ शकतात हे मान्य करावे.

५) शासन, साधने, सुविधा यावर अपयशाचे खापर न फोडता विद्यार्थी घडविणे हेच ध्येय बाळगून प्रयत्न कर.

डिजिटल शिक्षणाचे महत्त्व

१) डिजिटल शिक्षणामुळे शिकण्यासाठी वेळेचे बंधन नाही. विद्यार्थी शाळेच्या वेळेत किंवा वर्षभरातच शिकला पाहिजे असे होणार नाही.

२) शिकण्यासाठी वर्गाच्या किंवा शाळेच्या भिंतीचे बंधन राहणार नाही विद्यार्थी कुठेही शिकू शकतो. किंवा विशिष्ट ठिकाणी शिक्षण घेतले पाहिजे असे बंधन विद्यार्थ्यांवर राहणार नाही.

३) विद्यार्थी स्वत:च्या गती प्रमाणे अध्ययन करतील.

४) अध्यापनावर जास्त वेळ शिक्षकांना घालावा लागणार -नाही.

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६) शिक्षक इतर शाळेतील विद्यार्थ्याला अध्ययनासाठी डिजिटल साधनाच्या साहाय्याने मदत करु शकतात ि वा विद्यार्थ्यांनाही आपल्या विषयातील तज्ज्ञ मार्गदर्शकाचे मार्गदर्शन मिळण्यास मदत होते.

७) डिजिटल इंडिया अंतर्गत प्रत्येक शाळेत ब्रॉडबँड, वायफाय सेवा केंद्र सरकार मार्फत पुरवली जाणार असल्यामुळे विद्यार्थ्यांना एकाच ठिकाणी पीडीएफ स्वरुपातील किंवा इलेक्ट्रॉनिक स्वरुपातील विविध शिक्षण मंडळे, प्रकाशक व लेखकांची पुस्तके उपलब्ध होतील.

८) डिजिटल सेवेमुळे आधुनिक तंत्रज्ञान उपलब्ध होईल, यातून विद्यार्थ्यांची आकलन क्षमता वाढेल.

९) विविध इंजिनिअरिंग आणि मॅनेजमेंट क्षेत्रातील संस्था सध्या अभ्यासक्रम, असाईनमेंट, परीक्षा या गोष्टी ऑनलाईन उपलब्ध करुन देत आहेत. उदा. ई-मेल च्या माध्यमातून असाईनमेंट पाठवले जाते.

१०) सध्या डिजिटल शिक्षण क्षेत्रात अनेक कंपन्या डिजिटल अभ्यासक्रम उपलब्ध करुन देत आहेत. यातून मोठ्या प्रमाणात रोजगार उपलब्ध झालाच आहे. परंतू यामुळे अध्ययनाचे ही अनेक स्त्रोत उपलब्ध होत आहेत.

डिजिटल शिक्षणातून विद्यार्थ्यांचे अध्ययन घडवून आणण्यासाठी प्रत्येक विषयाशी, संबंधीत शिक्षण तज्ज्ञ, अध्यापन तज्ज्ञ, बाल मा-नसशास्त्रज्ञ यांची नेमणूक करून एक नियमावली तयार केली तर त्याचा दिर्घकालीन फायदा देशाच्या पुढच्या पिढ्यांना होईल.

संदर्भ

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प्रा. डॉ. परशराम वाघेरे *(Pg. 333-337)*

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प्रास्ताविक

संप्रेषणाचा उपयोग मानव हा अतिप्राचीन काळापासून करीत आलेला आहे. आपली दैनंदिन परिस्थिती बघितली तर अत्यंत गुंतागुंतीची असते. ती सोडविण्यासाठी माहिती तंत्रज्ञानाचा २३व्या शतकात वापर करण्यात आला आहे.

आपण सध्याच्या युगास माहितीचे युग म्हणतो. शिक्षण क्षेत्रात जेव्हा माहिती तंत्रज्ञान वापरले जाते. त्यास माहिती आणि संप्रेषण तंत्रज्ञान असे म्हणता येते. शाळेची समाजाची आणि पर्यायाने देशाची प्रगती संप्रेषण कुशलतेवर अवलंबून असते. शिक्षण प्रक्रियेत अत्याधुनिक तंत्राचा वापर परिणामकारक ठरतो. माहिती संप्रेषणाच्या माध्यमातून जणू काही अध्यापनाचे सबलीकरण झाल्याचे आपणास दिसून येते. नव्या नव्या तंत्रज्ञा-नामुळे व -नव नवीन शोधामुळे शिक्षण क्षेत्रात झपाट्याने बदल होत चाललेले आहेत. संगणक व माहिती तंत्रज्ञा-न हे मा-नवी जीवनाचा अविभाज्य भाग बनत आहेत.

[illegible]रज

ज्ञान पोहचविणे ही शिक्षकांची संकल्पना असून ते ज्ञान वेगाने व जास्त परिणामकारकरित्या पोहचविणे गरजेचे आहे. शिक्षणातील तंत्रज्ञानाच्या साहाय्याने समाजाचा विकास घडवून आणणे महत्वाचे आहे. शिवाय वर्ग अध्यापनात माहिती संप्रेषणाच्या माध्यमातून सबलीकरण घडवून आणणे महत्त्वाचे आहे. माहिती संप्रेषण विद्युत वेगाने संपर्क होतो उदा. ई-मेल, ओ.एच.पी., मेसेज, स्लाईडचे, चॅट, संगणक तसेच अद्ययावत माहिती कमी वेळेत मिळवता येते. व ती दैनंदिन अध्यापनात उपयुक्त ठरते. तसेच सखोल ज्ञान प्रगती होते. परीक्षा पद्धतीतील त्रुटी दूर [illegible]रता येतात. माहिती संप्रेषण तंत्रज्ञानामुळे अध्यापन प्रभावी करता येते. अध्यापनात माहिती संप्रेषण तंत्रज्ञानाच्या वापरामुळे पॉवर पॉईट, प्रेझेंटेशन, एक्सेल, आलेख यांचा वापर करणे गरजेचे आहे. माहिती संप्रेष[illegible]ामुळे विद्यार्थ्यांच्या विकासास हातभार लागला जातो. कोणत्याही वेळी संपर्क साधू शकतो व माहिती मिळवू शकतो. यामुळे अध्यापन हे अत्यंत सक्षम होऊन सबलीकरण झाल्यासारखे वाटते.

महत्त्व

शि□□ क्षेत्रात अनेक दशकापासून अध्ययन अनुभूतींचा प्रकार वाढविण्यासाठी शिक्षणतज्ज्ञ प्रयत्न करित आहेत. शिक्षणात माहिती संप्रेषणाचे अध्यापन महत्त्व अधिक आहे. माहिती संप्रेषण तंत्रज्ञानामुळे शिक्षणात आमुलाग्र बदल होत आहेत. बालकांच्या सर्वांगीण विकास घडवून आणण्यासाठी अध्यापनाचे नियोजन करावे लागते. परंतू आता माहिती तंत्रज्ञानाच्या विस्फोटामुळे शिक्षकांकडून समाजाच्या अपेक्षा वाढल्या आहेत. कारण आजचे यु□ हे संगणक युग मानले जाते. यामुळे शिक्षकांच्या जबाबदाऱ्या व भूमिका बदलल्या आहेत. त्यामुळे त्यांनी शिक्षणात ऑनलाईन सुविधांचा वापर करुन अध्यापन प्रभावी करता येते. इंटरनेटरमुळे माहिती खजाना खुला झाला आहे. विविध वेबसाईटचा संदर्भ घेऊन वर्गाध्यापन अद्ययावत ठेवता येते. ई-मेल वरुन शंका निरसन करता येते. तसेच वर्गाध्यापनात अभिरुप परिस्थिती वापरुन माळी, वनस्पती, रासायनिक प्रक्रिया व अन्य नमुन्यांची माहिती घेणे. तंत्रज्ञानामुळे आता शक्य झाले आहे. स्वतंत्र अध्ययनात समस्यांचे निराकरण, प्रकल्प पद्धतीचे आयोजन करण्यासाठी शिक्षकाने पुढाकार घ्यावा लागतो. पॉवर पॉईट व प्रस्तुतीकरण अध्यापनात उपयोगी ठरते. अध्यापन व तंत्रज्ञानाचा समावेश करतांना शिक्षकांना हे ज्ञात असावे की बदल हा सोपा नसतो. अध्यापन अध्ययनात तंत्रज्ञानाचा स्वीकार करतांना बदल हा अपरिहार्य आहे. शिक्षकाला आपल्याजवळ असलेल्या ज्ञानाचे सादरीकरण करतेवेळी माहिती संप्रेषण तंत्रज्ञानाचा आधार घेणे किती महत्त्वाचे आहे. त्याच्या अद्ययावत कौशल्यावर अवलंबून आहे.

व्या□या

- माहितीच्या दळणवळणासाठी कॉम्प्युटर, मोबाईल, इंटरनेट अशा साधनांचा उपयोग करुन योग्य माहिती, योग्य त्या ठिकाणी व योग्य त्यावेळी पोहोचविण्यासाठी वापरले जाणारे तंत्रज्ञान म्हणजे माहिती संप्रेषण तंत्रज्ञा-न होय.
- उपलब्ध माहितीला योग्य अर्थ देऊन योग्य त्या तंत्रज्ञानाचे माहितीचे आदान-प्रदान करणारे शास्त्र म्हणजे माहिती संप्रेषण तंत्रज्ञा-न होय.
- तीच गतीने चित्रध्वनीद्वारे माहिती पुरविणारी यंत्रणा आणि गणना यांचे एकत्रीकरण म्हणजे माहिती संप्रेषण तंत्रज्ञा-न होय.

शैक्षणिक घटकांमध्ये होणारे बदल

१) **अभ्यासक्रम-** आय.सी.टी.चा वापर करतांना अभ्यासक्रमात विधायक बदल अपेक्षित आहे. पॉवर पॉईंट, इंटरनेटचा वापर, ह्युज ग्रुप, ई-मेल यांच्या माध्यमातून अभ्यासक्रम बहुआयामी करता येईल. प्रात्यक्षिकांना महत्व असणारा व्यवसायाभिमुख अभ्यासक्रम निर्माण करणे गरजेचे आहे. माहिती संप्रेषण तंत्रज्ञानामुळे अभ्यासक्रमात सकारात्मक बदल घडून आणता येईल.

२) **अध्यापन पद्धती-** पारंपरिक अध्यापन पद्धतीमध्ये बदल करुन नवीन अध्यापन पद्धती स्वीकारणे रजेचे आहे. ज्ञानरचनवादी दृष्टीकोने ठेवून विद्यार्थी केंद्री अध्यापन केले पाहिजे समस्याशोधन प्रकल्प पदधत सहकार्यात्मक अध्ययन सहयोगी अध्ययन, चर्चा, पद्धत या आधुनिक पद्धतीचा उपयोग केला पाहिजे.

३) **शि भुमि ा-** आधुनिक आणि अद्ययावत तंत्रज्ञान वापरतांना शिक्षकाची भुमिका महत्त्वाची असते. माहिती संप्रेषण तंत्रज्ञानाचा स्वीकार करण्याची पार्श्वभूमी तयार करणे. ही महत्त्वाची गोष्ट आहे. शिक्षक हा मार्गदर्शक आणि सुविधादाता असावा.

४) **वर्ग खोली वातावरण-** पारंपरि वर्गखोलीचे स्वरुप बदलून अध्यापन-अध्ययन आंतरक्रियात्मक होईल. यासाठी पोषक वातावरण असणारी वर्ग खोली पाहिजे शिक्षण हे विद्यार्थी केंद्रीत व्हावे. माहिती संप्रेषणामुळे व खोली वातावरण निश्चित बदलेल आणि तो बदल विधायक असेल.

५) मूल्यमाप-न प्र□या- अनेक शेक्षणिक संस्था, विद्यापीठ, अभ्यासक्रमाचे मुल्यमापन ऑनलाईन परीक्षेव्दारे घेत आहेत. माहिती संप्रेषण तंत्रज्ञानात संगणकाच्या मदतीने परीक्षा पद्धतीतील त्रुटी दूर करता येतात. परीक्षेचे व अध्यापनाचे कामकाम गतीशील ठेवता येते. ऑनलाईन परीक्षेचे ताबडतोब निकाल देण्यात येतात.

शै□ि□ बदल

१) महिती संप्रेषण तंत्रज्ञा-नामुळे सल□, सातत्यपूर्ण मूल्यमापन करता येते.

२) तंत्रज्ञानामुळै अध्यापन प्रभावी व चिरकाल होऊ लागले आहेत.

३) तंत्रज्ञानामुळे भिन्न प्रकारच्या अध्यापन पद्धती वापरता येऊ लागल्या आहेत.

४) माहिती तंत्रज्ञा-नामुळे विविध कुल्प्त्या वापरुन अध्ययनात विद्यार्थ्यांचा कृतीयुक्त सहभाग वाढत आहे.

५) महिती संप्रेषण तंत्रज्ञानामुळे कोणत्याही विद्यार्थ्यांस केव्हाही कोठेही शिक्षण घेता येते.

६) माहिती संप्रेषण तंत्रज्ञा-नामुळे संप्रेषणाचे विविध प्रकार विद्यार्थ्यांना ज्ञात होऊ लागले आहेत.

फायदे

१) शिक्षण क्षेत्रात विविध विषयात संशोधने होत आहेत. त्यातून मिळालेली माहितीचे विश्लेषण, अर्थनिर्वचन करणे फारच सोपे झाले आहे. इंटरनेटच्या माध्यमातून त्याचा प्रसार जगभर झाला आहे.

२) हल्ली अनेक शाळांमध्ये विद्यार्थी संख्या अधिक झाली आहे आणि शिक्षक संख्या कमी अशा वेळी माहिती संप्रेषण तंत्रज्ञानाचा उपयोग विद्यार्थ्यांना होतो तेही शिक्षकांच्या गैरहजेरीत करता येते.

३) आजकाल आदिवासी डोंगर द-या मध्ये शैक्षणिक कार्यक्रम रेडिओ, टि.व्ही. याद्वारे दाखविता येतात.

४) माहिती संप्रेषण हे लोक शिक्षणासाठी अत्यंत महत्त्वाचे माध्यम आहे.

५) ज्ञानाची साठवणूक करुन ज्ञानाच प्रसारण व विकास करता येतो.

६) इंटरनेट, ई-मेल, मोबाईल या द्वारे जास्तीत जास्त लोकापर्यंत माहितीची देवाण-घेवाण करता येते.

७) टि.व्ही., रेडिओ, कॉम्प्युटर या तंत्रज्ञानाचा फायदा निरक्षर, अपंग, लहान मुलांना होतो.

८) आजकाल जिल्हा परिषद शाळा या तंत्रज्ञानामुळे डिजिटल झाल्याच्या दिसून येत आहे.

मर्यादा

१) माहिती संप्रेषण तंत्रज्ञा-न वापरामुळे □ाही शि□कामध्ये उदासिनता आढळते.

२) माहिती संप्रेषण तंत्रज्ञान संगणक, टि.व्ही. या वस्तु परवडणाऱ्या नाहीत.

३) तंत्रज्ञान वापरासाठी वीज सर्वच शाळेत उपलब्ध असेल असे नाही. त्यामूळे तंत्रज्ञा-न वापर□ावर मर्यादा येतात.

४) इंटरनेट कनेक्शन, फोन कनेक्शन खरेदी करण्यात अडथळा येतो.

५) तंत्रज्ञानामुळे तर्कशक्ती, स्मरणशक्ती या क्षमता कमकुवत होऊ लागल्या आहेत.

६) माहिती संप्रेषण तंत्रज्ञान अति वापरामुळे शारीरिक व मानसिक व्याधी जडू शकतात.

७) यामुळे विशिष्ट चौकटीत राहूनच काम करावे लागते.

८) माहिती तंत्रज्ञानावर चुकीची माहिती दिली तर चूकीची उत्तरे मिळू शकतात.

समारोप

अशा प्रकारे माहिती तंत्रज्ञानाचा प्रभाव आपल्या सर्वांवर शिक्षक म्हणून व्यक्ती म्हणून तसेच समाजातील घटक म्हणून पडत आहे. शिक्षण, मनोरंजन, कामकाज व दैनंदिन आयुष्यात आपण ज्या गोष्टी करतो. त्या सर्व गोष्टीममध्ये माहिती तंत्रज्ञानाच्या विकासामुळे, अध्यापनाचे सबलीकरण घडून येत आहे. वर्गात अध्यापनासाठी होऊ लागलेला इंटरनेटचा वापर डिजिटल टि.व्ही., ओ.एच.पी. संगणकाचा वापर होऊ लागला आहे.

संदर्भ

प्रगत अध्यापनशास्त्र व माहिती संप्रेषण, तंत्रज्ञानाचे उपयोजन
अध्ययन व अध्यापन प्रक्रिया- संघमित्र प्रकाशन, मिरज
प्रगत शैक्षणिक तंत्रविज्ञा-न