

DIGITAL TECHNOLOGY AS A KNOWLEDGE SYSTEM IN SCHOOLS

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ABSTRACT

- My educational study of architecture incorporates this dissertation document containing the study related that how digital technology and role of computers affects the educational system.
- While you read this document you will realize a realistic scenery of your school times and in which type of environment you study and what is missing in that environment . And what if those things could be change at that time of your schooling. These questions will arise in your mind which will take you to a different view of how indoors are effective in learning process.
- There is a direct link between man and technology as he / she is a natural product, so how it incorporates with new technology. All human beings are influenced by technology and its forms in a way. In today's world due to technological advancement in certain areas there is no scope for doing indigenous knowledge system , but this document will let u know that computer's are very important in every aspect.
- It not only changes the view of the classroom as learning aspect but it integrates many informative things in it. So that our concrete buildings contain many useful as well as informative aspects for students coming under formal teaching system.

KEYWORDS:

Webinar, E-learning, Virtual learning environment, Smart classroom, Digital audio & Video.

INTRODUCTION

- The main objective of this paper is to justify the role of digital technology used in schools which helps them to improve their learning environment. It helps in enhancing knowledge in various prospects. Availability of digital machines in the market makes us more aware about the current scenario.
- Every technology now a days is connected to digital forms of information. Computers, notebooks, tablets, calculators etc are digital machines now a days. Digitized machines make our work easier, faster and efficient. They are user friendly easy to learn and use technology. The equipments used with World Wide Web gets a huge connectivity in every field.
- It is a knowledge system in current scenario. The development has taken place in each and every field due to that only all of us are using digital technology in an economic friendly manner.
- The growth of industries and other I.T firms in India gave rise to the knowledge of computers and its languages. But to start them in school is an initiative by schools to put computers as a subject in schools so that the preliminary knowledge can be taken from school itself. To have that knowledge computer as a subject is running in schools.
- Objective is to understand the knowledge of computers imparted by schools in primary classes. Delimitation of my dissertation is that I have taken the classes from 1st to 5th, that is the growing age of a child in that age group many of them are sharp minded and grasp things easily but some them take some time to get known about the computers.
- Digital technologies are getting vast day by day a mobile as a smaller unit can be used as a computer it has also the same features like a computer . All the software, hardware's etc are digitized there principle is same as a digital gadget has. The approach towards the education is growing in due course of time. Many software's are developed many websites has been developed to impart education to students.
- All the things are connected through networking and its application is done when we use it daily. Though networking is a huge topic in computer architecture. But in brief we can say all the things are huge connections of internet, wi-fi systems and web based systems.
- These are made to make our life easier and to earn knowledge wherever we are and any time without any hard work and long travelling hours to school or college or library. Web is became a huge library which is helpful as well imparting knowledge in every field.

- To sum up this research paper deals about the application of different digital technologies used in schools and how are they helpful in present and future.

LITERATURE REVIEW:

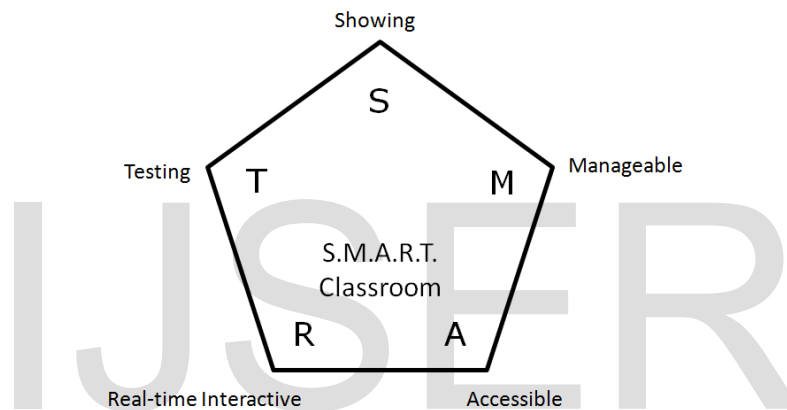
SMART CLASSROOM

DEFINITION

A traditional Smart Classroom is a traditional lecture style teaching space that has available technological equipment that can be used to aid and enhance instruction of a course. The traditional Smart Classroom is equipped with the basic technology that will enable you to connect your laptop to the video projector or to play a VHS/DVD movie, just to name a few scenarios. A smart classroom is a classroom that that has an instructor station equipped with computer and audiovisual equipment

- Personal Computer
- Overhead Projector
- Wireless Internet Access
- DVD Player
- Smart Board

CONCEPT MODEL OF SMART CLASSROOM



SHOWING

Showing dimension represents teaching information presentation capabilities of the classroom, which requires not only showing the contents can be clearly visible, but also showing content suitable for learners' cognitive characteristics, to the learning process to enhance the learners' learning materials understanding and processing.

MANAGEABLE

Manageable dimension represents diverse layouts and the convenience of management of the Smart classroom. The equipment, systems, resources of Smart classroom should be easy managed, including layout of the classroom management, equipment management, physical environment management, electrical safety management, network management etc.

ACCESSIBLE

Accessible dimension represents convenience of resources acquisition and equipment access in the Smart classroom, which involves resource selection, content distribution and access speed.

REAL – TIME INTERACTIVE

Real-time Interactive dimension represents the ability to support the teaching interaction and human-computer interaction of the Smart classroom, which involves convenient operation, smooth interaction and interactive tracking.

TESTING

Testing dimension represents perception of the physical environment and learning behavior in Smart classroom. The physical environment factors, including air, temperature, light, sound, color, odor etc, affect the physical and mental activities of teachers and students.

E-LEARNING

- E-learning is the use of Internet and digital technologies to create experiences that educate our fellow human beings.
- “E-learning combines communication, education, information, and training and is a core element of a successful e-business strategy.

E-LEARNING PHILOSOPHIES

- “E-learning is the online delivery of information, communication, education, and training.
- “E-learning provides a new set of tools that can add value to all the traditional learning modes classroom experiences, textbook study, CDROM, and traditional computer based training.
- Old-world learning models don't scale to meet the new world learning challenge. E-learning can provide the tools to meet that challenge.
- E-learning will not replace the classroom setting, but enhance it, taking advantage of new content and delivery technologies to enable learning.
- With e-learning you can empower learners, and the learner, as well as the mentoring system, is held accountable.
- Retention for a learner varies, based on content type and the delivery vehicle. The better the match of content and delivery vehicle to a learner's style, the greater the retention, and therefore the greater the result.

MODELS OF E-LEARNING:

There are two models of e-learning: synchronously and asynchronously.

- **Synchronously e-learning:** means that all students and instructor are logged on at the same time & communicate directly and virtually with each other, “where all the students must be in the classroom at a certain time for the class to start. Synchronous e-learning events include live web-casts, chat rooms, application sharing and whiteboard sessions.
- **Asynchronous e-learning:** in this model, the communication between participants does not occur simultaneously. Where the “the learning content or courseware is served from web server and delivered in demand to the learner's workstation, learner's can thus take courses at own place. Courseware is normally available to learner's 24 hours per day, 7 days per week “. Examples of this model includes: taking a self placed course, posting messages to a discussion group. Sometimes it is called “ distributed learning “ and it receives more attention because of its lower cost of development , reusable components and convenience to the learner.

VIRTUAL LEARNING ENVIRONMENT

•Introduction

Virtual Learning Environments (VLEs) are computer-based online learning environments that are becoming increasingly common in universities. They can provide not only learning resources such as reading materials, handouts and power point slides from lectures, but also a discussion forum where students can talk to each other on-line or post questions for the course tutor to answer. VLEs are a rapidly developing area in education, and already research has indicated that they provide a valuable resource for learners (Roulston & Clarke, 2003).

• Support learning

- A VLE is an online system comprising a range of tools to support learning and the management of learning. For example, VLEs provide online access to learning resources and support peer-to-peer and learner-to-tutor communication.

• Learning beyond classroom

Developing a course presence on a VLE has many advantages. Online resources extend learning beyond the classroom. Learners are better able to take a more active role in managing their learning – for example, by accessing learning materials at a time or in a place convenient to them, testing their knowledge and receiving feedback via online quizzes, and gaining support from discussion forums and blogs, now commonly integrated into VLEs.

• **Additional opportunities**

Schemes of work located on a VLE make the structure and learning objectives of a course more transparent to learners. Links to online resources within a scheme of work provide additional opportunities to develop or reinforce learners’ skills and conceptual understanding. Additional resources can be included to extend the potential of stronger learners and support the progress of less able learners.

INTRODUCTION TO WEBINARS

A Webinar is a web-based seminar.

- A seminar but also a conference, a presentation, lecture, workshop transmitted over the Web. A key feature of a Webinar is its interactive element: the ability to give, receive and discuss information, allowing interaction between the presenter and the audience. It is therefore a type of web conference that allows double direction of information and not just one way, with limited audience interaction, such as in a Web cast.
- Webinars are a promising way to help nonprofits, public agencies, and volunteer programs develop quality training programs with a greater reach than traditional face-to-face sessions.
- These online sessions allow the participants gather virtually, each at a personal computer and phone, offering almost anyone, anywhere, the ability to participate. In this way, webinars can transcend the boundaries of geography, bringing together individuals without the added costs of travel, time, or the cost of renting a space. For organization trainers, the benefits are clear. Not only do webinars provide meaningful educational opportunities to a broader audience than traditional in-person sessions, they usually cost far less.
- Unfortunately, webinars often fall short of their potential because instructors fail to make the training interactive. Research has shown that adults learn best when they are encouraged to relate new material to preexisting knowledge. In comparison, studies show that individuals only recall 20% of information they hear and just 10% of what they read.
- Since most speakers construct their webinars in a lecture format with slides, it is easy to see why webinars are not always optimal learning experiences. In comparison, participants remember 70% of information they discuss and 90% of the things they practice or apply. The primarily one-way nature of most webinars allows little space for this sort of activity and misses an opportunity to engage the wisdom of the group.
- The possibility and reality can come together, however, with some basic changes in presentation and thoughtful planning.
- Just like in-person, training, webinars need to be engaging and meaningful for their participants to be effective. Activities and discussion allow instructors to gauge participants’ involvement in the absence of visual cues. Without this sort of interaction, attention invariably wanders and individuals use the time to catch up on their email or surf the internet. Making webinars interactive is not difficult; it simply requires planning.
- This white paper will discuss a number of principles, ideas and concepts that instructors, trainers and facilitators can use to create more interactive and collaborative webinars. Online facilitation is a rapidly growing field with equally rapidly evolving technology. More work is being done every day. To access the most current research, articles, discussions, and advice, search online “online learning,” “best practices for webinars,” and “facilitation webinars.”

Individual learning activity	Small group or partner learning activity	Full group activity
Reading, listening to a podcast, or watching a video. Thinking about personal relevance of the topic. Researching, practicing, and journaling.	Reflection on reading materials, identifying issues and concerns, debriefing on exercises or activities, and brainstorming ideas and solutions to bring to the whole group.	Input to be shared through discussion, polls, or collaboration spaces like chat rooms both before and during the live webinar.

DIGITAL AUDIO & VIDEO

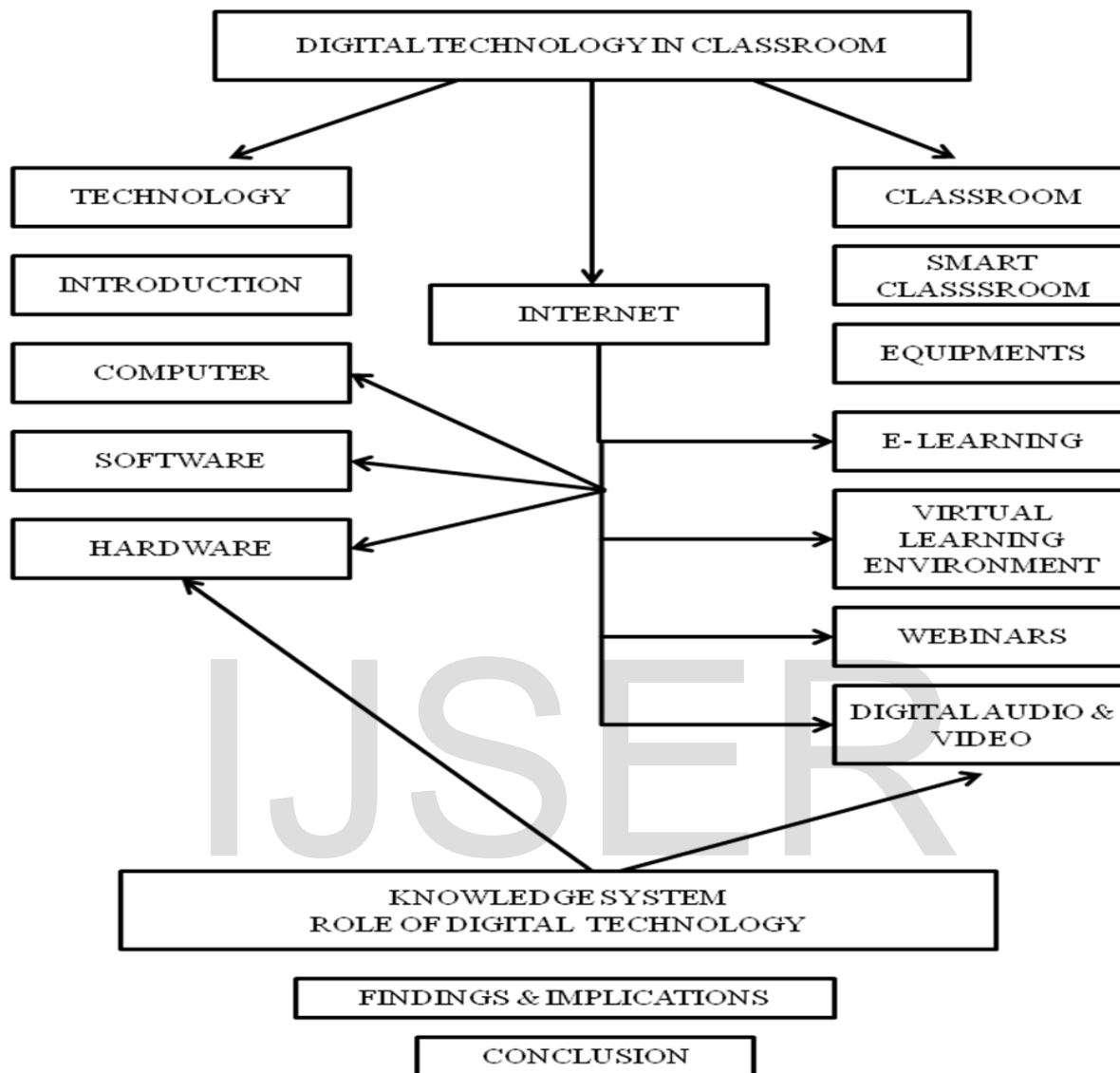
Digital audio

- Digital audio files enable sound information to be stored or played on a computer or mobile device and shared electronically with others. A digital audio recorder that records to MP3 format and has a USB port to upload files to a computer is one option. Another is to download audio recording and editing software such as Audacity®.
- The outcomes of the Sounds Good project have been largely positive. In comparison to written feedback, most tutors found that audio recording took the same amount of time or less. The quality of feedback also improved – the opportunity to add further examples and/or more detailed explanations was likely to give students a more supportive and meaningful experience of assessment.
- Approximately 90% of students responded positively to receiving audio-recorded feedback. Although some students stated they would prefer a combination of written and audio-recorded comments, most found audio feedback more personal and relevant to their needs. Some also understood better why a particular mark had been awarded.
- Audio feedback was especially helpful for those students for whom English is a second language, and some dyslexic students also found the audio option beneficial. When students expressed dislike of the approach, it was often due to the length of recordings: *'... if they are too long, you tend to switch off and miss information.'*
- Digital audio files, like any pedagogical tool, need to be used appropriately: the most likely application is when detailed, time-consuming feedback is normally given. Audio feedback may not be a 'magic bullet' solution for all assessment issues, but is likely to provide a more personal, accessible and relevant experience for students. It may also in some circumstances save staff time.

Digital video

- Digital video resources meet a wide spectrum of educational needs, from illustrating what cannot be experienced firsthand to developing specialist skills. The in-house production of video for educational purposes has been made easier by portable digital cameras and digital editing software.
- Virtual scenarios that replicate complex real-world situations help to establish the connections between theoretical knowledge and practical expertise.
- Credible, coherently structured resources form the basis of such approaches to learning. Each example in the virtual caseload includes a video depicting a fictional client's symptoms and in some cases, the reactions of family members. The videos form part of a suite of resources that includes case notes, letters and PowerPoint presentations outlining the underpinning theory, ethics, policy statements and points of law associated with each case.
- The virtual caseload has extended the potential for learning in a number of ways. Both face-to-face sessions and assessments can now be made more relevant as students take the role of clinical practitioners making decisions about clients, yet can learn from their mistakes with impunity. Students' understanding of the wider issues involved in a course of action is also more stringently tested – the virtual caseload offers opportunities for innovative forms of assessment, and more challenging opportunities for self-assessment.
- The narratives may also become the basis for cross-disciplinary learning and teaching if integrated into modules for other health-related courses or used within disciplines in which mental health awareness is important. For example, the fictional caseload may be relevant to the training of social workers, architects and town planners, as well as healthcare professionals.

METHODOLOGY



ANALYSIS & INTERPRETATION:

IMPACT ON LEARNING OF STUDENTS

- The analysis regarding digital technology in classroom is positive in many aspects and negative in many other aspects because when applications come the mode changes, whole infrastructure changes with respect to environment. We are talking about application of digital technology in classrooms in schools. In its newer form to be a smart classroom.
- As explained in above dissertation the merits and demerits of a particular thing I have understood many aspects of fiction and reality because what I think may or may not be executed in reality.
- As far as learning through smart classrooms it is enhanced due to digital technological advancement and its application in current scenario. My basic focus is on how a student reacts towards the technology and how does he / she feel when taught under this scenario.

- Learning impacts on a person are basically positive and negative too because some of the students grasp the things fast some of the slow to maintain a pace between the students teacher has to be enough skilled so that he / she can fulfill the needs of the students in every aspect.
- Digital technology in the form of smart classrooms has drastically changed the learning ability of students in every aspect because the session is interactive and the presentations are audiovisual or visual communicated to students. From childhood days all of us have some memories stored in our subconscious mind most of them are through visual or audiovisual or audio communication.
- The percentage of the learning as compared through traditional mode of learning is less as compared to e-learning techniques. The major change in understanding as well conceptualization of the various aspects in students mind.
- My overview towards the side that learning of a student is changed in smart classrooms because of the fact that most of the things students when visualize through his/ her eyes has a different image on the retina while reading the image is either 40% achieved but through smart classrooms it can be achieved up till 70% the increase in percentage is due to the typography change of the entire classroom.
- The impact on learning has achieved his goal up to some extent the fulfillment is done through smart classrooms, webinar, virtual learning environment, e-learning and some more interactive sessions in these fields.

ROLE OF DIGITAL TECHNOLOGY IN PRESENT

- As the role of digital technology is everywhere from a small component called mobile to computers and other audiovisual and audio devices. Coming to educational facilities provided in schools the role is changed entirely using of smart boards , projectors, tablets , computers, notebooks has entirely changed the overview of the classroom environment .
- All of us are surrounded by digital technology or say digital gadgets or devices in one or the other way , because of technological advancement in the field of education and as well as in other fields is the reason why these devices are used in current scenario .
- The advancement of classrooms as a smart component is itself a praiseworthy work by different equipments used in making of smart classrooms because of them the entire environment of the traditional classroom has changed at the time when we were kids these technology was new to us because the technological advancement of that time was slow or may be not sufficient enough to provide us with different classroom technologies.
- But in current scenario they are becoming need of a common people as the rate of advancement increases day by day many things are getting digitized day by day. As we are discussing about the fact that how digital or smart or technology enhanced classrooms are playing there major role in teaching of students through all these techniques but first we should be aware about this its components, equipments and basic application of all these in the field of education. To impart knowledge to students for their learning and future use of that education in their higher education.
- As the role in teaching is concerned firstly a teacher should be trained if does not know about how to use a smart board , projector and other digital devices used in classrooms because a teacher a primary approach of the student to solve his/ her problems regarding the learning curriculum and other things .
- The teaching of computer as subject in curriculum needs to be revised according to time because whosoever does changes with time is either lost or losses its capability to survive in a particular field. The overview which I have through schools in my case study was changing from school to school.
- Private schools have their own mode of teaching and govt. schools have their own mode. But our motive is too aware both the student and teacher about the computer as a digital technology and its application in future. As we talk about smart classrooms but without the computers this classroom is in complete we need knowledge of computers to run this classroom successfully in any manner. From earlier classes we should attain knowledge about the subject and later on we add on our knowledge in this field.
- Then it comes to its application in each and every field of education, communication, transportation, banking, cyberspaces, aviation and many other infinite fields.

ROLE OF DIGITAL TECHNOLOGY IN FUTURE

- Role of digital technology in future due to depletion of natural resources man developed many other resources which are called renewable resources. These resources are developed due scarcity of non-renewable ones. As the depletion of trees and landscaped areas from earth is their due to urbanization of large cities and other environmental aspects.
- Coming to educational field we talk about smart phones , I pads, Tablets , notebooks , computers these are all environment friendly in a way because the process called e- files , e –billing, e- form , e- registration has reduced the use of paper in a way so that trees which are being cut to extract paper can be saved .
- Now with the use of electronic mail and other website related things we need nit o get a paper to be posted we have online form we fill it fill all the details online and get registered and do any payment etc through this internet has made our life easier, efficient and manageable in context to time we can work more and in less time.
- The role from present to future will extends in every manner we will be advanced in coming years then there will no books only tabs and notebooks will be there to study and store all the things.
- Basic approach towards advancement comes through current scenario we will make ourselves aware of all the digital gadgets used in present time. So that when tomorrow a new life will come not to challenge us but to make us more confident about the aspect that we know its primary things.
- In future the use of paper will be almost gone because of environmental issues and other things because the storage and maintain ace is the big problem of keeping records of books and the biggest factor is its deterioration which causes damage to previous as well as current books.
- We are discussing the fact that the future application of digital technology is increasing in every minute new software's are developing new gadgets are coming the infinite use of all these will lead to some revolution in the field of education as well as in other fields . The people will become more knowledgeable in spite of being more qualified. People who runs after the degree may or may not be knowledgeable but one who concentrates on his / her thinking and mode of studies will definitely achieve his/ her goals by earning lots of knowledge and other things about the fact which he / she is interested in .

MERITS & DEMERITS OF DIGITAL TECHNOLOGY

MERITS

- The digital technology has many merits it taught us how to do work in more precise, specified and efficient manner it saves our time and leads in growth of field.
- Digital technology has many prospects to evolve experiment and to do practical things by using the devices such as cameras, computers, and software's, hardware's handy cams and many more.
- It gives us the overview about the things that how they will appear in reality. Such as we make drawings on CAD we can draw its 3D and make walkthroughs of the building we can see the buildings before it started on site. The execution problems will be solved by much other structural software which can assess the load and other things.
- Much software are designed to run on system to check will they run properly or not digital technology helps us. Firstly the software is run on one computer then it is analyzed how it works if it works properly then it goes to further more otherwise it is stopped there and then redesigned is started.
- If we talk about classrooms many students learn fastly through digital devices used in classrooms such as smart boards, projectors computer and other audio visual devices.
- It reduces the time reduces cost because the use to black board , chawks and other accessories will not be their only light pen and smart board which act gets cleared by giving command .
- Use of computer and internet has opened the doors of enlightenment where there books does not reach internet and Wi-Fi connections reaches there to squeeze down the use of natural resources these all

resources are emerging and to use these technology many schools and other Ngo's are taking part to make aware people of rural areas about this facility .

- Use of mobile as a source of digital technology has given us many more things to explore and evolve the things in a better way. It gives us the flexibility to use it anywhere and almost everywhere is used.
- Technology gives us the flexibility to attain to reach at our individual goals it helps in facilitating many human beings which learn through technology and explore up till their level . How they perceive things in what manner.

DEMERITS

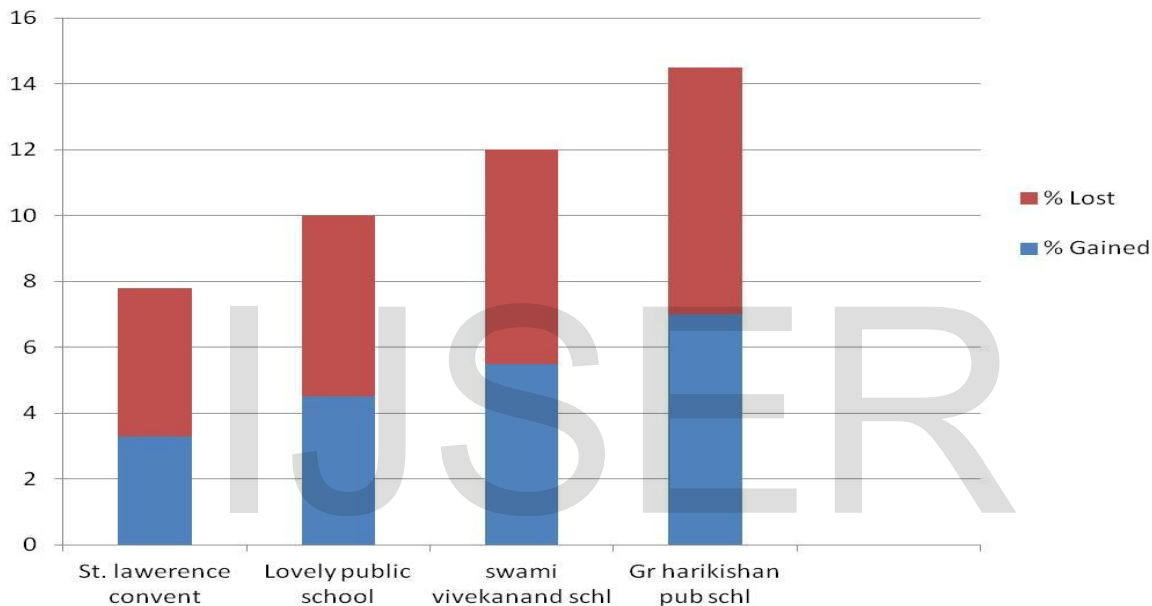
- The demerits of the technology is that people are using it as a primary source of information they don't think and analyze their mind they start goggling on net without thinking that the question is either relevant or irrelevant for his type of search on net.
- Application on one's mind is somewhere lost nobody is trying to explore it on there on whether they start a net search for each and every thing. That a demerits we all are blessed with brains which has more carrying capacity of storing information much faster than computer , then why are we not use it , why we are making ourselves dependent on technology . Though it is easily available but is violating the facts of nature by our act.
- People are becoming least informative as far as their informative mind is closed or lost somewhere they are not applying there mind before giving any information they are totally dependent on net while giving any solution or other conclusion.
- Obesity is a big problem in today's scenario now due to long hours of working on computer is a result that people are becoming fat day by day many health problems like hypertension, high blood pressure and heart diseases are increasing day by day the root cause of all the disease is obesity.
- Major problem is effect on eye sight long hours working on computers and any of the digital devices causes the weakness. Due to that many people are getting spectacles which are again a hazard of using it. The basic rule is to facilitate the knowledge gained through digital technology but its demerits are coming due to excessive use of everything.
- As far as students are concerned they watch television, use computers, tabs, mobile phones and other things like play stations due to that they are least interested in playing outdoor games. They are interested in computers playing 3 d games etc. It has reverse effect on their health due to that they become more prone to diseases. This is again a matter to think how we can swap the things well with our smartness.
- We have to come over these problems otherwise the rate of hazards and deaths will be increased and whole human cycle will be disturbed and nobody will be able to recover.

FINDINGS & IMPLICATIONS

- The findings are concise about the computer curriculum taught to students from Class -1st to 5th
- Precisely I will compare the current scenario of teaching computers in primary wing.
- The comparative report helps me in doing my research because I came across many facts that our current generation is more informative about computers , e- learning they do, they have knowledge of 2 dimensions and 3 dimensions many geometric forms and many practical aspects which are taught to them in early classes by using digital technology .
- What I find is some analysis is that the computer as subject is important to attain its use in future so that it would not feel like an object from mars which is known to them. These small introduction leads to future innovation and many people will find there track in which they have to do their expertise in future.
- They introduce themselves to the subject in early classes and then explore, innovate and use it in their own way so that it can become a user friendly software or hardware.
- My implications would be I will use the technology for the betterment of the individual and society but not to harm myself in any sense. We will use the technology accordingly and make ourselves fit and fine. We will not loose our health due to technology but we will use our brains to innovate and experiment and make new inventions in the field.

- As far as the technology is concerned we will use it wisely, efficiently and judiciously because a day will come when all these will be demolished and comes to their end every technology has its limitations so do not cross its limitations to harm ourselves and nature and society.
- Digital technologies has limitations so do not go beyond that it can ruin our life. Vibrations, radiations coming from digital devices are harmful to use it from a distance to maintain its positive effects and avoid negative effects.
- The % bar graph showing how much they have learned in computer syllabi the % will decide that how far this particular syllabus is helping students to learn about computers and if there is a scope for revision of the syllabi or we need to revise our teaching skills.
- This result is extracted from general discussions from teachers because they know better about the basic understanding of students.

BAR- GRAPH SHOWING AMOUNT OF % OF KNOWLEDGE GAINED & % OF KNOWLEDGE LOST



This is the amount of gained knowledge about computers

- As the % of amount gained is totally dependent on the syllabus because it may or may not be easy for the students to adopt it as a skill.
- This is the comparative study of four schools on the basis of their syllabus the % is calculated.
- During this survey we have taken the reviews of the subject teachers which help us in making more accurate assumptions about this report.
- Because computer or any other subject as a knowledge system depends upon the psychological aspect. But we take average of that so that some accuracy about the figures can be maintained.

CONCLUSION

- The conclusion derived from this research is computer as a digital technology is used in each and every field it has all the evidences in every field. As far as schools are concerned the curriculum decides the type of knowledge that is imparted to students and how it improves in learning through technology.
- The result are negative as well as positive but it is according to the perception of the human beings how they use it excessive use of everything is bad sooner or later it will shows its impacts. The technology used with limitations is helpful and beyond that will lead to serious health issues.
- The knowledge given to present generation is according to present technological advancement and in future it will according to that time but the fact is always there that the knowledge imparted is sometimes not getting into somebody's mind everybody has its own pace of learning things in a way.

- So, to make pedagogy easier we are using technology not just easier but efficient time and cost saving technique which in future leads to benefits and give rise to some more innovative technology which are yet to be invented by our present generation .
- The research make me more aware by the present issues of imparting knowledge of computers for further advancement but it gives me various solutions so that I can also plan for future generations.
- The resultant of research is e- learning, webinars and other teaching techniques make us aware about the people living in different countries. Internet gives us the excess to read there researches and to be justified it is entirely dependent on the perception of human mind.
- Liabilities to provide various enough knowledge about the subject are difficult in way because everyone has its own psychology to attain things in a positive as well as in negative manner.
- Teaching includes many psychological aspects because it has its own relevance in human behavior towards any object which has a role in understanding education, learning and its environment.

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