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A DISCUSSION ON ROLE OF TECHNOLOGY IN TRADITIONAL EDUCATION

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ABSTRACT

The field of Information and Communication Technology (ICT) has transformed the education landscape by improving teaching and learning methods. This paper investigates the key roles of ICT in education, focusing on its ability to enhance accessibility, student engagement, and operational efficiency. Technologies such as use of different hardware, software and idea technology have reshaped conventional educational methods. The use of ICT has enhanced the information retention capacity. ICT has significantly contributed to education by improving accessibility, engagement, and efficiency in teaching and learning. As technology continues to evolve, its integration into the education sector will further revolutionize knowledge acquisition and dissemination. Stakeholders must collaborate to overcome challenges and ensure equitable access to ICT resources for all learners.

KEYWORDS: *field of Information and Communication Technology (ICT) , teaching and learning.*

INTRODUCTION

The swift progress of information and communication technology (ICT) has transformed the educational landscape, rendering learning more engaging and reachable. ICT includes various digital instruments and resources that enhance communication, collaboration, and the distribution of knowledge. The incorporation of ICT in education has eliminated geographical obstacles, allowed for tailored learning experiences, and cultivated a more inclusive atmosphere for education.

Technology improves various learning experiences and contributes to student comfort, but it can also be an overused resource that might hinder the development of students' fine motor skills and their problem-solving abilities. In this research project, the researchers conducted surveys among K-12 educators to gather their insights on the impact of technology in their classrooms. This study was instrumental in understanding how technology influences student learning. The results indicated that both teachers and students require additional training to more effectively integrate technology in educational settings. Moreover, the research highlighted that while students are often more engaged and at ease with technology, it can also lead to challenges in classroom management (Kaite et al., 2021). Now a days children found off spending much on social media by using devices like computer, mobile and laptop (Klopfer, et al. 2009). Modern educators face significant pressure to deliver a high-quality education to 21st-century students in line with current standards. These standards require equipping students with the technological and informational skills necessary to succeed in a constantly evolving, technology-oriented environment (Harris,.2016).

The role of technology is significant in the lives of students. Integrating technology into educational environments has shown to be advantageous, although it does come with certain disadvantages. Technology has increased student motivation and participation while also facilitating improved learning experiences. The main objective of the school-to-work initiative is to foster awareness and backing so that students can develop the skills, habits, values, and insights necessary for effectiveness in every aspect of life (Hakim et al. 2000)."The demand for construction and involvement indicates that the most effective forms of learning will be those that allow students to make choices and that take place in significant contexts that fully engage the learner." (Fisher, et al. 2014).

It means basic use of technology in teaching and learning process. It has common role in all sections of education. It is consist of use of some hardware, software, some programmes and some innovative ideas related to curriculum.

The influence of computer usage on motor skills has led to findings that interacting with contemporary technology can impact fundamental psychomotor and cognitive abilities. This encompasses utilizing devices like computers, digital planners, GPS systems, and more. Such changes raise concerns regarding student development within the classroom setting. Additionally, studies indicate various advantages and disadvantages, exploring in detail the potential benefits and drawbacks of technology(Sülzenbrück, et al. 2011). The basic role of technology is to enhance the learning process. It helps to retain the given information by the teacher. It assist the learner to link the new information to the previous experience which is impossible without the use of technology. The traditional role of technology is to assist retention of knowledge.

MATERIAL AND METHODS

The data was collected from various sources by referring various articles. It was analysied. Different opinions are collected form public who have some degree of expertise in education.

RESULT AND DISCUSSION

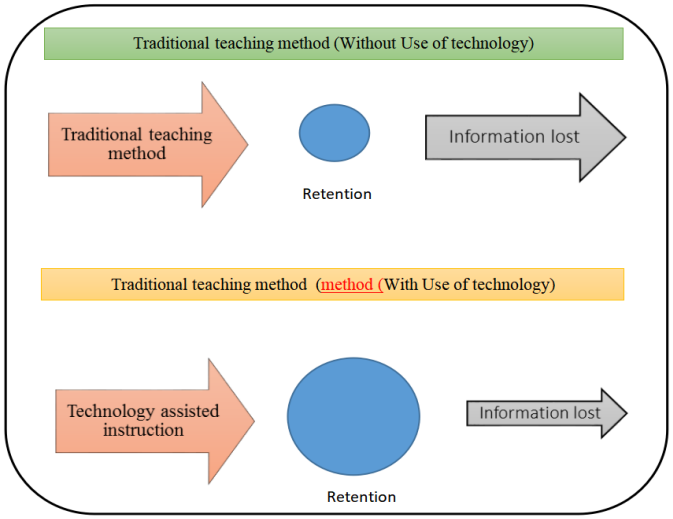


Fig. Information retention capacity of students with and without technology

From the above diagram, it is clear that in traditional method of teaching with use of chock pieces and blackboard, it is difficult for the student to retain given information, most of which is lost. The basic role of technology is to assist the student retain most of the information provided and also enable the teacher to create environment required for effective teaching. Technology develops the keen interest among students that attracts attention, correlate information to the previous information, in this way help to retain information by reducing the loss of information.

The components of teaching technology can be classified into three groups. 1) Product Technology 2) Software Technology 3) Idea Technology.

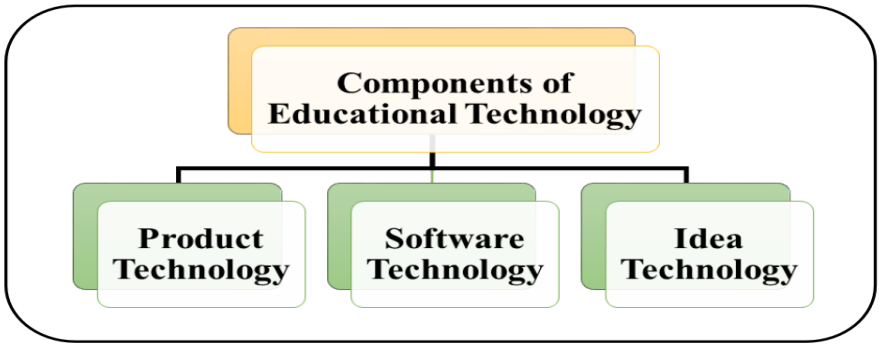


Fig. Components of Educational Technology

Computer	Laptops	Tablets	Mobiles
Printer	Scanner	Camera	Mouse
Floppies	CDs	DVDs	Pen drive
Hard Discs	Radio Transistors	Audio cassettes	Film tape
VCR	CDs DVD players	Speakers	Home theaters
Mike	Head phones	Bluetooth	Wifi
Modem and Router	LCD/LED TV	Internet cabels	Lase pointer

1)Product technology: - It deals with various hardware component of technology. These are the basic equipment that teacher can use in class rooms and the onus of provision of some of these material mostly lies with institution. It includes computer, laptop, tablet, mobiles, Printer, Scanner, Camera, Mouse, Floppies, CDs, DVDs, Pen drive, Radio Transistors, Cassettes, film strips, CDs DVD players, internet cables etc. With the evolution of technology and new innovations the forms and size of hardware equipment changed over the years.

Fig.Hardware devices

In India in 1980s there were hardly any college or university had a single large black and white computer with CRT technology, which use to consume huge amount of electricity. Later the computer with colour monitor in CRT technology replaces the earlier ones. After that computers with LCD Technology which were followed by LED monitors. With evolution of Nano technology small screens of mobile are becoming popular. Similarly there is evolution in storage technology. Earlier the large sized floppy discs were popular and with evolution of technology the size reduced to small size floppies. Now a days no CPU with floppy space is available in market. Small sized floppy was replaced by CDs and later by DVDs and now the pendrives with large memory size are popular. In 1980s Audio tape recorder and Video tape run through VC player were popular technology.

Evolution of Computer Generations

Computer Generation	Period	Technology Progress	Memory	Machine Language
I	1940-1956	Vacuum Tube	Magnetic Drums	Binary system
II	1956-1963	Transistor	Magnetic core	Symbolic and Assembly language.COBOLlanguage. COBOL, FORTRA
III	1964-1971	CRT	Magnetic tape	Operating system Windows XP
IV	1971- till	Integrated Circuit (IC)	Semiconductor	Operating system Windows 7,8,10 etc.
V	2010- till	IC and Super conductivity	Super conductor	

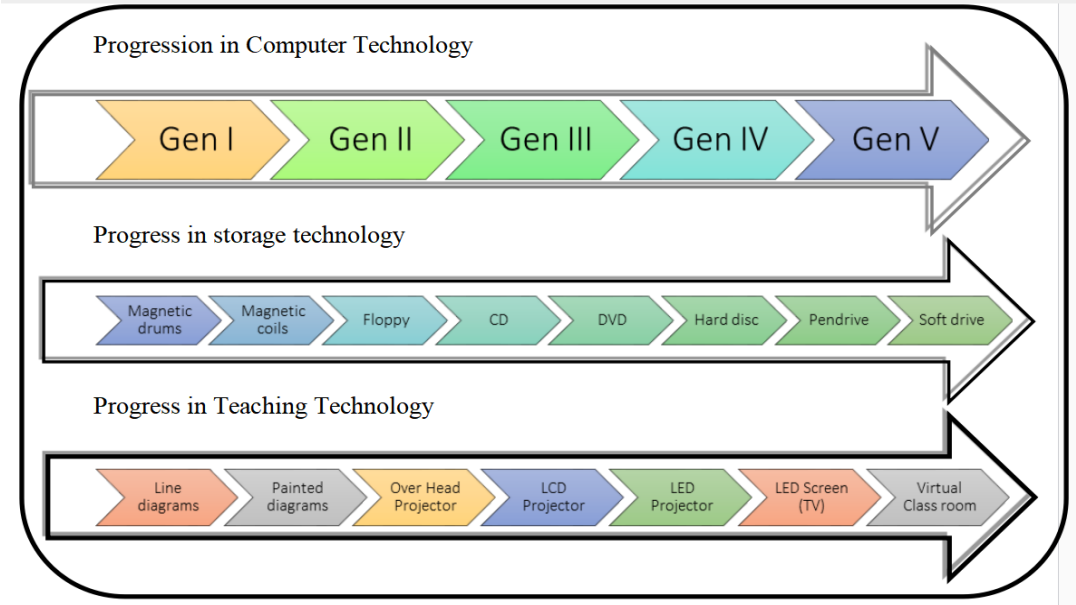


Fig. Co evolution of Education Technology with computer and storage technology

From the above diagram, it is clear that improvement of instructional technology follow the progress in computer and storage technology, both of them show collateral progression.

2) Software: - It is the part of technology where the teacher need not to bother how to develop them rather he has to make use of them. It includes various Programming languages and operating systems. The programming languages evolved gradually from like Autocode, FLOW-MAT, FORTRAN, COBOL, UNIVAC, AIMACO, ALGOL, were popular in past. In 1960s languages like ANL, MATLAB, IDL, even 'C' language was developed. Further in 1980s and 1990s JVAV emerged as an important language. Operating systems like Linux, Windows XP, 7, 8 and 10 which can be used by teacher to design his lesson plan and to read, write, word, paint and spread sheets like MS office. Internet service provider which can be used by teacher to integrate technology with curriculum.

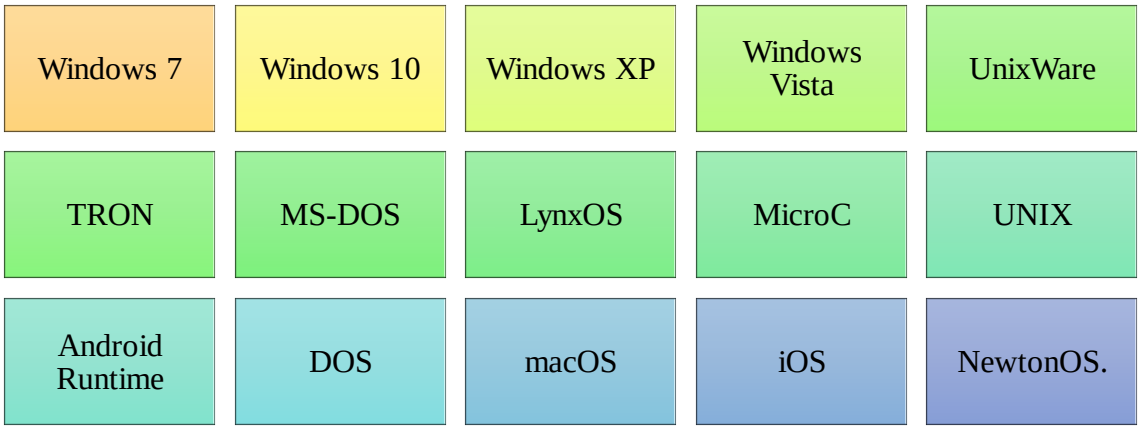


Fig. List of few operating systems

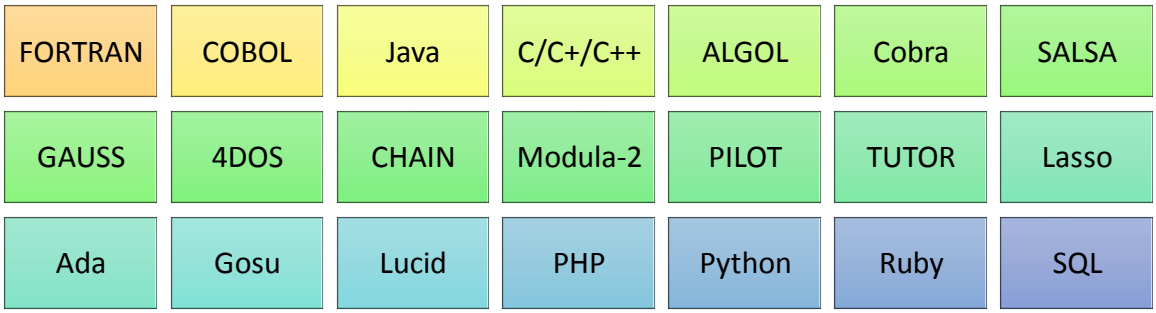
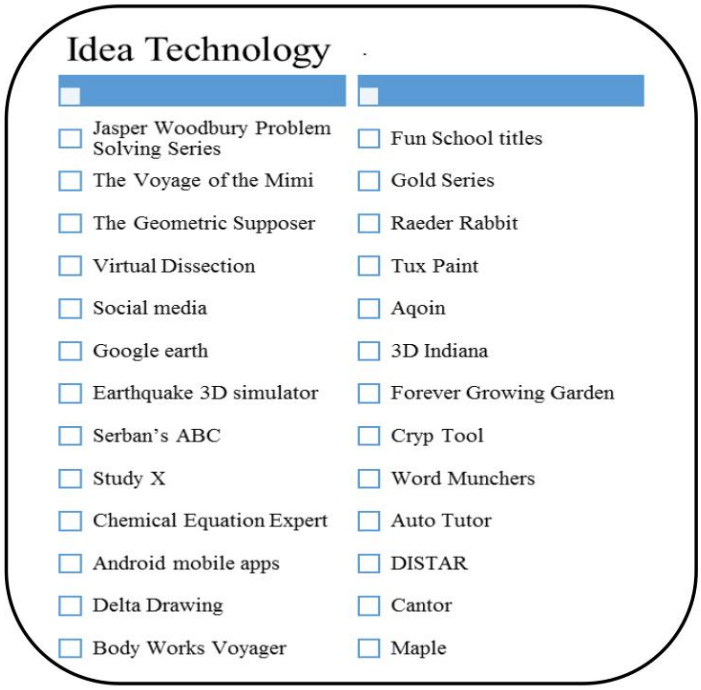


Fig. List of few programming languages

3) Ideological component of technology (Idea Products): It deals with need of lesson plan and merger of technology. It includes simulations, 3D classes, Virtual dissections, Animations, puzzle solutions. They need a software to design. The distinction between product technologies and idea technologies is, the product technology uses hardware like computer etc. and the idea technology is the course designed by using a software that can be run through product technology.



Most of the historical attempts to use technology in education have focused on product technologies, such as teaching machines, educational television and films, and, most currently computers (Reiser,1987). The role of product technology is only to support the idea technology. It is the idea technology that converts the behavioural component of learning to cognitive component of learning. Idea technology deliver the knowledge in a very systematic, controlled and easy way. Several companies designed and developed such programmes, some of them are free on line.

Students and educators discuss their definitions of writing. Educators also share their views on how social media can both benefit and hinder writing in the classroom. Teachers advocate for students to engage in some handwriting, as they believe it promotes deeper thinking, synthesizing, and revising, while also reducing the likelihood of copying and pasting from others' work. With the advent of social media, students have the opportunity to collaborate on writing, disseminate their work to a larger audience, and express their creativity more freely (Purcell, et al. 2013).

As an educators, we should inspire students in their educational journey. The higher the level of student motivation to learn new concepts, the greater the chances of them remembering the information. Studies have shown that technology-rich environment, integrating technology in education enhances student motivation to learn. According to Schaen et al. (2016) who performed a project on third graders collaborated with first graders to develop an app designed for kindergarteners to practice math skills. After a week, provided students with opportunities to engage with technology, work together, and share knowledge. This study had shown how the steps did the students took and the results of their efforts. The technology-based initiative sparked enthusiasm among students, encouraging many to continue their work at home. "The project gave young students a real-world purpose for planning and creating collaboratively"(Schaen et al. 2016).

CONCLUSION

Impact of ICT on Education. It improved student performance. Studies have shown that ICT integration enhances student engagement and comprehension, leading to improved academic performance. Adaptive learning systems provide personalized recommendations, addressing individual learning needs. It empowered educators that is teachers benefit from ICT through access to professional development programs, digital teaching aids, and online communities. ICT tools enable educators to track student progress, offer real-time feedback, and tailor instruction to meet diverse learning styles. It

has created bridge and reduced the digital divide. Despite its benefits, the digital divide remains a challenge, with disparities in access to ICT resources among different socioeconomic groups. Governments and organizations are implementing policies to provide infrastructure, training, and support to underprivileged communities. It has created challenges and future prospects. While ICT offers numerous advantages, challenges such as inadequate infrastructure, cybersecurity threats, and resistance to change hinder its full potential. Future advancements in artificial intelligence, virtual reality, and big data analytics are expected to further enhance the role of ICT in education, making learning more immersive and data-driven. ICT has significantly contributed to education by improving accessibility, engagement, and efficiency in teaching and learning. As technology continues to evolve, its integration into the education sector will further revolutionize knowledge acquisition and dissemination. Stakeholders must collaborate to overcome challenges and ensure equitable access to ICT resources for all learners.

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