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Implementation of Technology in Education in Covid- 19

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Abstract: ***The era of 21st century is often regarded as the era of technology. Technology has certainly changed the way we are living. It has impacted different facets of life and redefined living. Several manual tasks as well as complex and critical processes are now automated, thanks to technology. Education system tools no exception. Technology has revolutionized the field of education. Impact of technology on education is be seen in two ways: first, in the form of courses about technological development and their application and second, the application of technology and its allied tools in the process of instruction, learning and evaluation that even transcends all activities of educational institutions at different level. Today the role of educational technology in teaching is of great importance because of the use of information and communication technologies (ICT). Due to Covid-19 outbreak many universities shifting their focus on E –learning systems. With time and circumstances, the way educational institutions have openly welcomed the change, it is admirable. E-Learning in educational system not only brings innovation in traditional teaching methodologies but also improve students learning experience and performance. This paper is an attempt to explore the new roles of technology in recommencing teaching learning process in covid-19 pandemic. It will discuss the role of technology in education along with its merits and challenges. And hopefully facilitate our decisions about the use of technology to enrich the quality and educational opportunities for learners.***
Keywords: Education, Technology, E-learning, ICT, Covid-19

I. INTRODUCTION

The use of technology has enriched the world in all walks of life including of education. One can see and feel the change in air as classrooms are becoming modern and teachers and students are benefitting with gadgets such as computers, Smart phones, tablets etc. The advent of internet has made a huge change in demonstrating the difficult concepts and ideas to children and make learning almost fun. Information today has been encapsulated in internet which can be beautifully used to allow learning be a fun rather than being a drudgery.

II. MEANING OF TECHNOLOGY IN EDUCATION

The term ‘ Technology in Education’ comprises of two terms viz. technology, which means the practical application of scientific knowledge to aid and enhance human abilities, senses, intellect, efforts and productivity and education on the other hand Education refers to the process of acquiring socially desirable knowledge, skills and values by learning and instructions. Technology in education therefore conclusively refers to the use of variety of technological tools (viz. audio-visual aids, communication media, computer, internet etc.) and applications for instruction and learning. According to NCERT(2006), the term ‘Technology in education’ was coined much earlier in the process of evolution of the term “ Educational Technology or “Technology of Education” and then educational writers narrowly viewed its meaning as aids (audio-visual) that can be primarily used as transmitter of lesson content. The meanings of these terms are in a constant flux. The ever changing nature of technology also changes the configuration, structure and application of technology in education along with the other aspect of human endeavour. In the evolutionary process the term technology in education at some point of time relabelled as technology of education and at some other point of time as educational technology. Therefore here we look for a more acceptable meaning of the term “technology in education” for the practical purpose of our discussion about the role of technology in education. We can conclude the meaning of “Technology in Education” as the use of every form of technology (viz. software and hardware, including human speech, writing, printing, curricula, chalk and blackboards and in the recent past, photography, telephone, cinema, radio, television, video and more recently computers, internet and other digital communication media) relevant to education. “Technology” is bridging the gap between teacher and learner. Technology integration nowadays has gone through innovations and transformed our society that has totally changed the way people think, work and live. (Grabe, 2007). ICT enabled classes can be used in various ways where it helps both teachers and students to learn about their respective subject areas. A technology based teaching and learning offers various interesting ways which includes educational videos, stimulation, storage of data, the usage of databases, mind mapping, guided discovery, brain storming, music, World Wide Web (www) making the learning process more fulfilling and meaningful. (Finger & Trinidad, 2002).

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III. OBJECTIVES OF USE OF TECHNOLOGY IN THE CLASSROOM

A. To help students in preparing for their future careers, which will include the use of wireless technology
B. To make a class more interactive
C. To prepare students for the real world environment
D. To make students to opt technology
E. To make available information quicker and easier than ever before
F. To be more effective as facilitator
G. To promote self-learning ability in students

IV. INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

Information and communication technology in general refers to diverse set of technological tools and resources used to communicate, create, store and manage information. ICT integration in teaching learning helps in achieving objectives and learning outcomes related to the content to be taught and learnt. Teachers must be aware of technology, pedagogy and content integration to facilitate learning, leading to acquisition of knowledge.

Possible potential of effective integration of technology with a range of pedagogical approaches is shown below.

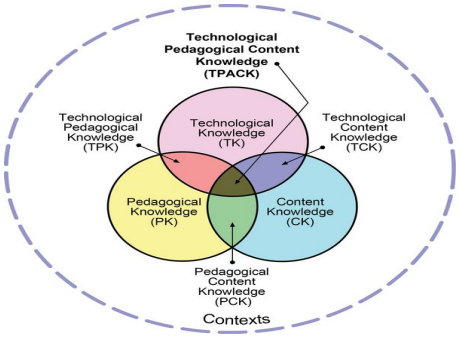


Fig. 1 TPACK

V. TYPES OF TECHNOLOGY IN EDUCATION

ICT not only refers to use of latest computer and telecommunication based technologies, but also it aims at use of simple audio visual aids such as transparency, slides, tape recorders, radio, video, television, films etc. The technologies that are commonly used in education for aiding instruction and enhance learning can be classified as synchronous and asynchronous media based on their characteristics.

1) *Synchronous:* This media require all participants in the instructional process to be present together at the same time even though in different locations but connected by any computer and telecommunication based system.
2) *Asynchronous:* This media on the other hand allow for participants to study at their preferred time and place without directly remain connected with the instructor but certainly connecting with the content of instructional module to which they have been provided with off-line access.

Below mentioned table categorizes types of Technologies/Media used in Education

TABLE I
types of Technologies/Media used in Education

Synchronous	Asynchronous
Educational Radio	Audio Recordings, Podcast
Educational Television	Video recordings
Telephone	Off-line Multimedia packages
Teleconferencing	Downloaded computer files/web content
Audio Conferencing	Downloaded video and audio content
Live chats	Virtual conferences
Instant messaging	E-mail.
On-line tutoring system	Streaming video and audio
Google meet, Zoom apps etc.	

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VI. PHASES IN APPLYING TECHNOLOGY IN EDUCATION

For meaningful use of Technology in education one has to establish a phased system for utmost result.

1) *Establish Guidelines:* Students perform better when they know proper guidelines, benefits and expectations from them.
2) *Encourage Student Interaction:* Use of technology may lead to passive learning, hence a teacher must ensure that students stay engaged and online class remain interactive.
3) *Use Appropriate Technological Tools:* Students frequently divert from their learning task and therefore to keep them motivated teacher must use different media/tools.
4) *Facilitate Access:* Provide access to copies of video, audio or other material used in class for reference.
5) *Practice:* Use of technology can take some time to master. Class time is precious so teachers should practice and get familiarized with the technology to be used.
6) *Backup Plan:* Technical failure is unavoidable occasionally so it is a good idea to always have a backup plan or material on hand. A written summary of video can help.
7) *Ensure Equal Opportunity to All:* All students must get equal chance to actively participate in technology mediated lessons.
8) *Avoid Overuse:* Overuse of technology where it is not needed can unnecessarily distract the students focus from learning task and even obscure a point.
9) *Set Ethical Principal:* For the meaningful and honest use of the content that is available in the media or internet students should be provided with clear cut guidelines based on ethical use of others intellectual property be it write-ups, photographs, video or audio clips, charts, diagrams, presentations, books articles etc.

VII. OUTCOMES ACHIEVED BY THE USE OF TECHNOLOGY IN EDUCATION

Technology can improve education to a great extent and it has now become a need for revolutionizing education for the better. Role of technology in education or teaching can be viewed in wide aspect.

A. *Learners Centered*

1) Organized and interactive presentations can be achieved
2) Optimized pace of content delivery
3) Better learning experience
4) Ease in visualizing real life problems
5) Individual learning styles can be matched
6) Engaged learners
7) Instant feedback from learners
8) Wide range of information/data can be accessed
9) Improved teamwork through uninterrupted interaction
10) Motivated students

B. *Teacher Centered*

1) Ease of managing attendance, assignments and student progress.
2) Comprehensive and objective assessment
3) Ease in maintaining student's development data
4) Ease in mentoring data
5) Effective and organized lessons
6) Reduction in the time on repetitive tasks
7) Personalized access to learners with special needs
8) Recognition in peer groups

C. *Society Centered*

1) Easy adaptability by all age learners
2) Underprivileged and downtrodden brought into the stream
3) Reduced expenses on education
4) Reduced stationary leading to green education

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VIII. CHALLENGES IN APPLICATION OF TECHNOLOGY IN EDUCATION

Although technology in education has many benefits, there are certain challenges.

1) High infrastructure and establishment cost: High initial expenditure to install technological hardware and software.
2) High maintenance cost: Proper maintenance and upgraded equipment's are needed.
3) Access in rural area: In developing and undeveloped countries infrastructure and affordability is the main cause of limited access.
4) Linguistic limitations
5) Expensive training and orientations are required
6) Resistance in adopting new teaching learning technological tools
7) Technical Failures

Hence while using of technology in education one should recognize its importance with its strength and limitations.

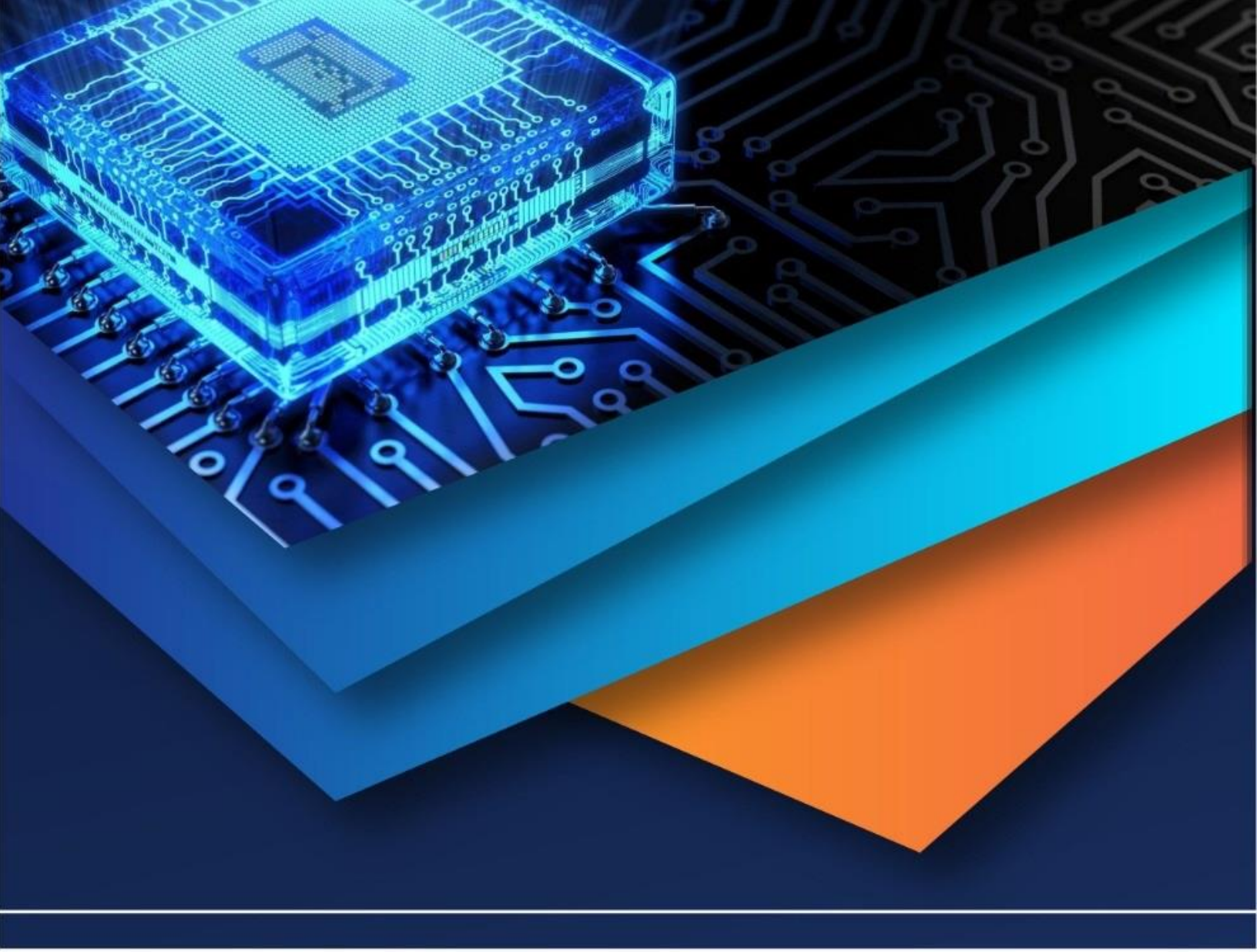
IX. CONCLUSION

Technology is changing the face of teaching and education. Teachers have more resources available to present the content and learning experiences and students have more opportunities to engage themselves in learning. Traditional classroom is getting replaced with emerging technologies such as computers, tablets, net books, interactive whiteboards and wireless solutions. With the technology, education has taken a whole new meaning that it leaves us with no doubt that our educational system has been transformed owing to the ever advancing technology. Now we can prepare students for their lifelong learning which requires new approaches to education that incorporate technologies increasingly as part of student's everyday lives. It is said that a well -rounded education is a gateway to personal success. In a world where geographic boundaries are blurring, learner has flexibility to connect and collaborate with people anywhere at any time communicating information in more dynamic, engaging ways. Today's students will become tomorrow's leaders in science, technology, healthcare, arts and other areas. In Covid-19 pandemic use of technology in education is helping to break the shackles. And to keep on moving in future also it's a need of hour to evolve by investing, training and accepting use of technology in education.

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