

# Role of Digital Learning in Education

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## ABSTRACT

One of the fundamental components of the United Nations' sustainable development 2030 agenda is quality education. It aims to ensure inclusive and equitable quality education for all. Digital technologies have emerged as an essential tool to achieve this goal. These technologies are simple to detect emissions sources, prevent additional damage through improved energy efficiency and lower-carbon alternatives to fossil fuels, and even remove surplus greenhouse gases from the environment. Digital technologies strive to decrease or eliminate pollution and waste while increasing production and efficiency. These technologies have shown a powerful impact on the education system. The recent COVID-19 Pandemic has further institutionalized the applications of digital technologies in education. These digital technologies have made a paradigm shift in the entire education system. It is not only a knowledge provider but also a co-creator of information, a mentor, and an assessor. Technological improvements in education have made life easier for students. Instead of using pen and paper, students nowadays use various software and tools to create presentations and projects. When compared to a stack of notebooks, an iPad is relatively light. When opposed to a weighty book, surfing an E-book is easier. These methods aid in increasing interest in research. This paper is brief about the need for digital technologies in education and discusses major applications and challenges in education.

**Keywords :** Paradigm, Sustainable Development, Efficiency, Digital technologies, knowledge

## Introduction:

Digital Education is a technique or method of learning which involves technology and digital devices. This is a new and broad technical sphere which shall help any student attain knowledge and gain information from any corner across the country. It is believed that Digital Education in India is the future of education and learning. Various channels have been defined by the Government of India for a widespread of the sources and means to provide education to different corners of the country. Discussed further in this article are the channels and initiatives taken up by the Government for Digital Education in India.

## Data and Methodology:

The present research paper is based on secondary data which has been collected from different research journal, library and websites.

## Results and Discussion:

Need for digital technologies in education

The globalization of education has already necessitated the application of digital technologies.

Online platforms were available for conducting classes, sharing resources, doing the assessment and managing the day to day activities of academic institutions. However, the use of these platforms was proactive. The COVID-19 Pandemic has forced the institutes to adopt the online teaching mode to sustain the education system. Developed countries were well equipped to deal with this crisis. However, developing countries worked hard to meet this requirement. Digital technologies have emerged as the saviour of education in this critical time. This global crisis highlights the need to be internationally integrated into the education system. Digital technologies assist in developing abilities that will require students' professional performance, such as problem-solving, thinking structure creation, and process comprehension. They are also preparing for a more unpredictable and changing future in which technology will play a critical role. Students' acquired qualities and abilities will be essential to their professional success. Educational resources and digital tools help to improve the classroom atmosphere and make the

teaching-learning process more compelling. Furthermore, they give each educational institution greater flexibility and customization of curriculum based on the requirements of each student.

Children might become more engaged in learning if technology is used in the classroom. Because youngsters nowadays are pretty accustomed to the usage of electronic gadgets, incorporating them into schooling would undoubtedly assist in piquing their interest and enhancing their involvement levels. Integrating technology into education provides students with an engaging learning experience, allowing them to remain more interested in the subject without being distracted. The utilization of projectors, computers, and other cutting-edge technical gear in the classroom may make studying fascinating and entertaining for students. Student learning can become more dynamic and engaging by establishing tasks in class that incorporate technology resources, oral presentations, and group participation. Participation can extend beyond verbal communication as well.

Using computers and other devices in conjunction with digital tools allows students to play a more proactive role and be at the centre of the process. The instructor becomes a guide in this process and can approve learning efficiency. Using the myriad of digital resources, learners may download the required information or upload their content. The web 2.0 technologies (wikis, podcasts, blogs etc.) facilitate learners to generate content, collaborate with others, assess each other work and move toward co-learning. Digital technologies make it easy to use classroom tactics like gamification or approaches like flipped classrooms that optimize learning. Learning landscapes have evolved as a didactic tool that mixes several techniques and enables distinct itineraries to be presented to each student. Technology makes the instruction more inspiring and meaningful.

### **Challenges of digital technologies in education**

Educational technology is not without its difficulties, notably in implementation and usage. Issues regarding excessive screen time, the efficacy of instructors' use of technology, and concerns about technology fairness are also raised. The content has become more significant as a result of the COVID-19 problem. Educators must generate and comment on online educational content, encouraging students

to analyse a topic from several angles in particular. Furthermore, while some students thrive in online learning settings, others struggle due to various factors, including a lack of support. For example, a student who has previously suffered in face-to-face circumstances may suffer far more in the current situation. These people may have been reliant on services that are no longer accessible. However, online education may provide difficulties for instructors, particularly in areas where it has not been the norm.

Some of the reasons for the learning crises are widely known. One crucial factor is the poor quality of instruction. Teachers frequently lack topic expertise and have received little training. There are technology solutions to this, and they could be helpful in both training instructors and instructing students. Technologies can provide in-service training or a combination of online and in-person training. Additionally, there is evidence that instructors require better incentives. They can educate but lack the motivation to do so. Even though education has always extended outside the conventional classroom, the changing circumstances and scale of digital and remote contexts demand significant adaptation, preparation, support, and engagement. Limited or no contact with students, rethinking engagement, reaching, teaching approaches, appropriately addressing a range of unique needs, motivating students, handling conflicting time demands, and coping with constrained settings may contribute to attentive learning and teaching.

There is also evidence that low-tech interventions for "instruction at the appropriate level" can significantly affect learning. Because low-tech solutions are less expensive and funding restricts impoverished nations, careful investigation is required to establish whether high-tech or low-tech solutions are better or not. Teachers are teaching through video, but they are not always teaching better than they would if they were standing in front of a classroom. More massive open online courses are being offered and taken up, but many are not for primary education and do not address the learning issue. It necessitates hardware and connectivity at home, inaccessible to children in low-income homes. Gamification and other strategies may encourage youngsters to devote more time to studying.

Finally, consider that effective learning outcomes may be obtained without using education technologies .

Some students are having difficulties as a result of this online schooling. Some students come from low-income families and do not have cellphones in their homes; thus, they struggle in school. Millions of youngsters simply do not have access to the internet at home. Students under 15 acquire this complex technology early, yet they struggle with poor vision and backache. Teachers are also having difficulty since some are utterly inexperienced with digital technologies. Nonetheless, they do everything possible to educate their children through online classes. College students who take more practical subjects than theoretical subjects face similar challenges because practical knowledge is not attainable in online programme .

While technology can be considered yet another avenue for cheating, it is possible to design assignments and assessments so that such an occurrence is unlikely. On the other hand, open-book exams can be used to emphasize problem-solving and mastery over retention. Time-consuming processes such as tracking student attendance and performance can be sped up with automation. Because of their objective nature, engagement tools can assist in expediting grading for writing assignments, conversations, and participation and address typical student inquiries. Without proper information and communication technology equipment, internet/mobile network connectivity, instructional resources, and teacher training, students cannot participate in distant education. Students from resource-poor locations, isolated rural areas, and low-income households are more likely to fall behind. Learners with disabilities or who speak a language other than English at home will require additional individualized assistance.

### **Students' Experience of digital education**

Digital technologies allow students to experience the globe and go to faraway places from the comfort of their computers. Inviting a guest speaker to talk to the class about their expertise is terrific to spice up any lesson plan. Video conferencing systems make it simple to bring a subject matter expert face-to-face to our classroom, no matter where they are. We can easily organize a classroom video conference with kids from another institution. Online polls and other digital technologies engage all students, timid kids who would

not ordinarily raise their hands in class. Online engagement tools enable checking in with students regularly to solicit input on course materials and assignments. Student insights can also be utilized to identify areas where students may be struggling. Student response systems promote digital citizenship in the classroom by allowing students to participate in class while also being rewarded. Schools serve an essential role in our communities, and their closure has far-reaching consequences for the psychological well-being of many families and children. Digital technologies can easily take up this challenge. Online learning allows students to learn at their speed, pause and re watch videos, and explore course content independently.

Quizzes are another active learning strategy that education technology may help. Students may begin working on a project together in class and fluidly collaborate, communicate, and bounce ideas off one another utilizing social media, interactive whiteboards, and other technology. Physical and social constraints allow students to collaborate from anywhere and at any time. Technology has also enabled students to join in spontaneous discussions and obtain immediate answers to any difficulties or questions regarding a subject. Because of self-paced learning and individual variances, students will virtually always complete their work at various times. When this happens, maintaining students' attention is as simple as giving them access to educational films, course-based games, or interactive learning tools. As a result, faster-paced students no longer need to wait for all of their colleagues to finish before continuing their studies, while slower-paced students are no longer tempted to rush through their work. This Education 4.0 programme will be implemented in future schools to improve education and better prepare the next generation of potential. Further, Artificial intelligence will help driver less cars travel more effectively and reduce emissions. Material scientists are using AI to produce biodegradable plastic substitutes and techniques to clean our seas. Recycling and up cycling may appear to be simple procedures, yet they are highly effective instruments for increasing sustainability efforts. Recycling is a game-changer for sustainability, whether it is consumers reusing bottles to decrease plastic waste or businesses fashioning discarded objects into new goods.

### **Future of technologies in education**

Small, medium and large-scale education technology companies have started proliferating in the future and are offering various new digital solutions to academic institutions. This will improve the quality of digital infrastructure across the country, making innovative educational technology more accessible to larger masses. We foresee the removal of all linguistic boundaries and better Online availability of learning resources in regional languages. E-learning and m-learning programme provide students and teachers access to a vast pool of information content. While technology will play an essential role in shaping the future of education, ensuring that new teaching tools are used effectively will require a new generation of educators who understand the importance of human connection in the classroom. These can lead to a satisfying and engaging career in education. Students gain the knowledge and skills necessary to employ new educational technology to maximize their advantages for today and in the future. In upcoming years, education trends will ride the tide of growing internet capabilities and network capacity, making it easier to incorporate innovative technology into classrooms. However, there is no complete substitute for offline (classroom) teaching & learning. Thus we have reached the era of hybrid teaching and learning, where both online and offline systems are integrated to enhance the outcomes and are envisaged as an outcome of the implementation of Education 4.0

### Conclusion:

Technology has undeniably transformed education, offering students and teachers tools that were unimaginable just a few years ago. While challenges remain, the future of education is bright, with technology playing a pivotal role in shaping how we learn, teach, and interact with knowledge. For educational institutions, embracing digital transformation is no longer optional—it's essential for staying relevant in an increasingly connected world. As students become more tech-savvy, it's crucial to prepare them with the skills they'll need to thrive in the future. The journey of education through technology is far from over; it's just the beginning. Schools, teachers, and policymakers must continue to explore innovative solutions that make learning accessible, engaging, and meaningful for every student.

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