

## ROLE OF DIGITALIZATION IN EDUCATION SECTOR

**Ms. Mohini Gupta**

Assistant Professor- Department of Management, Lucknow Public College of Professional Studies, Lucknow

**Dr. Hari Mohan Saxena**

Associate Professor- Department of Management, Lucknow Public College of Professional Studies, Lucknow

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### ABSTRACT

Higher education institutions around the world have adopted ICT integration policies and practices as a result of the way that digital technology has changed the nature and scope of education. The latter raised concerns about the effectiveness of ICTs in education, particularly with regard to comprehending, modifying and developing curricula that take use of recent technical developments. Concerns regarding classroom digitalization have been raised by the COVID-19 pandemic, which has accelerated the deployment of digital tools in education. These issues came to light during the pandemic. In particular, a lack of competence and a poor level of digital capacity were shown by many schools, which made inequalities, learning deficits and disparities worse.

As a result, educational institutions must now build on their knowledge in order to boost their levels of digitalization, enhance their digital competency and readiness and carry out a digital transition successfully. Many stakeholders in the school ecosystem are impacted by the incorporation of digital technologies, thus it is critical to demonstrate how these effects relate to one another and pinpoint the elements that might facilitate a successful and efficient transformation of school environments.

That ICT integration in the classroom influences stakeholders and a number of other school-related factors in addition to student performance. Furthermore, the effects of digital technology on education depend on a number of circumstances. These elements are interconnected and essential to the process of digital transformation. The study's findings provide insight into the factors that need to be taken into account for change to be successful as well as how ICTs could help schools make the switch to digital learning environments.

### LITERATURE REVIEW

- Burcu Arisoy in his paper "Digitalization in Education" have focussed on the various factors like fear of people about education, lack of informative material and low existence of digital literacy.
- Nur Maslina Mastam and Rozniza Zaharudin, in their paper "Impact of digitalization for students with disabilities" have explored the requirements of disabled students and the need for including digital literacy among students with special needs.
- Dyka, Olha Tretiak, Svitlana Horobets and others have indicated that the teacher competencies, their communicative skills and their adaptation for new methods of teaching reduce with the increasing work experience in their paper on "The Impact of Digitalization of education on the development of key teacher competencies".
- Vrusty Meet Shah and Dharmesh Shah in their paper on "Impact of Digitalisation in Education - A literature review Ananlysis" have discussed about the use of emerging

  
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technologies in education sector and their impact on teaching and learning processes. It also emphasises on the role of digitalisation in increasing student involvement and education quality.

- Eva, Silvia Akter, Mashruha Zabeen and Shamsul Huq Bin Shahriar in their research paper "Exploring the future of learning: understanding the innovation in learning from the perspectives of developing nation" have indicated the widespread acceptance of learner centered technologies where hybrid mode of learning offers more flexibility, easy accessibility and better student involvement.
- T.B. Bykova, M. Ivashchenko, Darja A. Kassim and V. Kovalchuk have discussed about the prominent use of digital technologies in learning and widespread use of blended learning.

## INTRODUCTION

The nature and extent of education have changed as a result of digital technologies. Blockchain, smart devices, augmented and virtual reality, software applications, the Internet, artificial intelligence and other disruptive and adaptable technology developments have created new avenues for educational improvement. In order to change strategies or policies surrounding ICT integration, education systems worldwide have recently boosted their investment in this area. The latter specifically raised concerns about how effectively ICTs are used for instruction and learning as well as how well educational curricula are comprehended, modified and created to stay up to date with contemporary technological developments.

Even considerable money has been spent on incorporating technology into education. Studies have revealed that the desired results have not yet been achieved. The COVID-19 pandemic, which required online learning at all educational levels, made these problems worse. The use of digital technology in education has increased as a result of online instruction, raising concerns about the nature, scope, and efficacy of this process. In particular, several schools showed a lack of understanding and poor digital skills, which contributed to growing disparities, learning obstacles and inequalities. In order to strengthen their digital capabilities and degree of digitalization, educational institutions now need to develop their knowledge and level of expertise due to the aforementioned findings.

Many facets of a school's development are impacted by digitalization, which also presents opportunities for significant educational breakthroughs. But it's a difficult process that calls for significant, revolutionary adjustments that transcend technological design and technical requirements. Through the integration of digital technologies, "digitalization" explicitly refers to "a series of deep and coordinated culture, workforce and technology shifts and operating models" that change organizational structure, operations and culture. Schools must increase their digital competency in order to implement digital transformation successfully. They must also develop the "culture, policies, infrastructure as well as digital competence of students and staff to support the effective integration of technology in teaching and learning practices."

Based on the information provided regarding the ways in which digital technology impacts education and the elements influencing schools' capacity to undergo digital transformation, the results were mind boggling.

## CURRENT TRENDS IN DIGITALIZATION

Enhancing learning through accessibility, customisation, and engagement is the main goal of the current trends in digitalizing education because online learning platforms are becoming more and more popular, students can now access educational resources at any time and from



any location. To provide a more effective and individualized learning experience, training is being tailored to each student's needs using adaptive technology and personalized learning systems. Aiming to increase student motivation and engagement by including interactive components into the learning process, gamified learning platforms and educational applications are also becoming more and more common. These patterns indicate a move toward more adaptable, student-centered teaching approaches that leverage digital resources to create dynamic, captivating learning environments.

### SCOPE OF DIGITALIZATION IN EDUCATION

The extent of digitalization in education is enormous and continuously expanding, creating new avenues for creative and revolutionary approaches to instruction. The following are some important areas where digitalization can make a big difference:

**Personalized Learning:** Teachers can adapt their classes to each student's particular needs and chosen learning style by using digital resources. As a result, learning environments become more engaging and productive for students.

**Access to Education:** Thanks to digital resources and online learning platforms, students around the world, especially those in remote or underdeveloped areas, now have better access to education. This can help bridge the educational opportunity gap and promote lifelong learning.

**Enhanced Collaboration:** Students, instructors and organizations can collaborate more easily on projects that foster community and teamwork when using digital platforms. They also facilitate smooth communication and the sharing of materials.

**Data-Driven Decision Making:** Digital technologies enable the collection and analysis of data on learning outcomes, student performance and engagement. By utilizing data, educators can improve student learning and teaching strategies by making more informed judgments.

**Continuous Learning:** People can acquire new skills and knowledge through a range of online courses, training programs and other resources made available by digitalization, which promotes continuous learning.

**Technological Literacy:** By integrating digital tools and technologies into the classroom, educators may assist students in acquiring the skills necessary to succeed in a workforce and society that is becoming more and more dependent on technology.

There are numerous applications for digitalization in education in general. It has the potential to raise student achievement, alter conventional methods of instruction, and establish more vibrant, welcoming classrooms.

### ADVANTAGES OF DIGITALIZATION

There are several benefits to digitalizing education that improve the caliber of teaching and learning. One of the primary advantages is that learning is no longer restricted by geography thanks to digital tools and resources that enable students to access course materials from any location with an internet connection.

Additionally, digital platforms provide individualized training that meets each learner's unique needs and learning preferences. This leads to potential for personalized learning.

By providing interactive and multimedia-rich material, digitization increases student engagement and makes the learning environment more dynamic and captivating. Digital platforms also make cooperation easier by allowing students to work together on projects and assignments from anywhere in the world.



Digitization also offers chances for ongoing education and skill improvement, equipping students for success in a world that is becoming more and more reliant on technology.

The use of digital technology in teaching has other advantages. Students have access to a multitude of tools, including interactive simulations, e-books, instructional videos, and online courses. They can use these resources to add a range of educational resources to their homework. The wealth of available resources creates a more thorough and engaging learning environment.

Since they can utilize these tools to monitor students' progress, give prompt feedback, and adjust their lessons accordingly, teachers may now evaluate and deliver feedback to students in real time thanks to digitalization. In addition to assisting students in identifying areas for improvement, this prompt feedback loop promotes a growth mindset.

Additionally, digitalization facilitates communication and collaboration between instructors and students through the use of video conferencing, online discussion boards, and collaborative platforms.

Peer-to-peer learning is improved, knowledge sharing is encouraged, and discussions are facilitated—all of which make the learning environment more dynamic and captivating.

#### **IMPACT OF DIGITAL TECHNOLOGIES ON STUDENTS' KNOWLEDGE, SKILLS, ATTITUDES, AND EMOTIONS**

The impact of ICT use on students' attitudes, knowledge and abilities has already been studied in the literature. Specifically, the author asserted that if computer-assisted instruction (CAI) applications were utilized to augment rather than replace instruction, having access to them in instructional or simulation modes might improve student learning. The author provided evidence that educators recognized the advantages of ICT for children with special education needs, despite the fact that it was unclear how ICT enhanced students' academic performance. There is a statistically significant positive correlation between the use of ICT and improved academic performance in elementary and secondary school. The writers also talked on how underachievers' performance has improved.

Increased focus, motivation, engagement, communication and process skills, teamwork, and changes in behavior related to learning were also reported by students who used ICT. The results of qualitative research demonstrated that teachers, students and parents all acknowledged the beneficial effects of ICT on education, irrespective of the students' proficiency level (strong vs. poor). Studies demonstrating the benefits of ICT-based learning for assisting underachievers and young people with complex lives outside of the school system were reported by Punie et al. (2006).

#### **DIGITAL TECHNOLOGY'S EFFECTS ON TEACHERS' PROFESSIONAL AND INSTRUCTIONAL PRACTICES**

Digital technologies have brought about substantial changes in the ways that teachers approach professional development, communication, and instruction. The improvement in teaching efficacy brought about by the use of digital resources and tools is one noteworthy result. With the use of technology, educators can adapt their pedagogical techniques to suit the various requirements of their pupils, use multimedia and design dynamic and captivating classes. This could therefore result in better learning results, a more lively classroom atmosphere and increased student participation.

Teachers can also take use of a wealth of professional development opportunities, collaborative platforms and educational resources made possible by digital technologies. A



wide range of materials are included in online resources for teaching and learning, including educational websites, digital learning platforms and virtual libraries.

The effects of ICT on teachers' teaching methods and student assessment procedures have been the subject of numerous research. By incorporating video games into their class plans, educators can explore and use a variety of pedagogical methodologies. It has been demonstrated that teachers can optimize learning results and student engagement by breaking up instructional events into three stages: pre-game, game, and post-game. Teachers, for example, concentrated on lectures and gaming instruction during the pre-game phase; they oversaw classroom activities, handled technological problems and supplied material scaffolding during the game phase. To make sure the gaming had improved students' learning outcomes, teachers planned post-game debriefing sessions.

By providing teachers with more opportunities to cooperate, ICT can help improve the efficacy of class planning and preparation. The curricular plan sharing and student data analysis boosted parent feedback and helped establish goal settings more precisely.

Additionally, integrating digital tools into classroom has been shown to improve instructors' technological proficiency. Teachers who had recently finished development courses on the pedagogical use of technology in teaching or who were sufficiently proficient at integrating ICTs into their teachings had the biggest impact. The availability of fully functional multimedia portable laptops and the growth of online teacher communities have been shown to positively impact teachers' confidence and ICT skills.

Instruction is also enhanced when ICTs are used for online evaluation. Online tests, for example, improve the technical quality of exams because they yield more accurate results, encourage the digitization of student work and associated procedures and give teachers the flexibility to adjust to new goals and get timely feedback. Additionally, the capabilities of ICTs (such as interactive media and simulations) open up new avenues for evaluating particular skills, including the ability to solve and process problems, metacognitive skills, creativity and communication skills and the ability to work well in a team.

It is important to recognize that teachers face several challenges while adopting digital technologies. These challenges include managing potential negative effects and distractions from technology, addressing concerns with digital equity and accessibility and requiring continual professional growth and assistance in the classroom.

Teachers must innovate, adapt and use technology responsibly in order to improve their practices and support students' learning in the digital era. This is because digital technologies have a wide range of consequences on teaching and professional practices.

## CONCLUSION

In conclusion, digitalization has a profound impact on education by providing a number of chances to improve teaching and learning strategies, make education more accessible and provide students with the skills they need to thrive in the digital age. With the right use of digital tools and resources, educators can design unique, captivating learning experiences that meet the needs of every individual student. All parties involved in the educational ecosystem benefit from increased collaboration, communication and engagement brought about by digitalization, which strengthens ties within the community and promotes shared learning. Although there are many advantages to digital technology, businesses and educators must handle issues such data protection, digital equity and the requirement for continuous professional development.



A cautious and responsible embrace of digitalization can lead to a more creative, inclusive, and successful educational system that prepares students to thrive in a technologically driven and increasingly interconnected society.

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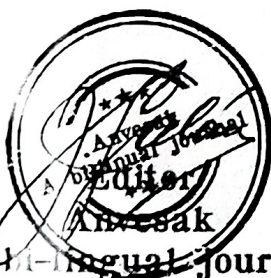
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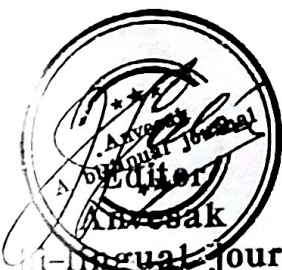
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