

## EDUCATIONAL TECHNOLOGIES IN TEACHING AND LEARNING

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**Abstract.** The basic tendency of this paper is to analyze various views and experimental theories of educational technologies in teaching and learning as the increasing application. The article presents the main and brief content of all conflicting concepts and opinions in terms of myriad researchers' theories and experiences on how to make the educational process effective and productive with the educational technologies.

**Key words:** the impact of technology in learning process, enhanced engagement, access to diverse resources, personalized learning, collaborative learning, flexibility and accessibility, differentiated instruction, data-informed instruction.

### Introduction

Educational technologies play a crucial role in teaching and learning, offering numerous benefits to both educators and students. Educational technologies can captivate student interest and motivation by offering interactive and multimedia-rich learning experiences. They provide opportunities for active participation, hands-on exploration, and gamified approaches that make learning more enjoyable and engaging.

Educational technologies facilitate access to a wide range of digital resources, including e-books, online videos, interactive simulations, and virtual field trips. This access expands learning opportunities, exposes students to different perspectives, and allows for individualized learning paths. Additionally, it can offer adaptive and personalized learning experiences. Through data analytics, artificial intelligence, and adaptive algorithms, these technologies can tailor instruction to individual student needs, provide targeted feedback, and offer customized learning pathways that better address learner strengths and weaknesses.

Educational technologies enable collaboration and communication among students, whether through online discussion forums, virtual group projects, or shared document editing. These tools promote collaborative problem-solving, critical thinking, and peer interaction, fostering important 21st-century skills.

Flexibility and Accessibility side of educational technologies provide flexibility in terms of time and location. Online learning platforms, virtual classrooms, and mobile learning apps allow for anytime, anywhere access to educational content and learning materials. This flexibility accommodates diverse learning schedules, remote learning needs, and individual paces of learning.

Formative Assessment and Feedback in educational technologies facilitate real-time assessment and timely feedback. Online quizzes, interactive assessments, and automated grading systems enable teachers to monitor student progress, identify areas needing improvement, and provide immediate feedback to support learning and growth.

It can support differentiated instruction to meet the diverse needs, learning styles, and abilities of students. Through adaptive learning platforms, personalized learning modules, and customizable content, educators can offer targeted instruction, scaffolding, and additional challenges as needed.

Data-Informed Instruction generates data on student performance, progress, and learning patterns. This data can inform instructional decisions, allowing teachers to identify trends, track student growth, and adapt their teaching strategies accordingly. Data-driven instruction promotes evidence-based practices and targeted interventions.

### **Literature review**

Depending on the use and benefits of using educational technologies in teaching and learning, the research by Stosic, L., & Stosic, I. (2013), the terms such as educational technology, educational equipment, AV resources, and teaching technology are used differently in different nations. Terminological distinctions largely relate to how technological features and contemporary appliances are approached, not how they are really used in the classroom, or how pedagogically they are used. Teachers in the social and technical sciences differ in their perspectives because of this. As a result, expertise in a variety of fields is needed to apply educational technology, including pedagogy, psychology, didactics, computer sciences, and informatics. Due to this diversity, educational technology is viewed differently by different authors, who each describe it differently based on their own needs.

Despite their advice, research by Lowther et al. (2012) indicates that educational technology has not yet replaced it. This is most likely the rationale for the social company's legislation. Children in less affluent areas hardly ever utilize the Internet as a learning tool, according to Leu et al. (2009). Children of today are accustomed to using contemporary technology from an early age (Gutnik et al., 2011; Rideout 2011), which makes integrating new instructional technologies into the classroom easier.

Research (Greenhow et al., 2009) indicates that a greater number of students are using contemporary technology. Kaufman, 2004; Lee et al., 2008 did thorough research on the impact of educational technology on cognitive processes.

When utilizing educational technology, our main concerns should be with the tools and apps we employ, their educational value, their suitability for knowledge acquisition, whether or not users and tools interact, and whether or not using them has good consequences.

As computers and other information and communication technologies have advanced, several researchers (Morrison et al., 2010) sought to determine the advantages and impacts of their application in contrast to more conventional, older learning methods.

According to some, the years 1967–1972 saw the consolidation of educational technology, which is now the most widely used term in the field of pedagogy and educational process science (,3aHH.noBHfr, 2004). Through the use of educational technology, students can learn course materials on their own, set their own pace for work, go over unclear material again, receive instant results from tests, and monitor their progress. One major advantage of contemporary learning over traditional learning is the use of interactive, multimedia content. Technology in education allows teachers and students to provide feedback to each other.

Clark Richard was one of the first researchers to compare traditional and modern methods using educational technology research (Clark, R. 1983). In an attempt to determine which method of learning was superior, he compared research on computer guidance and instruction with lectures. Depending on how they are applied, he concluded that they are both effective. Other authors (Dynarski et al. 2007; Kulik, 2003) came to the same conclusion, which is that there are some significant distinctions between traditional teaching methods and the use of educational technology.

### **Conclusion**

Educational technologies create opportunities for lifelong learning, encouraging students to become independent, self-directed learners. By fostering digital literacy skills, students are equipped with the tools to continue seeking knowledge, accessing resources, and pursuing personal development beyond the classroom.

It's important to note that while educational technologies provide these benefits, their successful integration requires thoughtful planning, professional development for teachers, accessibility considerations, and ongoing evaluation to ensure their effectiveness and impact on student learning. It's crucial to remember that even if educational technologies have many advantages, their successful integration calls for careful preparation, continual support, and training. When using these technologies, educators should take into account aspects like data security, accessibility, privacy concerns about the digital divide, and student privacy.

Teachers may satisfy the different requirements of their students in the digital age, improve their instructional techniques, and encourage active learning by effectively utilizing educational tools.

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