


Chapter 8

Trend and Transformation of EdTech (Educational Technologies) in Special Education

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ABSTRACT

The development of Educational Technology (EdTech) has made education more personalized and accessible, especially in the field of special education. Gamification and interactive learning methods have increased student engagement, while the COVID-19 pandemic accelerated the shift to remote learning, highlighting the importance of digital learning platforms. EdTech supports educational processes through components such as artificial intelligence, augmented and virtual reality, and cloud technologies. Digital learning materials, video conferencing tools, and adaptive learning systems enable students to receive education tailored to their individual needs. However, for teachers to use these technologies effectively, they must have sufficient knowledge and training. In special education, the use of technology enhances students' independence and promotes equal opportunities in education. However, challenges such as teachers' access to these technologies, their integration into educational processes, and high costs remain significant obstacles.

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INTRODUCTION

The rise of EdTech has brought about a profound transformation in the field of education. These innovative initiatives have made education more personalized and accessible through gamification and interactive learning methods. EdTech pioneers (BYJU'S, upGrad, Unacademy, Vedantu, Physics Wallah, and Eruditus) have reshaped students' learning styles, transforming in-class experiences into more enjoyable and participatory ones. According to IBEF's forecast, the EdTech sector is expected to grow from \$700-800 million in 2021 to \$30 billion by 2031. According to KPMG, other countries around the world have surpassed the U.S. to become the largest e-learning market globally (Bainbridge, 2016; Molnar, 2017).

In the modern EdTech world, the rapid spread of online education is a notable development. The COVID-19 pandemic accelerated the transition to remote learning with the closure of schools, making the adoption of technology mandatory. This process led many schools, universities, and institutions to swiftly adapt to online education. As the demand for online learning increased, EdTech companies became key players in responding to this need. Platforms offer a wide range of courses, from computer science to history, while providing tools for teachers to create lesson content, manage assignments, and give feedback. Not only online learning platforms but also video conferencing tools (Zoom, Google Meet) and digital textbooks are transforming the education process. Digital textbooks are becoming a more cost-effective and user-friendly option compared to traditional books. In light of these rapid changes in education and training environments, this article provides insights into how the education sector is likely to evolve in the future (Linderoth, 2016; Molnar, 2017).

EdTech is a field that encompasses digital tools, software, and technological solutions used to make educational processes more effective (Linderoth, 2016). This structure aims to integrate innovative technologies into educational systems. Its key components and functions can be summarized as follows:

Digital Learning Tools: Online course platforms, e-learning software, video conferencing tools (such as Zoom, Microsoft Teams), educational videos, and simulations enable interaction between students and teachers.

Content Development Tools: Software used by teachers and educators to create interactive lesson content, quizzes, digital books, and other educational materials (e.g., Canva, Kahoot).

Artificial Intelligence and Learning Analytics: AI-based systems used to track students' progress, offer personalized learning experiences, and conduct data analysis. These technologies analyze students' strengths and weaknesses.

Virtual Reality (VR) and Augmented Reality (AR): Technologies used to make the learning experience more immersive. They are particularly common in fields such as education, medicine, engineering, art, and design.

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