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## Technology In Education

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### ABSTRACT:

Technology has transformed the education sector, enhancing accessibility, interactivity, and learning outcomes. From smart classrooms to AI-driven educational tools, digital transformation offers both opportunities and challenges. This paper explores how technology influences student engagement, teacher effectiveness, academic performance, and digital equity. Emphasis is laid on online learning, the integration of AI, mobile learning, and the digital divide. The study aims to provide insights into the dual-sided impact of technology—its benefits in fostering personalized learning and its potential to widen socio-economic gaps.

**Keywords:** Educational Technology, Online Learning, AI in Education, Digital Divide, E-learning, Student Engagement.

### INTRODUCTION

Education is no longer confined to chalkboards and textbooks. The 21st century has witnessed a massive shift from traditional teaching to technology-aided learning. From e-books and learning management systems to virtual reality and artificial intelligence, technology has revolutionized the way knowledge is imparted and consumed. According to UNESCO (2020), over 1.6 billion learners were affected by school closures during the COVID-19 pandemic, leading to an accelerated adoption of digital platforms for learning.

This paper investigates the impact of educational technology on key elements such as learner engagement, academic outcomes, teacher-student interaction, and inclusivity. While it opens doors to endless resources, it also poses concerns related to screen fatigue, data privacy, and unequal access to digital tools.

### METHODOLOGY

#### *Objectives*

- To understand how technology influences student academic performance.
- To assess the effect of online learning on student engagement.
- To identify the challenges posed by digital learning in terms of access and equity.

#### *Research Design*

This is a cross-sectional study using correlational research methodology. The aim is to explore the relationship between student performance and technological intervention over a single academic semester.

#### *Participants*

The study involved 100 students aged 18–24 from various BBA and BCA programs across institutions in the Delhi NCR region. Participants were selected through convenience and snowball sampling techniques.

#### *Procedure*

Data was collected using a structured online questionnaire shared via email and WhatsApp. Students were informed about the purpose of the study and gave consent before participating. The survey included demographic data, questions on device usage, platform preference (Zoom, Google Meet, MS Teams), and perceived effectiveness of online tools.

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## RESULTS AND DISCUSSION

### *Demographics*

- 100 total participants
- 55% male, 45% female
- Age range: 18–24 years
- 90% reported using smartphones as their primary learning device

### **Technology Usage and Academic Performance**

- 72% agreed that technology made learning more flexible
- 68% reported improved grades due to access to online materials
- 25% mentioned feeling isolated or disengaged in virtual classrooms
- 60% found it easier to revise with recorded lectures

### *Student Engagement*

Although many students appreciated the flexibility of tech-based learning, about 35% indicated a decline in motivation over time. Screen fatigue and lack of face-to-face interaction were among the top concerns.

### *Challenges Identified*

- 40% of participants lacked stable internet connectivity
- 30% shared digital devices with family members, reducing effective study time
- 20% had difficulty in understanding complex subjects without in-person guidance

These results reflect both the advantages and limitations of using technology in education. While tools such as LMSs (Moodle, Blackboard), video conferencing apps, and AI tutors have enhanced academic delivery, they also necessitate policies to bridge the digital divide.

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## CONCLUSION

Technology has significantly influenced education, offering dynamic, engaging, and accessible learning experiences. However, its implementation must be inclusive and equitable. While urban learners may benefit from rich digital tools, rural and underprivileged students often struggle with limited access.

To harness the full potential of technology in education, institutions and policymakers must focus on digital literacy training, infrastructure development, and adaptive learning models. With a balanced approach, educational technology can become a powerful tool to democratize learning globally.

### **CITATIONS:**

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