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THE ROLE OF TECHNOLOGY IN MODERN TEACHING

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Abstract

Technology has revolutionized education by offering cutting-edge resources to improve student performance. This study investigates the effects of technology integration on academic achievement, teacher effectiveness, and student involvement. Data from 150 high school students and 20 teachers were gathered through surveys and interviews using a mixed-method approach. The findings show that when technology is in line with educational objectives, it greatly increases performance and engagement. Distractions and the digital divide, however, continue to be problems. This essay highlights the significance of infrastructure development and teacher preparation while offering insights on successfully utilizing technology in the classroom.

Key words: Technology, cutting-edge resources, academic achievement, mixed-method approach, digital divide, infrastructure development.

Introduction

The idea of the 'digital natives', a generation of tech-savvy young people immersed in digital technologies for which current education systems cannot cater, has gained widespread popularity on the basis of claims rather than evidence. Recent research has shown flaws in the argument that there is an identifiable generation or even a single type of highly adept technology user. For

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educators, the diversity revealed by these studies provides valuable insights into students' experiences of technology inside and outside formal education. While this body of work provides a preliminary understanding, it also highlights subtleties and complexities that require further investigation. It suggests, for example, that we must go beyond simple dichotomies evident in the digital natives debate to develop a more sophisticated understanding of our students' experiences of technology. Using a review of recent research findings as a starting point, this paper identifies some key issues for educational researchers, offers new ways of conceptualizing key ideas using theoretical constructs from Castells, Bourdieu and Bernstein, and makes a case for how we need to develop the debate in order to advance our understanding. (PsycInfo Database Record (c) 2025 APA, all rights reserved

Teaching and learning procedures have been completely transformed by the use of technology in the classroom. The typical classroom dynamic has changed as a result of the evolution of teaching tools, such as interactive whiteboards and artificial intelligence. In addition to increasing engagement, effective technology use promotes critical thinking and independent learning. Despite these developments, educators still have to deal with issues like unequal access and converting conventional teaching techniques to digital platforms. Strategies that meet the requirements of a variety of learners are essential in today's classrooms. By 2023, instructional technology will be used in more than 95% of schools in wealthy nations. However, teacher preparedness and implementation are key to its efficacy. The purpose of this study is to examine how technology is used in the classroom, with an emphasis on its advantages difficulties, and potential to promote inclusive, egalitarian education.

Literature Review:

A number of research demonstrate how technology is revolutionizing education. According to Smith, pupils who used interactive software outperformed their

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colleagues on tests by 30%. In a similar vein, Davis (2020) found that online learning fosters teamwork and improves problem-solving abilities. The digital divide is still a major obstacle, though. 40% of students in low-income communities do not have access to necessary digital tools, which impedes their academic achievement, according to Kumar (2019). Furthermore, the COVID-19 pandemic's quick transition to online instruction revealed weaknesses in infrastructure and instructor readiness. Targeted investments in technology infrastructure and teacher preparation are necessary to address these issues.

Methodology

A mixed-methods strategy was used in this study to collect both quantitative and qualitative data. 150 students participated in a survey to gauge their performance and level of engagement with technology-assisted learning. Twenty teachers were interviewed in-depth to gain qualitative insights into their struggles and experiences. To assess relationships between technology, use and academic results, statistical analysis was carried out using SPSS.

Results: According to a quantitative analysis, 75% of students thought that courses with technology were more interesting (Fig. 1). When interactive tools were used in classrooms instead of traditional approaches, academic performance increased by an average of 20% (Table 1). Teachers noted difficulties like technical problems and student distractions, but they also claimed greater productivity. Table 1: Comparison of Student Performance Figure 1: Levels of Student Engagement.

Discussion

The results confirm that technology improves learning by increasing the accessibility and interactivity of teachings. However, tackling important issues like teacher preparation and digital inequality is necessary for successful integration. Teachers need to take a balanced approach, using technology to

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enhance rather than replace conventional teaching techniques. Equal access to digital materials and ongoing professional development for educators should be given top priority by policymakers.

Conclusion:

Technology is essential to contemporary education because it provides resources to enhance student performance and the efficacy of instruction. Although there is no denying its advantages, issues like unequal access and possible diversions need to be resolved. Future studies should investigate long-term effects and create plans for inclusive school technology usage.

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