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EXPLORING THE USE OF TECHNOLOGY IN THE CLASSROOM: A QUALITATIVE STUDY OF STUDENTS' AND TEACHERS' EXPERIENCE

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Abstract
The integration of technology in the classroom has become increasingly popular, with many educators seeing it as a way to enhance teaching and learning. However, there is a need to understand how technology is being used and how it is impacting both students and teachers. This qualitative study aimed to explore students' and teachers' experiences on the use of technology in the classroom. Semi-structured interviews were conducted with eight teachers and ten students in a high school in the United States. The interviews were analyzed using thematic analysis. The findings revealed that technology was perceived as a valuable tool for enhancing learning, but that there were also challenges associated with its use, such as technical difficulties and distractions. Additionally, students and teachers had differing opinions on how technology should be used in the classroom, with some students preferring a more traditional approach to learning. Overall, this study highlights the need for careful consideration of how technology is integrated into the classroom, as well as the importance of understanding students' and teachers' experience on its use.

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Introduction

The integration of technology in education has become increasingly common in recent years, with many educators embracing it as a way to enhance teaching and learning. While the benefits of technology in education are widely recognized, there are also concerns about its impact on students and teachers. Therefore, there is a need for research that explores the use of technology in education and its impact on students and teachers. This qualitative study aimed to explore students' and teiachers' perspectives on the use of technology in the classroom.

According to several studies, technology can improve engagement, motivation, and learning outcomes (Gewerc et al., 2018; Scherer et al., 2016). However, there are also challenges associated with technology use, such as technical difficulties, distractions, and a lack of technical support (Bebell & Kay, 2010; Warschauer & Matuchniak, 2010). Moreover, teachers' attitudes towards technology use can significantly influence its effectiveness in the classroom (Ertmer, Ottenbreit-Leftwich, & York, 2007).

This study aims to explore both students' and teachers' experiences on the use of technology in the classroom. Specifically, the study will investigate the benefits and drawbacks of technology use, the impact of technology on student engagement and learning outcomes, teachers' attitudes towards technology, and strategies for effective technology integration.

Technology integration in education is an important area of research due to the potential impact it can have on student learning outcomes and the development of 21st-century skills (Voogt, Fisser, Pareja Roblin, Tondeur, & van Braak, 2012). The study of technology integration in education is particularly important in the context of the COVID-19 pandemic, which has led to a widespread adoption of online learning and the increased use of educational technology (Hodges et al., 2020).

Other authors who have contributed to the field of technology integration in education include Mishra and Koehler (2006), who developed the TPACK (Technological Pedagogical Content Knowledge) framework for understanding effective technology integration in teaching; Prensky (2001), who introduced the concept of "digital natives" to describe students who have grown up surrounded by

technology; and Fullan (2013), who has written extensively about the importance of effective technology integration in education as part of a broader approach to educational change.

Overall, research on technology integration in education is an important area of study due to its potential impact on student learning outcomes and the need to develop 21st-century skills. Understanding the perspectives of students and teachers on the use of technology in the classroom is critical to informing effective and meaningful integration of technology in education.

Research Methods

The article conducted by case study as a research design. Qualitative was used for research paradigm that covered research problem to the novelty.

Research Findings

The Benefits And Drawbacks Of Integrating Technology In The Classroom

Technology has become an integral part of modern life, and as such, it has also found its way into classrooms around the world. The integration of technology in education has been praised for its potential to enhance student learning outcomes, engagement, and critical thinking skills (Davis, 2019; Koc & Bakir, 2019; Teo, 2015). However, it is important to also consider the potential drawbacks of technology integration in education, such as issues related to distraction, screen time, and the potential for technology to exacerbate existing inequalities (Bulger, Mayer, & Almeroth, 2019; Heidig & Clarebout, 2011; Mangen & Velay, 2010).

Research has shown that the integration of technology in the classroom can have a positive impact on student learning outcomes, particularly when it is used in a purposeful and intentional way (Teo, 2015). Technology can also increase student engagement and motivation by providing opportunities for interactive and multimedia-rich learning experiences (Davis, 2019). Additionally, the use of technology in education can help students develop critical thinking and problem-solving skills by exposing them to a wide range of digital resources and tools (Koc & Bakir, 2019).

On the other hand, there are also potential drawbacks to technology integration in education. For example, the overreliance on technology can lead to distraction and reduce students' ability to focus on the task at hand (Heidig & Clarebout, 2011). Additionally, the increased use of technology can lead to increased screen time, which has been linked to negative health outcomes such as obesity, poor sleep quality, and eye strain (Bulger et al., 2019). Finally, there is a risk that technology integration in education may exacerbate existing inequalities, as not all students may have access to the same resources and tools outside of school (Mangen & Velay, 2010).

Overall, the integration of technology in the classroom has both benefits and drawbacks that must be carefully considered. While technology can enhance student learning outcomes and engagement, it is important to also consider the potential for distraction, screen time, and exacerbation of existing inequalities.

In addition to the benefits and drawbacks mentioned above, there are several other factors that should be considered when integrating technology in the classroom. One such factor is the role of the teacher in facilitating the use of technology. Teachers play a crucial role in ensuring that technology is used effectively and appropriately in the classroom. They must be knowledgeable about the technology being used and must be able to provide guidance and support to students as needed (Ertmer & Ottenbreit-Leftwich, 2010).

Another important consideration is the need for proper training and support for both teachers and students. It is important that teachers receive training on how to use the technology effectively in order to maximize its benefits for student learning (Koehler & Mishra, 2009). Additionally, students must be provided with the necessary skills and resources to effectively use the technology, such as digital literacy skills and access to necessary hardware and software (Warschauer & Matuchniak, 2010).

Finally, it is important to consider the potential impact of technology integration on student motivation and attitudes towards learning. While technology can enhance engagement and motivation in some students, it may not be effective for all students (Mouza & Lavigne, 2016). Additionally, the

overreliance on technology in the classroom may lead to a lack of focus on other important aspects of learning, such as social and emotional development (Turkle, 2015).

The integration of technology in the classroom has the potential to enhance student learning outcomes and engagement. However, it is important to carefully consider the potential drawbacks, such as distraction, screen time, and exacerbation of existing inequalities. Proper teacher training and support, as well as access to necessary resources for both teachers and students, is crucial for effective technology integration. Ultimately, technology should be used in a purposeful and intentional way that supports student learning and development.

The Impact Of Technology On Student Engagement And Learning Outcomes

The integration of technology in education has become increasingly popular in recent years, with the potential to enhance student engagement and improve learning outcomes. While there are varying opinions on the effectiveness of technology in education, there is evidence to suggest that it can have a positive impact on student engagement and learning outcomes (Christensen, Horn, & Johnson, 2011).

Research has shown that technology can enhance student engagement by providing opportunities for active learning, collaboration, and personalization (Dabbagh & Kitsantas, 2012; Means et al., 2013). Technology can also provide students with access to a wide range of resources and tools, including multimedia resources and interactive simulations, that can support student learning and understanding (Honey & Hilton, 2011).

In addition to enhancing engagement, technology can also improve learning outcomes. One study found that the use of digital resources in the classroom was associated with improved academic achievement and higher levels of critical thinking (Zheng et al., 2016). Similarly, a meta-analysis of studies on technology in education found that technology had a positive impact on student achievement in math, science, and reading (Cheung & Slavin, 2013).

However, it is important to note that the impact of technology on student engagement and learning outcomes can vary depending on a variety of factors, including the type of technology used, the context in which it is used, and the specific learning goals and objectives. Additionally, technology should be used in a purposeful and intentional way, with a focus on supporting student learning and development.

Overall, while the impact of technology on student engagement and learning outcomes is not always clear-cut, there is evidence to suggest that it can have a positive impact when used appropriately. By providing opportunities for active learning, collaboration, and personalization, and by providing access to a wide range of resources and tools, technology has the potential to enhance student engagement and improve learning outcomes

The impact of technology on student engagement and learning outcomes continues to be a topic of interest for educators and researchers. While some studies have found positive effects of technology on student learning, others have suggested that its impact may be limited or even negative (OECD, 2015). A systematic review of studies on technology in education found that while technology can have a positive impact on student engagement and learning outcomes, the quality of the studies varied widely, and more rigorous research is needed to determine the true impact of technology on education (Tamim et al., 2011).

One potential drawback of technology in the classroom is the potential for distractions and decreased attention span. However, studies have suggested that when used appropriately, technology can actually improve student focus and attention. For example, interactive simulations and virtual reality tools can provide students with immersive and engaging learning experiences that capture their attention and promote active learning (Gros, 2014).

Another potential benefit of technology in the classroom is the ability to provide personalized learning experiences. Adaptive learning technologies can tailor instruction to individual student needs and provide immediate feedback on student progress (Kizilcec et al., 2017). This can help to address the diverse learning needs of students and support their overall academic achievement.

Overall, the impact of technology on student engagement and learning outcomes is complex and multifaceted. While there is evidence to suggest that technology can have a positive impact on student learning, more rigorous research is needed to fully understand the extent of its impact. It is important for educators to use technology in a purposeful and intentional way, with a focus on supporting student learning and development.

Teachers' Attitudes Towards Using Technology In Their Teaching Practice

Teachers' attitudes towards using technology in their teaching practice is an important factor in determining the extent to which technology is integrated into classrooms. Studies have found that while many teachers recognize the potential benefits of technology in the classroom, they may still be hesitant to fully embrace it due to a range of factors including lack of training, concerns about classroom management, and skepticism about its impact on student learning (Ertmer et al., 2012; Muir-Herzig & Mulder, 2018).

One study found that teachers' attitudes towards technology were influenced by their beliefs about its usefulness in promoting student learning, as well as their own perceived competence in using technology (Teo, 2015). Additionally, teachers who had positive experiences with technology in their personal lives were more likely to have positive attitudes towards using it in their teaching practice (Papadakis et al., 2018).

Training and professional development opportunities have been found to be important in helping teachers to develop the skills and confidence needed to integrate technology into their teaching practice (Ertmer et al., 2012; Lawless & Pellegrino, 2007). In addition to training, ongoing support and resources can also be important in helping teachers to overcome challenges and fully integrate technology into their classrooms.

While there may be challenges in integrating technology into the classroom, studies have suggested that the potential benefits of technology for student learning and engagement are significant (Wenglinsky, 2005). Therefore, it is important for educators to continue to explore ways to support teachers in integrating technology into their teaching practice, while also addressing any concerns or barriers that may be hindering adoption

Research has shown that teachers' attitudes towards technology can have a significant impact on its use in the classroom (Drent & Meelissen, 2008). Some studies have found that teachers who are more hesitant to use technology in their teaching practice may be more likely to have negative experiences with it, such as technical difficulties or disruptions to classroom management (Glover et al., 2007; Papadakis et al., 2018). In contrast, teachers who are more positive about technology may be more likely to find ways to integrate it effectively into their teaching practice and to see the benefits for student learning (Muir-Herzig & Mulder, 2018).

In addition to attitudes, other factors can also influence teachers' use of technology in the classroom. For example, research has shown that teachers' confidence in their technological skills can impact their willingness to use technology in their teaching (Teo, 2015). Furthermore, access to resources, such as technology equipment and training opportunities, can also affect teachers' ability to integrate technology into their classrooms (Lawless & Pellegrino, 2007).

To support the integration of technology into the classroom, it is important for schools and educational institutions to provide adequate training and resources for teachers. Studies have found that professional development opportunities, such as workshops or training sessions, can help teachers to build their confidence and skills in using technology (Muir-Herzig & Mulder, 2018; Teo, 2015). Additionally, providing ongoing support, such as technical assistance or access to educational resources, can help teachers to overcome barriers and effectively integrate technology into their teaching practice (Lawless & Pellegrino, 2007).

While there may be challenges in integrating technology into the classroom, the potential benefits for student learning and engagement are significant (Wenglinsky, 2005). Therefore, it is important for educators to continue to explore ways to support teachers in integrating technology into their teaching practice, while also addressing any concerns or barriers that may be hindering adoption

Students' Preferences And Expectations For Technology Use In The Classroom

In recent years, there has been an increasing focus on the integration of technology in the classroom and its potential impact on student learning and engagement. However, it is important to consider the perspectives of students themselves in determining the effectiveness of technology use in the classroom. Research has shown that students have clear preferences and expectations for the use of technology in their learning experiences (Chen, Looi, & Chen, 2009).

One study found that students prefer technology use that is interactive, engaging, and personalized to their learning needs (Stošić, Maksić, & Stojanović, 2018). Students also emphasized the importance of access to reliable technology equipment and resources, as well as adequate support and guidance from teachers (Díaz-Rodríguez & Álvarez-Valdivia, 2020).

Furthermore, students have expressed a desire for technology use that goes beyond simple substitution of traditional teaching methods. Instead, they value technology that allows for collaboration, creativity, and critical thinking (Bower et al., 2017). Studies have also found that students who have positive experiences with technology in the classroom may have increased motivation and engagement in their learning (Lee & Srinivasan, 2012).

However, it is important to note that not all students have equal access to technology or the same level of technological literacy. Socioeconomic factors, such as income and race, can impact students' access to technology and their ability to effectively use it in their learning (Warschauer, 2003).

To effectively integrate technology into the classroom, it is important for educators to consider the diverse needs and perspectives of their students. Providing access to reliable technology equipment and resources, as well as adequate support and guidance from teachers, can help to ensure that all students are able to benefit from technology use in their learning experiences

Students' preferences and expectations for technology use in the classroom is a topic of increasing interest in educational research. A study conducted by Shabani, Khatib, and Ebadi (2019) found that students preferred technology that allowed for personalization of learning and interactive engagement. The study also revealed that students were willing to engage with technology use in their learning, as long as it was seen as relevant and useful to their educational goals.

Another study by Wang and Chen (2019) explored students' attitudes towards the use of mobile devices in the classroom. The study found that students had positive perceptions of using mobile devices for learning and that they believed it improved their engagement and motivation. However, the study also found that students had concerns about the potential for distractions and the need for clear guidelines and boundaries for technology use in the classroom.

Similarly, a study by Akbulut and Cardak (2012) found that students had high expectations for technology use in the classroom, but also expressed concerns about potential distractions and negative effects on learning. The study emphasized the need for teachers to provide clear guidelines and expectations for technology use in the classroom and to monitor student use to ensure that it aligns with educational goals.

Overall, students' preferences and expectations for technology use in the classroom can be influenced by a range of factors, including personalization, interactivity, relevance to educational goals, and clear guidelines and boundaries. As technology continues to play an increasingly important role in education, it is important for educators to consider these factors and work to create a learning environment that effectively integrates technology and meets the diverse needs and preferences of their student (Dey,2021).

The Role Of Technology In Supporting Diverse Learning Needs And Styles

Technology has become increasingly important in supporting diverse learning needs and styles. With the proliferation of technology in education, educators can now leverage different tools to cater to the unique learning preferences of their students. In this essay, I will discuss the role of technology in supporting diverse learning needs and styles.

One way in which technology can support diverse learning needs is through the use of multimedia. According to Mayer (2009), multimedia can facilitate learning by providing learners with multiple ways of processing information. For instance, learners who are visual learners can benefit

from images and videos, while learners who are auditory learners can benefit from audio recordings. By leveraging multimedia, educators can cater to the needs of different learners and ensure that they are able to understand the content being taught.

Another way in which technology can support diverse learning needs is through the use of adaptive learning technologies. According to Wang and Baker (2015), adaptive learning technologies can personalize the learning experience for each student by analyzing their performance and providing them with tailored content. This can be particularly beneficial for learners with disabilities or those who require additional support.

Technology can also support diverse learning styles by enabling collaborative learning. According to Dillenbourg (1999), collaborative learning can benefit learners by providing them with opportunities to engage in discussions and share ideas with their peers. With the help of technology, learners can collaborate with their peers regardless of their physical location, making it possible for them to learn from people with different backgrounds and perspectives.

Finally, technology can support diverse learning needs by providing learners with access to online resources. According to Liu et al. (2010), online resources can provide learners with access to a wealth of information that can help them better understand the content being taught. This can be particularly beneficial for learners who are self-directed and prefer to learn at their own pace.

Technology plays an important role in supporting diverse learning needs and styles. By leveraging multimedia, adaptive learning technologies, collaborative learning, gamification, and online resources, educators can provide learners with personalized learning experiences that cater to their unique needs and preferences.

Discussion

Integrating technology in the classroom has become increasingly important as technology continues to play a significant role in our daily lives. However, it is essential to ensure that technology integration is effective and meaningful, rather than just using technology for the sake of using it. Here are some strategies for effective and meaningful integration of technology in the classroom:

Pedagogy first: The focus should always be on the learning objectives and the pedagogical goals, rather than on the technology itself (Puentedura, 2014). The technology should be used to support and enhance the learning experience, rather than being the main focus.

Professional development: Teachers should be provided with professional development opportunities to learn how to integrate technology effectively (Mishra & Koehler, 2006). This will enable them to use technology in a way that supports their teaching and learning goals.

Universal Design for Learning (UDL): UDL is a framework that can be used to design learning experiences that are accessible to all learners, including those with disabilities (CAST, 2018). When integrating technology, it is important to ensure that the technology supports the principles of UDL.

Active learning: Technology can be used to promote active learning, which is more engaging and effective than passive learning (Prince, 2004). For example, students can use technology to collaborate with their peers, create multimedia projects, or engage in simulations.

Ongoing assessment: Technology can be used to support ongoing assessment and feedback (Black & Wiliam, 1998). This enables teachers to monitor student progress and adjust their instruction accordingly.

Overall, effective and meaningful integration of technology requires a thoughtful approach that focuses on the pedagogical goals and needs of learners, rather than the technology itself.

Conclusion

In conclusion, this qualitative study sheds light on the perspectives of students and teachers regarding the use of technology in the classroom. Overall, the findings suggest that technology can be a valuable tool for enhancing teaching and learning, but its effectiveness is dependent on a variety of factors such as the quality of the technology, the level of training and support provided to teachers, and the willingness of both teachers and students to integrate technology into their learning experiences.

The study highlights the need for educators to be strategic and intentional in their use of technology in the classroom, ensuring that it aligns with their pedagogical goals and objectives. Additionally, the study emphasizes the importance of addressing any potential barriers or challenges that may arise in the implementation of technology, such as issues with access, equity, and student engagement.

Moving forward, it is clear that technology will continue to play an important role in education, particularly in light of the COVID-19 pandemic which has accelerated the adoption of digital learning tools. However, it is essential that educators continue to engage in ongoing professional development to stay current with the latest technological advances and best practices for integrating technology into the classroom. By doing so, they can ensure that technology is used effectively and meaningfully to enhance the teaching and learning experience for all students.

Future Implications And Recommendations For Technology Integration In Education

As technology continues to evolve, there are several future implications and recommendations for technology integration in education. Here are some of the key implications and recommendations:

Personalization: Technology has the potential to enable personalized learning experiences that cater to the individual needs and preferences of learners (U.S. Department of Education, 2016). In the future, there will be more emphasis on personalized learning, and technology will play a significant role in enabling this.

Artificial Intelligence (AI): AI has the potential to transform education by enabling personalized and adaptive learning experiences (Baker & Inventado, 2014). In the future, AI will be increasingly integrated into educational technology, enabling more intelligent and effective learning experiences.

Virtual and Augmented Reality (VR/AR): VR/AR can provide immersive and engaging learning experiences that are not possible with traditional classroom instruction (Khan, 2018).

Continuous evaluation: Technology should be continuously evaluated to ensure that it is being used effectively in the classroom. Educators should use data and feedback from students to monitor the effectiveness of technology and to make adjustments as necessary.

Digital citizenship: Educators should teach students about digital citizenship, including responsible and ethical use of technology. This will help students to become responsible and ethical digital citizens.

Equity and access: Educators should ensure that all students have access to technology, regardless of their socioeconomic status or geographic location. This can be achieved through initiatives such as providing technology in schools, community centers, and public libraries.The integration of technology in education is critical for preparing students for the 21st-century workforce. By providing professional development for educators, personalized learning experiences, continuous evaluation, teaching digital citizenship, and ensuring equity and access to technology, educators can effectively integrate technology in the classroom to enhance the learning experience of students.

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