Research, Society and Development, v. 13, n. 8, e2113846519, 2024
(CC BY 4.0) | ISSN 2525-3409 | DOI: http://dx.doi.org/10.33448/rsd-v13i8.46519

The use of new technologies in a provincial primary school in Greece: A case study

O uso de novas tecnologias em uma escola primária provincial na Grécia: Um estudo de caso

El uso de las nuevas tecnologías en una escuela primaria provincial de Grecia: Un estudio de caso

Received: 07/24/2024 | Revised: 08/01/2024 | Accepted: 08/02/2024 | Published: 08/07/2024

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Abstract
The introduction of Information and Communication Technologies (ICT) in the educational process is a necessary step for improving the quality of education, as it keeps pace with the rapid pace of technological progress. This study aims to explore primary school teachers' views on the usefulness and challenges they face in integrating ICT into their teaching. For the study, qualitative research was conducted through semi-structured interviews with six primary school teachers working in a 6/seat provincial primary school who use ICT in the educational process. The interviews were analysed using the thematic analysis method. The findings of the thematic analysis revealed four main themes: 1) the usefulness of ICT, 2) the types of ICT used, 3) the difficulties teachers face in using ICT, and 4) strategies for managing these difficulties. In particular, ICT improves the quality of the educational process, enhances student participation and interest, and improves educational outcomes for students with special educational needs, such as learning difficulties. The types of ICT preferred are computers, projectors, the Internet, educational videos and software games. The main difficulties identified include a lack of logistical infrastructure, limited teacher time based on the curriculum and insufficient teacher training. Strategies to manage these difficulties include initiatives to acquire equipment through Christmas bazaars, teacher adaptability and the need to attend training programmes. Suggestions for future research include expanding the sample and exploring the views of students and parents.
Keywords: Teaching; Teaching tech; ICT; Primary school; Province; Greece.

Resumo
A introdução das Tecnologias de Informação e Comunicação (TIC) no processo educacional é uma medida necessária para melhorar a qualidade da educação, pois acompanha o ritmo acelerado do progresso tecnológico. Este estudo tem como objetivo explorar as opiniões dos professores do ensino fundamental sobre a utilidade e os desafios que enfrentam ao integrar as TIC em seu ensino. Para o estudo, foi realizada uma pesquisa qualitativa por meio de entrevistas semiestruturadas com seis professores do ensino fundamental que trabalham em uma escola primária provincial de 6 lugares e que usam as TIC no processo educacional. As entrevistas foram analisadas usando o método de análise temática. Os resultados da análise temática revelaram quatro temas principais: 1) a utilidade das TIC, 2) os tipos de TIC usadas, 3) as dificuldades que os professores enfrentam ao usar as TIC e 4) as estratégias para gerenciar essas dificuldades. Em particular, as TIC melhoram a qualidade do processo educacional, aumentam a participação e o interesse dos alunos e melhoram os resultados educacionais para alunos com necessidades educacionais especiais, como dificuldades de aprendizado. Os tipos de TIC preferidos são computadores, projetores, a Internet, vídeos educacionais e jogos de software. As principais dificuldades identificadas incluem a falta de infraestrutura logística, o tempo limitado dos professores com base no currículo e o treinamento insuficiente dos professores. As estratégias para gerenciar essas dificuldades incluem iniciativas para adquirir equipamentos por meio de bazares de Natal, adaptabilidade dos professores e a necessidade de participar de programas de treinamento. As sugestões para pesquisas futuras incluem a expansão da amostra e a exploração das opiniões dos alunos e dos pais.
Palavras-chave: Ensino; Tecnologia de ensino; TIC; Escola primária; Província; Grécia.

Resumen
La introducción de las Tecnologías de la Información y la Comunicación (TIC) en el proceso educativo es un paso necesario para mejorar la calidad de la enseñanza, ya que sigue el rápido ritmo del progreso tecnológico. Este estudio pretende explorar la opinión de los profesores de primaria sobre la utilidad y los retos a los que se enfrentan a la hora de integrar las TIC en su labor docente. Para el estudio, se llevó a cabo una investigación cualitativa mediante entrevistas semiestructuradas a seis profesores de primaria que trabajan en una escuela primaria provincial de 6 plazas y que utilizan las TIC en el proceso educativo. Las entrevistas se analizaron mediante el método de análisis temático. Los resultados del análisis temático revelaron cuatro temas principales: 1) la utilidad de las TIC, 2) los tipos de TIC utilizados, 3) las dificultades a las que se enfrentan los profesores al utilizar las TIC y 4) las estrategias para gestionar estas dificultades.

En particular, las TIC mejoran la calidad del proceso educativo, aumentan la participación y el interés de los alumnos y mejoran los resultados educativos de los alumnos con necesidades educativas especiales, como dificultades de aprendizaje. Los tipos de TIC preferidos son los ordenadores, los proyectores, Internet, los vídeos educativos y los juegos informáticos. Las principales dificultades identificadas son la falta de infraestructuras logísticas, el tiempo limitado de los profesores en función del plan de estudios y la insuficiente formación del profesorado. Las estrategias para gestionar estas dificultades incluyen iniciativas para adquirir equipos a través de bazares navideños, la adaptabilidad de los profesores y la necesidad de asistir a programas de formación. Entre las sugerencias para futuras investigaciones figuran la ampliación de la muestra y la exploración de los puntos de vista de alumnos y padres.
Palabras clave: Enseñanza; Tecnología de la enseñanza; TIC; Escuela primaria; Provincia; Grecia.

1. Introduction

Like other technologies, educational digital interventions are rapidly entering the school environment (Alam & Mohanty, 2023; Dutt et al., 2022; Hubber et al., 2016). The development of digital technology has opened up many learning options in the field of education (Jdaitawi, 2019, 2020a, 2020b). The traditional teacher-centred approach, where knowledge is mainly transmitted from teachers to students, has given way to a student-centred model, where students are actively involved in learning (Madeira et al., 2015). The educational landscape is undergoing countless transformations. These new technologies include various technological systems, including devices and software applications, that enable the creation, storage, communication and exchange of information (Gàllucci et al., 2021).

The diverse range of technologies currently used in education meet the different needs of users. They can be categorised as low-tech, medium-tech and high-tech based on usability, deployment and practicality factors. This spectrum includes everything from traditional writing tools, such as custom pencils, to artificial intelligence applications (Garzón, 2021; Hafeez, 2021). The literature consistently supports the positive impact of ICT in the educational process, particularly in enhancing the quality of education, student engagement and interest (Al-Rahmi et al., 2020; Iskrenovic-Momcilovic & Momcilovic, 2022).

Creating an appropriate learning environment and fostering critical thinking and problem-solving skills are key priorities reflected in the use of the internet and software games (Engelbrecht et al., 2020). The Internet has emerged as a widely used educational tool, with e-learning playing a pivotal role in enhancing students' knowledge, understanding and skills (Asteriadis et al., 2009). E-learning, which provides access to educational materials via the Internet, not only promotes student engagement with course content, instructors and peers, but also offers support throughout the learning process to facilitate knowledge acquisition and personal development (Ally, 2004). One of the significant advantages of e-learning is its flexibility, allowing students to access the learning environment at any time and from any location.

This flexibility has proven particularly beneficial for people with special educational needs, such as learning disabilities, as it empowers them by offering assessment, training and support (Benmarrakchi et al., 2017). The use of these technologies in special education is steadily gaining momentum (Benmarrakchi et al., 2017; Cheung & Slavin, 2013; Dogan & Delialioğlu, 2020; Holz et al., 2018; Iskrenovic-Momcilovic & Momcilovic, 2022; Manero et al., 2015). Traditional approaches typically involve pen and paper, often leading to indifference among children (Peterson & Pennington, 2015). New technologies are a powerful incentive to move away from outdated teaching methods that rely heavily on repetition and memorisation and towards more interactive, practical and engaging educational models (León et al., 2017). According to the study conducted by Cheung and Slavin (2013), the use of new technologies has the potential to address and prevent reading difficulties, a significant benefit of integrating technology into the educational system. This integration promotes a sense of motivation in students, allowing them to explore and discover new concepts while practising their acquired skills and knowledge enjoyably. One of the main advantages of integrating new technologies in the classroom is the ability to provide personalised attention to the educational needs of each student (Manero et al., 2015).

By embracing innovation in the technological field and using different methodological strategies, the widespread use of educational applications can be encouraged. This approach facilitates dynamic learning activities, the acquisition of digital

skills, critical thinking and diverse educational materials (Decker & Lawley, 2013; Gürsan et al., 2023). Recent research conducted by Dogan and Delialioğlu (2020) revealed significant improvements in reading, writing and mathematics skills among children with learning disabilities who used technological tools. Kazakou et al. (2011) emphasise the importance of effective programs and software that require only basic computer skills, have simple graphics and navigation instructions, and are accessible even to younger students.

Recent studies have shown that computer games can serve as a convenient tool to enhance reading and spelling skills. These digital game-based interventions have been shown to be highly engaging and effective in improving performance (Gaggi et al., 2017). Moreover, they have the potential to re-energise motivation in individuals with special educational needs who may otherwise be resistant to traditional methods, offering a ray of hope and encouragement. Whether used under supervision or independently, computer games offer an exciting approach to educational intervention (Holz et al., 2018).

However, integrating ICT into teaching has proven to be a real challenge for teachers, as indicated by several studies. Habibu (2012) highlights that the lack of the necessary infrastructure, such as computers, internet access and technical support, is a significant barrier. In addition, Chisango et al. (2020) highlight the need for more resources and the lack of impact of training on teachers' skills and confidence in using ICT, especially in rural schools. Slvar et al. (2023) and Mirzajani, Mahmud and Luan (2015) further highlight the limitations of limited time and inadequate teacher training. These collective findings underscore the importance of overall support in infrastructure, training and time management for the effective use of ICT in education, making the audience more aware and informed (Esfijani & Zamani, 2020). Based on the literature review, exploring the challenges faced by teachers, a vital element of the educational process, would provide valuable insights that could improve educational practices. Also, understanding how teachers use new technologies is crucial for education policymakers, school principals and teacher training programmes.

The purpose of this study was to explore the views of primary school teachers on the usefulness and challenges faced by teachers when integrating ICT into their educational process. The research questions that arise are:

- How do teachers use new technologies in primary schools?
- What difficulties do teachers encounter when using new technologies in their teaching?

2. Methodology

This approach is rooted in hermeneutic epistemology, which recognises that objective truth is non-existent and instead embraces a subjective truth shaped by personal experiences (Bryman, 2017). Consequently, qualitative research is deemed appropriate to deepen the perceptions and experiences of primary school teachers regarding the usefulness and challenges teachers face when integrating ICTs into the educational process. It is important to note that qualitative methodology, as in this case, is used when the research context is undefined and the researcher is seeking unpredictable information. Semi-structured interviews allow participants to openly express their views on the topic under consideration (Isari & Pourkos, 2015; Ludke & André, 2013; Pereira et al., 2018).

The method chosen for data collection was the semi-structured interview. This particular type of interview, known for its flexibility, combines elements of both open and closed questions. The interviewer prepares a set of predetermined questions for the participant but also allows the participant to elaborate on their ideas and opinions. This adaptability enables the interviewees to express themselves freely and delve deeper into their thoughts, reassuring the audience about the depth of the research. The semi-structured interview is a valuable opportunity for the researcher to explore the respondent's perspectives. This approach facilitates in-depth qualitative data collection, allowing the interviewees to expand on their responses and provide detailed explanations of their experiences.

In contrast, structured interviews are based on predetermined questions that require specific answers, thus limiting the interviewees. This limitation can prevent a comprehensive understanding of the interviewees' views (Willig, 2014). It is important to note that the interview is specifically tailored to answer the two research questions mentioned previously.

Six primary school teachers working in a 6/classroom provincial primary school using ICT in their learning instruction were selected for the qualitative research. The convenience sampling method was also used, following the approach described by Creswell (2013). This method involves selecting participants based on their accessibility and convenience to the researcher. It is important to note that convenience sampling only ensures a representative sample from some populations; therefore, generalisations of the findings cannot be made. However, it should be reiterated that the aim of qualitative research, as stated earlier, is not to achieve generalisations (Isari & Pourkos, 2015). Respondents are shown as T1, T2, T3, T4, T5 and T6 to facilitate the presentation of the analysis results.

To ensure the reliability of the survey findings, a secondary analysis was conducted to examine the alignment between the participants' responses and the researcher's interpretations of the interviews. This step was taken to identify the potential influence of the researcher's perspective on understanding the participants' responses (Bryman, 2017; Willig, 2014). The researcher recorded and transcribed the interviews for analysis to facilitate a more focused interaction. This method eliminated the need for note-taking and enabled the researcher to participate fully in the interview process. The researcher's perspective was acknowledged and managed through a process of reflexivity, where the researcher continuously reflected on their own biases and assumptions to ensure the objectivity of the analysis.

The findings were analysed using thematic analysis, a method well-suited for identifying, analysing, and reporting patterns (themes) within data (Braun & Clarke, 2006). The process, which involves several stages, is thorough and meticulous:

1. Familiarisation with the data: This stage includes transcribing interviews, reading through the data multiple times, and noting initial ideas. It ensures that the researcher becomes deeply acquainted with the data.
2. Generating initial codes: This involves coding exciting data features systematically across the entire data set, collating data relevant to each code.
3. Searching for themes: This stage entails collating codes into potential themes and gathering all data relevant to each potential theme.
4. Reviewing themes: This involves checking if the themes work about the coded extracts and the entire data set, generating a thematic 'map' of the analysis.
5. Defining and naming themes: This stage requires ongoing analysis to refine the specifics of each theme and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report: The final opportunity for analysis involves the selection of vivid, compelling extract examples, the final analysis of selected extracts, relating the analysis to the research question and literature, and producing a scholarly report of the analysis.

The thoroughness of this process instils confidence in the research findings. Finally, the analysis's findings are documented for future reference.

According to the guidelines set out by the BPS (2014), ethical considerations regarding the psychological well-being of the participants and the nature of the research were strictly adhered to, and their anonymity was ensured. Participants were fully informed of the purpose of the research and were free to participate or withdraw without revealing their identity. Their written consent was obtained before they participated in the research. To ensure confidentiality, participants were informed that if they chose to withdraw, the researcher would delete their data immediately. In addition, participants were given two weeks after data collection to exercise their right to withdraw. This reiteration of ethical considerations underscores the integrity and respect with

which the research was conducted, ensuring the audience's trust in the process and their reassurance about the integrity of the research.

3. Results

Regarding the usefulness of ICT in the educational process, teachers emphasised that ICT improves the quality of the educational process, enhances student participation and interest, and works beneficially in enhancing the educational outcomes of children with special educational needs, such as learning difficulties. Regarding the types of ICT used in the educational process, teachers stated that they use computers and projectors, the internet, educational videos, and various software games.

Table 1 presents the thematic analysis conducted in response to the 1st research question 1: *How do teachers use new technologies in primary schools?*

Table 1 - Results to 1st research question: *How do teachers use new technologies in primary school?*

Topics	Codes-Quotes
1.ICT utility	**Improving course quality (2,3)**
	"... Since they are a useful tool for all teachers, regardless of age, which help to improve our lessons, to gain students' interest and to solve children's questions that we could not solve with our own words alone" (T-2).
	" I show these images on the projector, and the lesson becomes more accessible, and the children gain a complete view of the history of our country. In other words, we are moving away from that old model where the teacher spoke alone, and most students were staring" (T-3).
	Enhancing student participation/interest (3,4,5,6)
	" Every teacher must keep up with today's data and the rapid development of technology so that he can stimulate the interest of his students and make his lessons more meaningful and interesting" (T-5).
	" Yes, all the students were enthusiastic, and I was very impressed because even children who were often indifferent to the lesson participated" (T-6).
	" The children were excited because they saw images and professions I did not even know existed. So my words and the texts in the book with the help of the projector became vivid images that captured the interest of my students" (T-4).
	" For example, Dimitris, who is a student who does not like school, is bored in class, and wants to go out of the classroom; as soon as I told them that we were going to play a game, he started looking at me with interest and asking "what game is this? How is it played? When are we going to play it? What will we win?" (T-3).
	Support for Special Education (1)
	"Gregory was in fourth grade. He had a severe form of autism and could not follow the flow of the class, nor could he follow the teacher. I had to find ways for Gregory to keep up with the other children. There were days when I would bring my computer into the classroom and teach him the lesson with pictures. Gregory could only concentrate on the computer screen; he ignored external factors that distracted him before, so I was able to teach him a few things" (T-1).
	Computer/Projector (2,3)
	" I use a computer, projector and internet" (T-2).
	" I show these pictures on the projector, the lesson becomes more accessible, and the children gain a more complete view of the history of our country" (T-3).
2. Types of ICT	
	Internet (2.6)
	" I use a computer, projector and internet" (T-2).
	" I found on the internet a very nice video that the students of a school in Athens had made, and I presented it to them" (T-6).
	Videos (3)
	" In Language, we watch educational videos relevant to the lesson. A few days ago, for example, we had a lesson related to old professions that have been lost today" (T-3).
	Software games (2)
	" The children have learned multiplication from last year, but to help them remember it, I found software on the internet called snow-propaganda, which is a prep gam-2).

Source: Author.

The teachers' responses demonstrate a positive reception towards integrating ICT in education, reflecting broader trends in modern educational practices. ICT tools like computers, projectors, and the internet align with the global shift towards digital

learning environments that prioritize engagement, accessibility, and personalized learning. This adoption is particularly significant in supporting students with special educational needs, showcasing ICT's potential to create inclusive learning experiences and instilling hope and optimism in the future of education.

Table 2 presents the results of the 2nd research question: What difficulties do teachers encounter when using new technologies? Teachers underline that the lack of logistical infrastructure (computers/computer rooms/interactive whiteboard/ installation programs/internet problems), limited teacher time based on the curriculum and insufficient teacher training are some of the main difficulties when using ICT. Referring to the management of the difficulties above, they state the teachers' initiatives in acquiring equipment (computer) through Christmas bazaars, the adaptability of teachers during the educational process and the significant need to attend training programmes to enhance teachers' knowledge in the use of ICT during the educational process.

Table 2 - Results to the 2nd research question: *What difficulties do teachers encounter when using new technologies?*

Topics	Codes-Quotes
3.Teachers' difficulties in using ICT	**Lack of logistical infrastructure (computers/computer rooms/interactive whiteboard/installation programmes/internet problem) (1,3,5,6)** *" No, unfortunately, there is no computer room and from what the principal has informed me, no computer specialist has ever come to the school either" (T-1).* *" There is one computer in the whole school, and it is in the principal's office" (T-3).* *" This is a big problem, as I have to bring my laptop from home daily to do my work" (T-3).* *" It also takes me a long time every day to connect my computer and look for internet around the corner (where there is a good signal) so I can connect. I know times are tough, but I think having a computer and internet in every classroom is necessary so that all colleagues can be spared this hassle" (T-5).* *" Despite the setback caused by the stolen interactive whiteboard, the school community has shown remarkable resilience. The board was recovered with the help of the police and installed in a standard room. However, due to the lack of installation programs, it has yet to be implemented " (T-6).*
	Limited time (1) *" There is not enough time for the material to get out by the end of the year. From the classes I have worked in, I realised we must complete several chapters by the end, so each class period is limited. So, imagine how difficult it is to incorporate new technologies in that limited time" (T-1).*
	Insufficient teacher training (6) *" There is another difficulty that I think older colleagues face. They are unfamiliar with new technologies, they have not been involved with computers or the internet, and many do not even know what software is. So you understand they cannot integrate new technologies in their lessons" (T-6).*
	Teachers' initiative (organisation of a Christmas bazaar) (4) *" We held a teachers' association about this particular problem that we were all concerned about, and we decided to have a 'bazaar' before Christmas, and with the money we would make, we would buy computers" (T-4).*
	Adaptability of teachers in the educational process (2) *" Simply because, as I said before, I think it is essential to use these new media in our teaching, what we as teachers have to do to solve this problem is to adapt our curriculum" (T-2).*
4.Managing difficulties	**Attendance of training programmes (5)** *" The state has already started to organise programmes to train teachers on issues related to using new technologies in education for some years. These programmes are the A and B level certification" (T-5).*

Source: Author.

The challenges identified by teachers underscore the urgent need for targeted interventions to facilitate the effective integration of ICT in education. Infrastructural inadequacies, time constraints, and insufficient training are common barriers that require immediate attention. Despite these challenges, the proactive initiatives teachers take and the adaptability they demonstrate are commendable. These efforts, coupled with structured training programmes, can significantly enhance the capacity of teachers to leverage ICT for improved educational outcomes.

4. Discussion and Conclusions

The purpose of this study was to explore the views of primary school teachers on the usefulness and challenges faced by teachers when integrating ICT into their educational process. The sample consisted of six primary school teachers working in a 6-seat provincial primary school who use ICT in their learning instruction.

For research question 1 on the usefulness of ICT in the educational process, it was highlighted that ICT improves the quality of the educational process, enhances students' participation and interest, and also works beneficially in enhancing the educational outcomes of children with special educational needs such as learning disabilities. According to Madeira et al. (2015), a significant change in how learning approaches has occurred. From focusing on the teacher, who was responsible for transmitting knowledge to students, there is a shift to a learner-centred model where learners are actively involved in the learning process. This shift, largely driven by the integration of ICT, should make educators feel that their efforts are making a significant impact on student learning. The literature consistently supports the positive impact of ICT in the educational process, particularly in enhancing the quality of education, student engagement and interest, and promoting critical thinking and problem-solving skills (Al-Rahmi et al., 2020; Iskrenovic-Momcilovic & Momcilovic, 2022). This is particularly beneficial for students with learning disabilities, as ICT can improve their educational outcomes (Benmarrakchi et al., 2017; Cheung & Slavin, 2013; Dogan, & Delialioğlu, 2020; Holz et al., 2018; Iskrenovic-Momcilovic & Momcilovic, 2022; Manero et al., 2015; McQuiggan et al., 2015). The use of ICT also leads to increased knowledge, improved attitudes and the acquisition of new skills among students (Al-Rahmi et al., 2020; Decker & Lawley, 2013). A recent study showed that computer games offer a convenient and engaging method to enhance reading and spelling skills (Gaggi et al., 2017). Interventions using digital games effectively re-energise motivation among typically developing and special education needs individuals reluctant to participate in traditional intervention approaches (Holz et al., 2018).

Regarding the types of ICTs used in the educational process, it is evident from the research findings that there is a preference for computers and projectors, the internet, educational videos, and various software games. The use of ICT by the sample teachers in the educational process aligns with the findings of Hafeez (2021), who emphasized computer-assisted teaching as an everyday use among teachers. The use of the internet, as well as software games, also reflects the emphasis on creating an appropriate learning environment and promoting critical thinking and problem-solving skills (Asteriadis et al., 2009; Benmarrakchi et al., 2017; Engelbrecht et al., 2020).

Regarding the second research question regarding the difficulties teachers face in using ICT in the educational process, the lack of logistical infrastructure (computers/computer rooms/interactive whiteboard/installation programs/internet problems), limited time of teachers based on the curriculum and insufficient training of teachers are highlighted as the main difficulties in using ICT. Several studies have identified teachers' challenges when integrating ICT into their teaching. Habibu (2012) highlights the lack of infrastructure, including computers, internet and technical support, as a significant barrier. The scarcity of resources, especially for rural schools, is also highlighted in Chisango et al. (2020). Slvar et al. (2023) and Mirzajani Mahmud and Luan (2015) further highlight limited time and inadequate teacher training as significant barriers. These findings collectively point to the need for comprehensive support in terms of infrastructure, training and time management to facilitate effective use of ICT in education.

About managing the difficulties above, this study highlights teachers' initiatives in acquiring equipment (computer) through Christmas bazaars, the adaptability of teachers during the educational process and the significant need to attend training programmes to enhance teachers' knowledge in the use of ICT in the educational process. The need for more impact training on teachers' ICT skills and confidence in using ICT is particularly pronounced, especially in rural schools (Chisango et al., 2020). To address these challenges, ongoing professional development and training programmes are vital for teachers to enhance their ICT skills and confidence in using technology in the classroom (Esfijani & Zamani, 2020). This emphasis on continuous learning

and development should make educators feel supported and empowered in their use of ICT.

Although valuable, qualitative research has limitations due to the small sample size and lack of inductive methods (Creswell, 2013). To overcome these limitations and thoroughly examine the effectiveness of ICT in education, experimental quantitative research is recommended. This approach would involve using reliable and valid questionnaires, ensuring a sufficient sample size to achieve sufficient statistical power (Cohen, 1988) to statistically validate the benefits of their use in the learning process (McLeod, 2017).

To further enrich the field of educational technology, future research should consider longitudinal studies that examine the long-term impacts of ICT integration on student outcomes. Investigating the differential effects of various ICT tools, such as virtual reality or artificial intelligence-based applications, could provide deeper insights into their specific benefits and challenges. Additionally, comparative studies between urban and rural schools regarding ICT implementation and its effects would be valuable in understanding contextual differences and informing targeted, strategic interventions. Future studies should also explore the perspectives of students and parents to provide a more holistic view of the ICT integration process. Finally, research focusing on developing and assessing teacher training programs tailored to ICT competencies will be crucial in addressing the current gaps in teacher preparedness and confidence in using technology effectively in the classroom. By addressing these areas, future research can build upon the findings of this study, contributing to a more comprehensive understanding of ICT in education and supporting the continuous improvement of teaching and learning practices.

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