

Incorporating Technology in Classroom Instruction: Challenges and Strategies

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Abstract

This study explores the integration of digital technologies into classroom instruction, focusing on both the transformative benefits and the challenges that educators encounter. With digital tools such as computers, tablets, and educational software becoming more prevalent in educational settings, teachers and institutions are tasked with adopting these resources to enhance student engagement and learning outcomes. However, barriers such as inadequate training, limited access to resources, and technical issues hinder the effective use of these technologies. Through a mixed-methods approach, this research examines the experiences of teachers in Selangor's government and private high schools. Findings reveal that demographic factors, including age, teaching experience, and educational background, significantly influence teachers' perceptions of and comfort with digital tools. The study highlights the need for comprehensive training, institutional support, and equitable access to technology to maximize the benefits of digital integration in education.

Keywords: Technology, Classroom Instruction

Introduction

The introduction of digital technology into the classroom has changed the nature of education, transformed traditional teaching methods and creating new opportunities for learning and participation. Technological change is not just a process, it is a radical change in the way education is given, received and perceived. As we enter the 21st century, the importance of literacy and the use of digital tools in education continues to increase and is becoming an indispensable part of modern education.

Digital technology: It covers many devices and applications, including computers, tablets, whiteboards, educational software, and online resources. These technologies simplify the learning experience and privacy, facilitate access to more information, and encourage collaboration and creativity among students. The potential benefits of integrating digital technology into the classroom are many; these include increasing student engagement,

improving learning and better planning for the digital economy. However, the application of digital technologies in education brings with it difficulties. These include digital equity, the digital divide, the need for teacher training and support, and concerns about screen time and its impact on student well-being. Addressing these issues is critical to maximising the benefits of digital technology and ensuring that all students have the opportunity to succeed in the digital environment.

This study aims to describe the impact of digital technologies on teaching and learning, identify best practices for their implementation, and evaluate the challenges and opportunities they present. Understanding the role of digital technology in the classroom can help educators, policy makers, and stakeholders make informed decisions that will improve educational performance and outcomes.

Background of the Research

Advances in digital technology have transformed many sectors, including education. The integration of technology into the classroom began in the late 20th century with the help of computers and the internet. Over time, the range of digital tools available to teachers has expanded significantly, leading to more hands-on and interactive learning. The background of this research has its origins in the historical development of educational technology.

In the early stages, digital technology in education was limited to computer-assisted primary education and teaching programs. However, with technological advancement and the proliferation of the Internet, the scope of digital resources has expanded to include multimedia displays, online learning platforms, classrooms, and mobile applications. The rise of the digital age has also led to significant changes in the concept of education. The curriculum is constructive and interactive, with an emphasis on active, interactive and networked learning that aligns well with the possibilities of digital technology. These theories support a shift from traditional, teacher-centered instruction to student-centered learning, where students actively participate in their own learning and use system tools to create knowledge, collaborate with peers, and interact with real-world problems.

In addition, the COVID-19 epidemic accelerated the use of technology in education. The sudden shift to remote learning has highlighted the vital role of digital tools in supporting education in times of crisis. This period also highlighted the gap in access to technology and the need for strong infrastructure and support systems. Building on these developments, this study aims to examine current technology in the classroom, its impact on educational delivery, and factors contributing to its integration. By analyzing empirical data and reviewing existing literature, the research aims to provide insight into practical strategies for the use of digital technology to enhance teaching and learning.

Research Objective and Question

Research Objectives

1. To examine the challenges teachers encounter when using digital tools to achieve learning objectives for various subjects.

Research Questions:

1. What are the primary challenges teachers encounter when incorporating digital technologies into classroom instruction

Significance of the Research

This research contributes to the growing field of educational technology by identifying both the advantages and the obstacles associated with digital technology integration in classrooms. As digital tools play a pivotal role in shaping modern educational practices, understanding their impact on teaching and learning is critical. This study's insights are valuable for educators, policymakers, and school administrators, as they provide evidence-based recommendations for enhancing digital literacy, supporting professional development, and addressing resource disparities. By highlighting the specific challenges that educators face, the research underscores the importance of a balanced approach to technology adoption—one that prioritizes both access to tools and the necessary support systems to use them effectively. The findings offer a foundation for future strategies aimed at creating an inclusive, technology-enhanced learning environment that benefits students and educators alike.

Literature Review

The integration of digital technologies into the classroom has become a transformative force in modern education. As technological advancements continue to evolve at a rapid pace, educators and policymakers alike are increasingly focused on understanding how these innovations influence teaching and learning. Digital technologies, encompassing tools such as computers, tablets, interactive whiteboards, and educational software, have the potential to enhance educational experiences and outcomes in a variety of ways.

In recent years, there has been a significant shift from traditional teaching methods to those that incorporate digital tools. This shift reflects a broader trend towards digitalization across various sectors, driven by the need to prepare students for a technology-centric world. The role of digital technologies in education is multifaceted, affecting instructional practices, student engagement, and learning outcomes. As such, it is crucial to explore the existing body of research to gain a comprehensive understanding of how these technologies are utilized in the classroom and their impact on the educational process.

The literature on digital technologies in education highlights both the opportunities and challenges associated with their use. On one hand, digital tools offer new avenues for interactive and personalized learning, enabling educators to cater to diverse learning styles and needs. Beyond the traditional classroom, students can access materials and learning experiences because of technologies like educational applications and online learning platforms. Furthermore, digital technologies can facilitate collaborative learning and communication, fostering a more dynamic and participatory educational environment.

On the other hand, the implementation of digital technologies in the classroom is not without its challenges. Issues such as digital divide, where disparities in access to technology can exacerbate educational inequalities, and concerns about the effective integration of these tools into curriculum, pose significant obstacles.

Furthermore, research and discussion on the effects of digital technology on students' motivation, focus, and general academic performance are still ongoing. The main goal of this literature is to examine the main ideas and conclusions from previous studies on digital devices in the classroom. By examining studies that address the effectiveness, challenges, and implications of digital tools in education, this review seeks to provide a nuanced understanding

of how these technologies shape contemporary educational practices. Through a critical analysis of the literature, this review will identify gaps in current knowledge and offer insights into future directions for research and practice in the field of educational technology

Information and Communication Technology (ICT) into educational instructions can help to enhance teaching and learning experience but there are several obstacles. These difficulties range from a lack of proper training and resources to technical concerns and behavioral obstacles. Understanding these challenges is vital for designing methods to enable teachers in efficiently employing ICTs in their classrooms.

One of the main perceived obstacles into integrating ICT into instructions is the insufficient professional growth and trainings. A lot of teachers complain that they haven't gotten enough training on how to incorporate ICT technologies into their lessons. The swift progression of technology necessitates continuous professional growth, nonetheless, these prospects are sometimes scarce. Teachers who are not properly trained may find the idea of incorporating new technologies into their tried-and-true teaching techniques too daunting.

Secondly, another obstacle teacher's face is limited resource availability. Many schools lack the essential infrastructure, which includes modern software and hardware as well as dependable internet connectivity. Underfunding of schools is a major issue that causes resource availability to differ between rich and less fortunate places. Teachers may find it difficult to successfully utilize technology-based instruction if they do not have fair access to ICT resources.

Thirdly, time restrictions are another major obstacle because of their already hectic schedules, teachers frequently lack the extra time needed for planning and preparation that is necessary to integrate ICTs into their lessons. The need to meet curriculum requirements can make the integration of ICTs appear more like a chore than a helpful improvement. Because they can impart traditional teaching methods more effectively in the time allotted, teachers might prioritize them as a result.

The incorporation of ICTs into education instruction is made more difficult by technical difficulties. Teachers in many schools are left to handle problem-solving on their own due to a lack of dependable technical support. Frequent technical issues, such as device malfunctions or software bugs, can ruin lectures and deter teachers from utilizing technology in the classroom. The possibility of running into these problems without trustworthy assistance might be a major blunder.

Educational institutions can help teachers integrate ICTs into their classroom and eventually improve the learning experience for their students by recognizing and resolving these obstacles. Comprehensive and continuous professional development for teachers is crucial to overcoming these challenges.

Institutional support is essential for encouraging teachers to integrate ICT (Information and Communication Technology) into their teaching practices. Teachers are more likely to adopt ICT when they receive substantial institutional encouragement. A collaborative environment involving teachers, administrators, and technical staff is critical for the successful

implementation of ICT in classrooms. University administrators play a key role in providing leadership that fosters cooperation and emphasizes the importance of incorporating computer technologies into instruction. Conversely, a lack of collaboration can hinder the effective use of ICT in teaching. Working together allows educators to overcome challenges, share experiences, and gain valuable feedback.

Barriers to ICT integration include insufficient access to technology, such as a lack of computers, peripherals, software, and inadequate technical support. Effective technical support is a critical component of a comprehensive school strategy for ICT. The absence of technical support and inadequate school-wide resources, such as malfunctioning computers and outdated hardware, are significant barriers that discourage teachers from using ICT. Government support, through interventions and training programs, can also positively impact ICT integration by enhancing teachers' enthusiasm and attitudes towards ICT, leading to its routine use.

Furthermore, the development and quality assurance of digital learning resources are vital. These resources can include textbooks, subject-specific materials, and curriculum-related content. Policies on the provision of digital learning resources are essential for schools and can be implemented through various actions, such as funding web portals for resource sharing, offering e-learning opportunities, and establishing specific agencies to develop digital resources.

Academic Performance

The growing use of digital technologies in education raises important questions about their impact on teaching methods, learning objectives, and student engagement. While digital technologies have the potential to significantly enhance academic performance, several challenges must be addressed for successful integration. Recent studies have produced varied results regarding the influence of technology on academic achievement.

For instance, Ishaq et al (2020), investigated universities in Pakistan and found that most students had access to ICT tools like laptops and personal computers both at home and in universities. However, facilities for printing and scanning were less available at home but accessible at the university. Students primarily used ICT for completing assignments, participating in classroom activities, and organizing lessons more effectively. Similarly, Basri, Alandejani, and Almadani (2018), examined the effects of ICT adoption on academic performance in Saudi universities.

The literature on technology's influence on academic achievement presents mixed findings. Some studies report positive outcomes, while others indicate negative or neutral effects. For example, Fonseca et al (2014), found that technology use improved student engagement with content and overall academic performance, demonstrating a significant link between technology use, student motivation, and academic success. Cheng, Lin, and She (2015), observed that technology-enhanced classrooms contributed positively to long-term knowledge retention and learning outcomes, with technology users outperforming their peers in engagement and achievement. Gulek and Demirtas (2005), provided robust evidence that technology use enhances educational outcomes, with technology users achieving higher GPAs and test scores compared to non-users. Additionally, Drain, Grier, and Sun (2012), discovered

that the "effective use" of electronic devices can boost academic performance, with students using devices for educational purposes performing better than those using them for non-academic activities.

The role of technology in providing interactive academic tools is crucial. These tools include note-taking apps, discussion forums, access to additional resources, and applications that facilitate interactions between students and instructors. Such tools support engagement and self-directed learning. Students who use technology for academic tasks are more likely to engage in meaningful collaboration with peers. Increased technology use is associated with greater academic engagement and fosters deeper connections among students, educators, and course content. Furthermore, technology supports a collaborative learning community, which can enhance critical thinking and personal growth. Recent studies continue to explore the varied impacts of technology on academic performance, highlighting both the potential benefits and the challenges of integrating digital tools in educational settings.

The use of digital technology in the classroom has been extensively researched, with findings indicating a variety of effects on student involvement. Yusof and Song (2010) take a detailed look at how digital technologies affect students' learning experiences and behavior. Integrating digital tools into the classroom motivates students to properly check their work and verify correctness. This thorough approach is motivated by the interactive and fast feedback capabilities built into many digital tools, which encourage students to constantly evaluate their work against defined standards. As a result, students acquire a habit of self-assessment and reflection, which promotes a better comprehension of the topic.

Furthermore, the use of digital tools in education encourages students to investigate their mistakes and identify the fundamental reasons when they occur. The availability of information and technologies that provide immediate feedback and explanations assists students in dissecting their misunderstandings and learning from them. This cyclical process of making mistakes, receiving feedback, and fixing errors helps kids develop a resilient and growth-oriented attitude. Digital technology may also be used to motivate pupils to work harder in their studies. Interactive platforms and engaging multimedia material captivate students' attention and keep them interested for extended periods of time. The dynamic nature of digital learning environments, including gamified aspects and progress monitoring, gives students a sense of accomplishment and encourages them to devote more time and effort to their studies.

Perseverance in the face of adversity is another key influence of digital integration. The supportive and frequently adaptable nature of digital learning tools encourages students to persevere even when faced with challenging tasks. These technologies can adjust difficulty levels to individual learners, presenting suitable tasks that are neither too easy nor too demanding, promoting ongoing effort and perseverance. Furthermore, the idea of successfully completing a project using digital resources inspires pupils with eagerness and enthusiasm. The concrete progress and visible depiction of their work via digital methods make the learning experience more gratifying and pleasurable. This enthusiasm leads to a good attitude towards learning and project completion.

Furthermore, the collaborative characteristics of many digital tools encourage students to seek help from their classmates and work together. Online forums, collaboration platforms, and communication tools allow students interact with others who can aid or exchange expertise. This collaborative learning environment not only improves students' grasp of the material, but it also fosters important cooperation and communication skills. To summarise, the use of digital tools in the classroom has a significant influence on student engagement and learning behaviours. Digital technologies provide a more dynamic, helpful, and engaging educational experience by fostering rigorous project evaluation, comprehension of mistakes, greater effort, perseverance, anticipation of good results, enthusiasm for learning, and collaborative work. Yusof and Song's (2010), research emphasizes these advantages, demonstrating the power of digital technology to change traditional learning settings and increase student engagement.

The use of digital tools in the classroom has had a substantial influence on both teaching methods and student engagement, according to studies conducted by various researchers. Khatoony and Nezhadmehr (2020), investigate teachers' technology integration, which includes a variety of activities such as presenting information using technology, creating instructional handouts, adapting activities to individual student needs, communicating via email, and posting class information online. This integration is perceived to improve teaching and learning practices, with teachers recognizing its importance in increasing academic achievement, improving interaction, motivating students, simplifying instructional material selection, and shifting teachers' roles to facilitators rather than mere information providers (Inan & Lowther, 2010).

Despite the accepted benefits, there are many barriers to using ICTs into education. Hutchison and Reinking (2010), identified many hurdles, including a lack of time, access to technology, professional development, technical assistance, and enough preparation time. These barriers to successful use of technology include difficulties in grading students' online work, controlling online information, and aligning technology use with subject standards and learning principles. Institutional assistance is essential for overcoming these hurdles. Nachmias et al. (2004) emphasize the necessity of administrative encouragement, training, technical help, financial support, and incentives for professors who use new technology. Such assistance can considerably improve the uptake and successful use of digital technology in educational settings.

Improved academic achievement and student engagement demonstrate the usefulness of incorporating technologies into classroom learning. Liu et al (2020), show that digital technologies facilitate self-directed learning, improve technology abilities, develop effective learning content, and increase satisfaction with learning processes. Yusof and Song (2010), show that technology integration makes students more thorough, persistent, and collaborative, resulting in a stronger engagement with their work and overall learning experience. To summarize, while integrating digital tools in the classroom has enormous benefits for both teaching and learning, its adoption necessitates resolving the hurdles mentioned by educators and assuring strong institutional support. By creating an atmosphere that fosters and enables the use of digital tools, educational institutions may improve the efficacy of technology integration, resulting in higher academic achievement and increased

Research Methodology

Research methodology provides the framework and procedures for systematically investigating and understanding research questions. It involves selecting appropriate methods for data collection, analysis, and interpretation to ensure that the findings are reliable and valid. In the context of exploring the role of digital technologies in the classroom, research methodology will guide the study to uncover insights about how these technologies impact educational outcomes.

This research aims to examine the integration of digital technologies in educational settings, focusing on both government and private high schools within the Selangor region. The study will investigate key characteristics that make digital technology essential in classrooms, its influence on student engagement and motivation, and the challenges faced by students and teachers. By employing a mixed-methods approach, this research will provide a comprehensive understanding of the benefits and limitations of digital tools in education.

Research Method

To address these research questions, the study will use a mixed-methods approach, combining quantitative surveys with qualitative interviews.

- **Quantitative Component:** A survey will be administered to students, teachers, and school administrators in selected government and private high schools. This survey will use structured questionnaires to gather numerical data on the frequency, type, and perceived effectiveness of digital technologies in the classroom. Google Forms will be utilized for ease of distribution and data collection.
- **Qualitative Component:** Semi-structured interviews will be conducted with a subset of survey participants to gain deeper insights into their experiences and perceptions. These interviews will explore themes related to the benefits, challenges, and practical applications of digital technologies in educational settings.

Sampling:

Five schools will be selected as sampling sites, ensuring a mix of institutions with varying levels of technological infrastructure. This approach will help assess how different levels of technology accessibility impact educational outcomes.

- **Selection Criteria:** Schools will be chosen based on their technological capabilities, ranging from well-equipped digital facilities to those with limited resources. This variation will provide a comprehensive view of how technology integration affects teaching and learning.

Data Collection:

- **Surveys:** Google Forms will be used to collect quantitative data from a large number of participants efficiently.

Ethical Considerations

Before commencing the study, informed consent will be obtained from all participants, including students, teachers, and administrators. Confidentiality and privacy will be strictly maintained, and data will be anonymized to protect participants' identities. The study will adhere to ethical guidelines to ensure the responsible conduct of research.

This research design aims to provide a detailed understanding of how digital technologies are used in the classroom, the effects on student engagement and motivation, and the challenges faced by educational stakeholders.

This study gathers data from participants by means of a quantitative research design using a survey approach. Data at a specific moment in time is gathered using a cross-sectional survey methodology, therefore offering a picture of the present difficulties, approaches, and support requirements associated with using digital devices into classroom learning. The research aims at K–12 instructors from several disciplines spread across many campuses within a given school system. To guarantee participation from several grade levels—middle, high school—a stratified random selection technique is adopted.

The data collection process involves the use of a structured online survey that is designed with closed-ended questions, demographic questions, and Likert scales. A reminder email is sent after one week to increase response rates, and the survey is disseminated via email to the selected participants with a two-week window for completion. The survey instrument is prototype tested with a small group of teachers who are not included in the final sample. The feedback from the pilot test is utilized to refine the survey. In order to guarantee reliability, Cronbach's alpha is computed. Quantitative data analysis entails the calculation of descriptive statistics (mean, standard deviation, frequencies) to summarize the survey data and the application of inferential statistics to investigate the relationships and differences between variables such as perceived challenges, subject area, and grade level. Quantitative data analysis is conducted using SPSS software.

The study's dependence on self-reported data may induce bias, which is one of its limitations. Furthermore, the study is conducted within a singular school district, which may restrict the generalizability of the results to other contexts. In conclusion, this research procedure delineates a quantitative survey methodology for the purpose of examining the obstacles and strategies associated with the integration of digital technologies into classroom instruction. The study endeavours to guarantee that the findings are both actionable and robust by employing a structured survey to provide a comprehensive understanding of the issues and potential solutions.

Introduction

This research looks at how teachers' use of technology, how they view digital tools, and how supportive their institutions are of them, with an emphasis on how these aspects affect students' academic achievement. By employing descriptive, normality, reliability, and correlation analysis, the study reveals significant patterns within the dataset. The results provide light on the difficulties and efficacy of integrating technology into teaching.

Descriptive Statistics

Table 1

Descriptive analysis

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
IV_1	100	1.00	5.00	4.1880	.88206	-1.341	.241	1.735	.478
IV_2	100	2.43	5.00	4.3271	.59866	-.654	.241	.076	.478
IV_3	100	1.00	5.00	3.3333	1.04420	-.787	.241	.166	.478
IV_4	100	1.20	5.00	4.1520	.71527	-.895	.241	1.663	.478
DV_1	100	1.83	5.00	4.3433	.65384	-1.095	.241	1.432	.478
DV_2	100	2.43	5.00	4.3229	.64165	-.794	.241	.096	.478
Valid (listwise)	N 100								

According to the descriptive statistics, the distribution of IV_1 is negatively skewed, with a mean of 4.1880 and a standard deviation of 0.88206. The kurtosis is 1.735. The skewness is -1.341. IV_2 has a mean of 4.3271, a skewness of -0.654, a kurtosis of 0.076, and a smaller standard deviation of 0.59866. With a larger standard deviation of 1.04420, skewness of -0.787, and kurtosis of 0.166, IV_3's mean is 3.3333. IV_4 has a mean of 4.1520, a skewness of -0.895, a standard deviation of 0.71527, and a kurtosis of 1.663. The values of DV_1 and DV_2 are as follows: DV_1 has a mean of 4.3433, a standard deviation of 0.65384, a skewness of -1.095, and a kurtosis of 1.432.

Normality Analysis*Tests of Normality*

Table 2

Normality Analysis on IVs and DVs

Kolmogorov-Smirnov ^a				Shapiro-Wilk		
Statistic		df	Sig.	Statistic	df	Sig.
IV_1	.179	100	.000	.841	100	.000
IV_2	.149	100	.000	.903	100	.000
IV_3	.155	100	.000	.920	100	.000
IV_4	.146	100	.000	.903	100	.000
DV_1	.158	100	.000	.865	100	.000
DV_2	.149	100	.000	.883	100	.000

a. Lilliefors Significance Correction

The dependent variables (DV_1 and DV_2) and independent variables (IV_1, IV_2, IV_3, and IV_4) show a broad pattern of nearly normal distributions with different degrees of skewness in the Q-Q plots. A left-skewed distribution is indicated by the data for IV_1, which deviates from the straight line at both the lower and upper ends. This is corroborated by a skewed value of -1.341. Most data points are near to the line, indicating an approximation normal distribution, even though the extreme deviations are visible.

Comparably, IV_2 has a skewness of -0.654, which indicates a modest left skewness, and more closely resembles the normal line with small deviations at the tails. IV_3 shows considerable left skewness with deviations at the bottom and higher ends, corresponding with a skewness value of -0.787, although generally following the normal line. With most data points following the normal line in the intermediate range and slight curvature at the extremes, IV_4 also exhibits significant skewness (skewness of -0.895).

When it comes to the dependent variables, DV_1 and DV_2 both show a strong clustering in the 4 and 5 ranges, with a smaller number of data points at the lower and higher extremes. The distribution is centered with some fluctuation at the ends, as indicated by the concentration of data in DV_1, which falls between 4.0 and 5.9. This suggests that the distribution is not exactly symmetrical. With dense clusters of values in the range of 4.0 to 5.9 and sparse data at the lower end (2's and 3's), DV_2 exhibits a similar pattern, suggesting a strong central tendency with less frequent values at the extremes.

Reliability Analysis

Reliability

Table 3

*Teacher's technology integration***Statistics**

Cronbach's Alpha

	N of Items
.930	5

Table 3 shows that the reliability statistics report a Cronbach's Alpha value of 0.930, indicating moderate internal consistency among variables. The value is above 0.7.

Table 4

*Teacher's perceptions of technology**Reliability Statistics*

Cronbach's Alpha

	N of Items
.869	7

Table 4 shows that the reliability statistics report a Cronbach's Alpha value of 0.869, indicating moderate internal consistency among variables. The value is above 0.7.

Table 5

*Teacher's perceived obstacles to integrating ICTs into instruction**Reliability Statistics*

Cronbach's Alpha

	N of Items
.945	6

Table 4 shows that the reliability statistics report a Cronbach's Alpha value 0.945. This signifies that the items used to test this variable are reliable and consistent because the value is above 0.7.

Table 6

*Level of institutional support instruction**Reliability Statistics*

Cronbach's Alpha	N of Items
.887	5

Table 5 shows the result of Cronbach's Alpha value for level of institutional support instruction which is 0.887. This signifies that the items used to test this variable are reliable and consistent because the value is above 0.7.

Table 7

*Academic performance**Reliability Statistics*

Cronbach's Alpha	N of Items
.913	6

Table 6 shows the result of Cronbach's Alpha value for academic performance which is 0.913. This signifies that the items used to test this variable are reliable and consistent because the value is above 0.7.

Correlation Analysis

Correlations

Table 8

Correlation Analysis

		IV_1	IV_2	IV_3	IV_4	DV_1	DV_2
IV_1	Pearson Correlation	1	.509**	-.037	.408**	.464**	.456**
	Sig. (2-tailed)		.000	.715	.000	.000	.000
	N	100	100	100	100	100	100
IV_2	Pearson Correlation	.509**	1	-.025	.404**	.434**	.534**
	Sig. (2-tailed)	.000		.802	.000	.000	.000
	N	100	100	100	100	100	100
IV_3	Pearson Correlation	-.037	-.025	1	.154	.159	.123
	Sig. (2-tailed)	.715	.802		.127	.114	.221
	N	100	100	100	100	100	100
IV_4	Pearson Correlation	.408**	.404**	.154	1	.785**	.775**
	Sig. (2-tailed)	.000	.000	.127		.000	.000
	N	100	100	100	100	100	100
DV_1	Pearson Correlation	.464**	.434**	.159	.785**	1	.861**
	Sig. (2-tailed)	.000	.000	.114	.000		.000
	N	100	100	100	100	100	100
DV_2	Pearson Correlation	.456**	.534**	.123	.775**	.861**	1
	Sig. (2-tailed)	.000	.000	.221	.000	.000	
	N	100	100	100	100	100	100

** . Correlation is significant at the 0.01 level (2-tailed).

Table 8 above shows the results of the correlation analysis. This analysis was used to show the significant relationship between dependent and independent variables, with all correlations significant at $p < 0.01$. The obtained significance value of 0.000 confirms the statistical significance of these relationships.

Demographic Information

Demographic data was gathered for this study in order to have a deeper understanding of the participant characteristics and how these may affect the use of digital technologies in the classroom. Age, gender, years of teaching experience, and educational background are among the demographic information gathered. Examining this data provides information on the participants' diversity and how their experiences may have influenced how they interacted with technology.

The demographic variables examined in this research—gender, age, experience as a teacher, and educational background—have a big impact on how educators view and utilise digital resources in the classroom. Teachers that are younger, have less experience, and have completed more schooling tend to be more receptive to using technology in the classroom. This shows that in order to ensure that all educators can take advantage of technology improvements, future professional development programs should concentrate on offering support to older and more experienced teachers.

These results are in line with other research showing that instructors with less experience and who are younger are more inclined to use digital tools. The minor gender disparity in confidence levels that has been noticed is consistent with research indicating that women in education are more likely to actively seek out opportunities for professional development connected to technology.

The unequal gender distribution in this study is one of its limitations, which might have had an impact on how broadly applicable the conclusions could be. Furthermore, the participants' age and experience ranges are somewhat limited, with few of them over 50 or having less than a year of teaching experience, which restricts our ability to understand those demographics. In order to investigate if age and gender have an impact on technology use in a wider instructional setting, future research should try to include a more balanced sample. More research may also look into the ways that ongoing professional development catered to particular demographic groups might enhance the use of technology in classrooms. This was our data specification from the survey held:

1. *Gender Distribution*

The majority of participants were female (approximately 65%), with males making up the remaining 35%. This is reflection of the common trends in the teaching profession.

2. *Age Range*

Participants' ages varied, with the largest group falling in the 25-34 age range. There were also participants under 25, 35-44, and 45-54, providing a diverse representation across different age groups.

3. *Educational Background*

Most participants held a Bachelor's degree (around 60%), while a significant portion had a Master's degree, and a smaller number had a Doctorate (PhD). This diversity in education levels indicates varying levels of expertise in both teaching and technology integration.

4. *Teaching Experience*

Teaching experience varied widely among participants. A considerable number had less than one year of experience, while others ranged from 1-3 years to more than 10 years. This mix of novice and experienced teachers provides insight into how technology use may differ across experience levels.

5. Subjects Taught

Participants taught a wide range of subjects, including English/Language Arts, Science, Mathematics, Social Studies/History, and Physical Education, showing that technology is being integrated across various discipline.

Challenges Teachers Face When Using Digital Technology In the Classroom

The incorporation of digital technology in the classroom has increased numerous benefits for both teachers and students. The learning environment has undergone a transformation thanks to digital technology, which has made interactive lessons and massive resources accessible. Nevertheless, despite these benefits, many educators find it extremely difficult to use these technologies effectively. The challenges they face can make it more difficult for them to fully utilize technology, which will ultimately lower the standard of instruction as a whole.

There are a number of challenges that instructors face when incorporating digital tools. Firstly, is lack of appropriate training and support. Despite the fact that schools might supply digital tools and platforms, professional development on their proper use is frequently lacking for teachers. Many teachers find it difficult to meaningfully incorporate these tools into their lesson plans in the absence of proper training. They could not be aware of all the features offered or lack the confidence to experiment with new technology, which would prevent them from making the most use of these resources. To make the most of digital tools, educators require thorough training programs and continuous assistance.

When adopting digital tools, teachers may encounter technical obstacles in addition to access issues. Issues like malfunctioning gear, software, or inadequate internet can generate disturbances in the classroom and annoyance for both educators and learners. Teachers are frequently forced to solve these technical issues, which takes time away from teaching. This results in lost class time as well as increased stress from overseeing a complicated learning environment.

The restricted availability of resources is a serious problem as well, especially for schools in underprivileged areas. Different students don't have equal access to software, equipment, or dependable internet connections. Teachers find it challenging to consistently integrate technology into their classrooms as a result of this digital divide, which results in differences in learning opportunities. The scarcity of resources for educators in these settings not only makes it difficult for them to adopt digital tools, but it also makes the existing educational disparities worse.

The Interpretation on the Challenges

Deeper problems that affect both student learning and the quality of instruction are highlighted by the difficulties teachers have when utilizing digital devices in the classroom. A lack in teachers' digital literacy skills is a serious issue. As many educators lack the skills required to use digital tools successfully, these resources are either underutilized or misused. This restricts the opportunity to raise student involvement and deters educators from completely incorporating technology into their teaching. In addition, technological malfunctions like broken electronics or inadequate internet access might impede instruction and cause annoyance. These problems highlight the need for improved technological assistance and infrastructure in schools by wasting important instructional time and causing unneeded stress. The growing digital gap is another significant issue. Educational disparities are exacerbated by the fact that students from disadvantaged backgrounds frequently have restricted access to devices and dependable internet. The consistent integration of digital resources may be hampered as a result of teachers having to modify their lesson plans to account for different access levels. Moreover, the inadvertent usage of digital gadgets may result in an increase in the burden for educators. It can take a lot of effort to learn new technologies, solve technical problems, and develop tech-based lesson plans, which can cause teacher burnout. When technology is not adequately supported, it can add complexity to education.

Inadequate training and support can also hinder the potential of digital gadgets to spur pedagogical innovation. Technology can turn from being a tool for deeper learning into a mere distraction in the classroom if there is no clear plan in place for incorporating it into instruction. Without knowing how to improve collaboration, creativity, or critical thinking, teachers could feel forced to use technology. So, tackling these issues calls for an all-encompassing strategy that emphasizes the use of technology in the classroom in a way that is pedagogically sound and involves improved training, support, and equal access to resources.

Conclusion of Study

The integration of modern digital technology has totally changed the face and character of teaching and learning. As different kinds of new technological appliances are being adopted in educational institutes around the world, it is more likely that these learning spaces will be interactive, engaging, and accessible with greater ease. However, digitization of learning faces some challenges. The many obstacles include inadequate teacher training, technical problems, and disparities in resource allocation that restrain educators from trying to effectively implement digital tools. Therefore, it affects the quality of instruction and student learning experience in underprivileged areas, since this is where the digital divide will be most evident. Results of this study confirm that demographic variables such as age, gender, years of teaching experience, and level of education determine significantly educators' perceptions about digital technology. Younger, less experienced teachers seem more willing to adopt newer digital tools; maybe this is because they are accustomed to technology in their personal lives or have had more recent training. On the other hand, older teachers and those with more years of experience may be more hesitant to try these tools because they may not be used to them or have less confidence in being able to use these tools. These demographic differences suggest that professional development and training programs would need to be tailor-made to ensure that all educators are capable of using technology in classrooms, regardless of their demographic backgrounds.

It also indicates that there is already an existing huge gap in the number of males to females in the teaching profession, and also in the usage of digital tools. Additionally, it exposes that women educators are in pursuit of more professional development opportunities related to technology, which corroborates prior research stating that females within education tend to take the initiative in order to stay ahead with regard to technological competency. It also points out, however, that in future studies, more balanced gender representation should be involved and a wider range regarding age and teaching experience to derive more generalizable results. While digital technology is bound to revolutionize education, effective integration requires much more than just handing over the tools. For teachers to address these challenges successfully, comprehensive training and ongoing support, along with access to reliable resources, are imperative. Till this set of issues is resolved, an effective and equitable digital learning environment—one that benefits all students—cannot be achieved.

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