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MATHEMATICS TEACHERS' PERCIEVED ACQUISITION, USAGE AND INTEGRATION OF 21ST CENTURY TECHNOLOGICAL SKILLS IN MINNA METROPOLIS, NIGER STATE

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ABSTRACT :

This study examined mathematics teachers' perceived acquisition, usage, and integration of 21st-century technological skills in instructional practices among secondary school teachers in Minna. The study adopted a descriptive survey research design. The population comprised all fifty-two (52) mathematics teachers in government senior secondary schools within Minna Metropolis, consisting of thirty-five (35) male teachers and seventeen (17) female teachers. A total population sampling technique was employed. Data were collected using a structured questionnaire titled Perceived Acquisition, Usage and Integration of 21st-Century Technological Skills in Instructional Practices Questionnaire (PAUITSIPQ). The instrument was validated by experts and tested for reliability using Cronbach's Alpha, which yielded a reliability coefficient of 0.846. Data were analyzed using mean and standard deviation to answer the research questions, while independent sample t-test was used to test the null hypotheses at 0.05 level of significance. The findings revealed that mathematics teachers in Minna Metropolis have low levels of acquisition, usage, and integration of 21st-century technological skills in instructional practices. The study further revealed significant differences between male and female mathematics teachers in the acquisition, usage, and integration of these technological skills, with male teachers demonstrating relatively higher competence than female teachers. The study concluded that inadequate technological competence among mathematics teachers limits effective classroom instruction and students' engagement in mathematics learning. It was recommended that regular professional development programmes, adequate provision of technological infrastructure, gender-inclusive digital training, and policy-driven support mechanisms be implemented to enhance teachers' technological competence and instructional effectiveness.

Keywords: 21st-century technological skills, mathematics teachers, technology integration, digital literacy, secondary school education, gender differences.

Introduction

Technology has become an integral component of modern society and has significantly transformed the educational landscape globally and across Africa. In recent decades, the integration of digital technologies into teaching and learning has shifted educational practice from traditional teacher-centered approaches to more learner-centered, interactive, and collaborative models. In Africa, technological innovations have increasingly influenced classroom practices by improving access to information, enhancing communication, and facilitating innovative instructional strategies (Bayaga & Khoza, 2024; Oubibi et al., 2024). The growing adoption of educational technologies such as computers, mobile applications, virtual learning platforms, and interactive software has created opportunities for improving teaching effectiveness and learning outcomes, particularly in science and mathematics education. Mathematics education, in particular, requires innovative instructional approaches due to its abstract and problem-solving nature. The integration of technology in mathematics teaching has proven effective in enhancing conceptual understanding, promoting visualization of abstract concepts, and supporting learners' engagement through simulations, dynamic graphing, and interactive problem-solving environments. In Ghana, Agyei, Agyei, and Benning (2024) found that digital technologies improved mathematics teachers' instructional delivery by facilitating computational tasks and concept validation, although the level of transformative integration remained relatively low. Similarly, Mukuka and Tatira (2025) observed that technology-enhanced teaching practices significantly improved mathematics teachers' pedagogical effectiveness and professional development in African contexts. The demands of the 21st century have made technological competence an essential requirement for teachers. These competencies extend beyond basic digital literacy to include information and communication technology (ICT) skills, online pedagogy, computational thinking, data management, digital collaboration, and the ability to integrate artificial intelligence-based tools into teaching and learning. According to Ajani (2025), teachers' digital competence significantly determines the effectiveness of technology integration in classroom practices, particularly in developing countries where educational transformation increasingly depends on digital innovation. In the African educational context, teachers' technological readiness remains critical for achieving educational reforms aligned with global digital transformation goals. For mathematics teachers, technological competence is particularly crucial because digital tools such as GeoGebra, graphing calculators, MATLAB, and adaptive learning systems enhance instructional delivery and students' engagement. Effective technology integration enables mathematics teachers to create interactive lessons, provide immediate feedback,

personalize learning experiences, and improve students' problem-solving and critical-thinking abilities (Angula & Simuja, 2025). This aligns with the global push toward technology-driven instructional models that prepare students for emerging workplace demands and digital economies.

However, several challenges continue to hinder effective acquisition and integration of 21st-century technological skills among teachers in Africa. These challenges include inadequate digital infrastructure, poor internet connectivity, insufficient training opportunities, limited institutional support, and disparities between urban and rural educational settings (Sepadi & Molapo, 2025; Oko, 2025). In many secondary schools in Nigeria, these barriers have affected teachers' ability to adopt innovative teaching strategies, thereby limiting students' exposure to technology-enhanced learning experiences. Also, gender disparities in technological skill acquisition and integration have emerged as an important issue in educational technology research. Studies within African educational contexts have shown that male teachers often report higher confidence and competence in technology use than female teachers due to differences in access, exposure, and training opportunities (Ajani, 2025; Sepadi & Molapo, 2025). This disparity may affect the extent to which teachers effectively integrate technological tools into classroom instruction, particularly in mathematics education where digital competence is increasingly necessary. Although several studies have examined technology integration in education, much of the existing literature focuses on general classroom technology adoption rather than subject-specific technological competencies required for mathematics instruction. In the Nigerian context, there remains limited empirical evidence on secondary school mathematics teachers' perceived acquisition, usage, and integration of 21st-century technological skills in instructional practices, particularly with consideration for gender differences. Therefore, this study seeks to examine mathematics teachers' perceived acquisition, usage, and integration of 21st-century technological skills in instructional practices among secondary school teachers in Minna Metropolis, Niger State.

Literature review

The concept of 21st-century technological skills has gained significant attention in education due to the increasing role of digital technologies in teaching and learning. These skills include digital literacy, information and communication technology (ICT) competence, problem-solving, collaboration, creativity, computational thinking, and the ability to integrate digital tools into instructional practices. According to Voogt et al. (2020), technological skills are essential competencies required for effective teaching in modern classrooms, particularly in adapting to technological innovations and improving students' learning outcomes. Similarly, Mishra and Koehler (2020) emphasized that technological knowledge must be integrated with pedagogical and content knowledge for effective classroom practice. In Africa, the adoption of 21st-century technological skills among teachers has increasingly become necessary due to the shift toward digital education systems. However, evidence suggests that many teachers still face challenges in acquiring these competencies due to infrastructural limitations and insufficient training opportunities.

For instance, Avdiu, (2025) conducted a study on learning skills for the future – implementing the 21st-century learning, with the objective of evaluating how future learning skills are adopted in educational practice. The study population comprised educators and curriculum experts in Kosovo, with a sample size of 204. A mixed-methods design was used, combining surveys and interviews to explore perceptions and actual integration of 21st-century skills such as creativity, collaboration, digital literacy, and adaptability. Quantitative findings showed that only 38% of educators frequently integrated digital skills into their teaching, while 62% admitted challenges in applying collaborative learning techniques due to infrastructural and training gaps. Qualitative insights further revealed a lack of institutional support and professional development. The researchers emphasized that successful 21st-century learning implementation requires systemic support and continuous teacher training. Similarly, Kaptan and Cakir (2025) investigated the effect of digital storytelling on digital literacy, 21st-century skills, and academic achievement. The study employed a quasi-experimental design involving 72 secondary school students in Turkey, divided into experimental and control groups. The intervention group was exposed to digital storytelling activities over a 6-week period, while the control group received traditional instruction. Results showed a significant improvement ($p < 0.01$) in digital literacy, communication, and problem-solving skills among students in the experimental group. The study also noted improved teacher engagement and better student-teacher interaction through digital platforms. The authors concluded that integrating creative technologies such as digital storytelling not only enhances student outcomes but also strengthens teachers' ability to embed 21st-century skills into their instructional practices.

In another study, Batman (2025) examined the effect of hybrid learning on academic achievement and 21st-century technology skills in teacher education using a quasi-experimental research design. The study involved 100 pre-service teachers enrolled in a university-level teacher education program. Participants were divided into experimental (hybrid learning) and control (traditional learning) groups. After a 12-week intervention, findings revealed that those in the hybrid learning group demonstrated significantly higher improvements in digital literacy, communication, and self-directed learning skills (mean difference = 1.42, $p < 0.05$). Additionally, students reported greater satisfaction and instructional engagement under hybrid methods. However, the study emphasized that the effectiveness of such instructional models depends heavily on instructor technological competence and design skills. More so, Nurhidayat, (2024) explored technology integration and teachers' competency in developing 21st-century learning in EFL (English as a Foreign Language) classrooms. Using a descriptive survey design, the study sampled 120 secondary school EFL teachers in Indonesia. Data were collected via questionnaires and interviews. Findings revealed that 72% of teachers had a moderate level of digital competency, but only 45% effectively integrated digital tools in lesson planning and delivery. Teachers highlighted obstacles such as insufficient training, low confidence in using new technologies, and limited access to reliable internet and devices. The study concluded that while awareness of 21st-century skills was high, practical application in teaching remained limited without structured professional development and administrative support. Niyazova (2023) found that digital skills acquisition varied significantly based on age and gender, with digital tool usage and content creation emerging as the strongest predictors of ICT competence. These studies indicate that acquisition of technological skills among teachers remains uneven and influenced by demographic and institutional factors.

The extent to which teachers use technological skills in classroom instruction determines the effectiveness of digital learning. Ahay and Mirici (2024) examined EFL instructor's implementations of 21st-century skills in their classes with a focus on how frequently and effectively teachers apply these skills during instruction. The study aimed to evaluate instructors' self-perception and real-time integration of critical competencies such as digital literacy, communication, and collaboration. A quantitative descriptive design was used, and data were collected from 113 EFL instructors across universities in Turkey through structured questionnaires. Results showed that only 36% of the instructors consistently integrated digital tools, while 58% reported

moderate usage, and the remaining 6% had minimal integration. The most frequently used skills were digital communication and information literacy, while creativity and critical thinking received the least focus. The study concluded that although most instructors were aware of the need for 21st-century skills, implementation was uneven, largely due to limited training opportunities and over-reliance on traditional teaching models.

Similarly, Budiarto (2024) conducted a systematic literature review on e-learning platforms for enhancing 21st-century skills in vocational school students. The study reviewed 35 scholarly articles published between 2015 and 2023 and highlighted that e-learning tools like Moodle, Edmodo, and Google Workspace enhanced collaboration, critical thinking, and problem-solving abilities. The findings showed that while students gained significantly from these tools, teacher competence in technology use was a primary factor affecting successful implementation. Teachers lacking in digital skills often failed to fully utilize e-learning platforms, thereby limiting the tools' impact on students. The study concluded that ongoing professional development is essential for improving instructional outcomes through digital means. Though centered on vocational education, this study is relevant to the current research by emphasizing that teacher acquisition and use of digital skills directly influence instructional effectiveness. The insight that poorly trained teachers underutilize technology parallels the present study's focus on identifying levels of acquisition and usage among mathematics teachers, including the influence of gender on such dynamics. Furthermore, Saleem (2024) on a biometric analysis to examine the scholarly trends in 21st-century skills research in response to Industry 4.0. Using data from 1,500 journal articles published between 2010 and 2023, the study analyzed patterns in keywords, authorship, and research focus across global contexts. The findings indicated a significant increase in publications post-2018, with technology integration and digital literacy being the most frequently explored domains. The study found that only 22% of the literature addressed teacher competencies specifically, suggesting a gap in research that connects technological evolution with teacher readiness. The authors recommended future studies focus on the educator's role in fostering 21st-century skills in classroom settings and emphasized the need for policy alignment.

Jassni (2024) also found that 76% of students perceived improvements in their critical thinking, communication, and collaborative skills through blended learning, while 67% of instructors acknowledged that their teaching methods had evolved to integrate more technological tools. However, challenges such as inconsistent internet access, lack of institutional support, and varying levels of digital competence among instructors were also reported. These findings suggest that technological skill usage among teachers is directly linked to competence, confidence, and institutional support.

Technology integration in mathematics education has been recognized as an effective means of improving students' engagement and conceptual understanding. Firmansyah and Aslan (2025) explored the relevance of STEAM education in preparing 21st-century students in Indonesian schools. The study utilized a descriptive survey design targeting 120 science and mathematics teachers across junior secondary schools. The findings revealed that integrating Science, Technology, Engineering, Arts, and Mathematics (STEAM) promoted creativity, critical thinking, and technological competence. However, only 42% of teachers reported feeling fully equipped to integrate technology-based methods into their teaching. The study concluded that while STEAM frameworks offer great potential, their successful adoption depends on the extent to which teachers possess 21st-century skills, particularly in digital pedagogy and cross-disciplinary instruction.

Likewise, Fitriati (2023) identified the challenges faced by teacher education institutions in preparing prospective mathematics teachers to effectively teach 4C skills (Critical Thinking, Creativity, Collaboration, and Communication). Conducted using a qualitative research design, the study involved semi-structured interviews with 10 teacher educators (university level) and 10 in-service mathematics teachers (school level) The findings revealed five critical challenges, including limited teacher training, lack of facilities, inadequate support systems, insufficient instructional resources, and weak collaboration between schools and universities. The study proposed a School-University Partnership Mediated Lesson Study (SUPER-LS) model, which fosters professional development through collaborative learning communities, helping both pre-service and in-service teachers integrate 4C skills into mathematics instruction effectively according to the study. These studies indicate that although technology integration improves mathematics teaching, its effectiveness depends on teachers' technological competence and institutional support.

Gender remains an important factor in technological skill acquisition, usage, and integration. Mudinillah (2024) found that male teachers demonstrated higher confidence in integrating technology into instructional practices than female teachers. Similarly, Kayhan and Korkmaz (2024) reported that male teachers scored significantly higher in technology self-efficacy than female teachers. Niyazova (2023) also found significant gender-based differences in digital skills acquisition, suggesting the need for targeted interventions to improve female teachers' technological competence. These findings show that gender disparities continue to influence technological competence among teachers.

Methodology

The study adopted a descriptive survey research design to examine the teachers perceived acquisition, usage, and integration of 21st century technological skills in their instructional practices. Quantitative data was collected through the use of questionnaire. The population of the study comprises all mathematics teachers in senior secondary schools within Minna Metropolis. According to recent educational records from Secondary Education Board, Minna Metropolis has 22 government senior secondary schools. The number of mathematics teachers across these schools is 52, comprising 35 Male teachers and 17 Female teachers. Three 3 schools out of these 22 schools in minna metropolis do not have mathematics teachers as at the time of visit.The study employs a total population sampling technique. These techniques involve using of the entire population. Total population sampling is used when the whole group is small or unique, allowing direct study of the entire accessible group (Kumar, 2019). At this stage total enumeration of all mathematics teachers in government secondary schools within Minna metropolis was use in the study. The research instrument for data collection was a structured questionnaire, designed to gather quantitative data from secondary school mathematics teachers in Minna Metropolis. This is to allows the systematic collection of data, ensuring uniform responses that can be easily analyzed statistically (Creswell and Creswell, 2019). The questionnaire was developed by the researcher title perceived acquisition, usage and integration in alignment with the research objective and divided into four major sections: Section A: collects personal and professional details of the respondents, Section B assesses teacher's perceived acquisition of Digital Literacy on 5 scale Not Acquired (NA), partially acquired (PA), Acquired (A), Mastered (M), Highly mastered (HM). Section C examined how frequently and effectively teachers use acquired technological skills in classroom instruction on 5 scale Never (N), Rarely(R), some time(S), Often (O), Always (A). While, Section D focus on how teachers incorporate technology into mathematics instruction on 5-point scale of Never (N), Rarely(R), some time(S), Often (O), and Always (A). The reliability of the research instrument was determined using the Cronbach's Alpha reliability test, for internal consistency and the

reliability found to be 0.846. The data were collected and analyzed using mean and standard deviation, which describe the strength, direction, relation and difference between the variables. While for the inferential statistics, independent sample t-test statistical technique was used to test the formulated null hypotheses.

Result and Discussion

Research Question one: What is the mean difference between male and female teachers in the acquisition of 21st century technological skills among secondary schools' mathematics teachers in Minna Metropolis?

Table 1: present Mean and standard deviation of the difference between male and female teachers' acquisition of 21st century technological skills among secondary schools Mathematics teacher in Minna metropolis Niger State.

Variable	Gender	Mean	Std. Deviation	Mean difference
ACQUSITION	Female	2.3623	.53911	
	Male	3.2981	.52540	0.935

Table 1 present mean and standard deviation between male and female teachers' acquisition of 21st century technological skills among secondary school Mathematics teachers in Minna metropolis Niger state. The results revealed that male teachers mean score was 3.29 while the female teachers mean score was 2.36, with mean difference of 0.94 indicating that male teachers have higher mean score than the female teachers their counterpart on the acquisition of 21st century technological skills in Minna metropolis Niger State.

$\mathbf{H_{O1}}$: There is no significant difference between male and female Mathematics teachers 21st century technological skills acquisition in Minna metropolis Minna Niger state.

Table 2 present the independent sample t- test of the difference between male and female acquisition of 21st century technological skills

variable		T	df	p- value	Decision
Acquisition	Equal variance assume	-6.16	49	.000	Reject

Table 2: Present the independent samples t- test between male and female Mathematics teachers 21st century technological skills acquisition in Minna metropolis. The result indicated that there is significance difference between male and female teachers in the acquisition of 21st century technological skills with t – value = -6.16, p- value = 0.000 which is less than 0.05 level of significance. Therefore, the null hypothesis There is no significant difference between male and female Mathematics teachers 21st century technological skills acquisition in Minna metropolis Minna Niger state, is rejected.

The findings of this study revealed that Male and female mathematics teachers in Minna metropolis have not acquired the 21st century technological skills. Although the male teachers have high mean value than the female teachers in terms of the acquisition of the 21st century technological skills in teaching mathematics This finding was supported by Niyazoet (2023) who found that ICT skills acquisition varied significantly base on gender and age suggesting the need for tailoring programs to address the differences. The result is also in line with Saleem (2024) whose study reveal that educator particularly in STEM field still lack technological skills needed in the classroom. Furthermore, in support of this finding, Fitrial,(2023) revealed five critical challenges include limited teachers training, lack of facilities, inadequate support system, insufficient instructional resources and weak collaboration between schools hinder the integration of 21st century technology skills. Also Dinçer. (2024). reveal that most existing 21st century skills frame work focus primarily on student competences with little or no emphasis on teachers hinder teachers from acquiring the skills. In contrary to the findings of this study, Nurhidayat (2024) and Mudinillah (2024) in their respective findings revealed above 56% of the teachers have acquired technological skills use in project base learning.

Research Question two: What is the mean difference between male and female teachers in the usage of 21st century technological skills among secondary schools Mathematics teachers in Minna Metropolis?

Table 3: present Mean and standard deviation of the difference between male and female teachers' usage of 21st century technological skills among secondary schools Mathematics teacher in Minna metropolis Niger State.

Variable	GENDER	Mean	Std. Deviation	Std. Error Mean	Mean Difference
USAGE	Female	2.1435	.57818	.10556	0.7136
	Male	2.8571	.64285	.14028	

Table 3 Present mean and standard deviation between the male and female teachers' usage of 21st century technological skills among secondary school mathematics teacher in Minna metropolis, Niger state. The table shows that the mean score of male teachers was 2.85 while the female mean score was 2.14 with mean difference of 0.71 indicating that male teachers have higher mean score than the female teachers their counterpart on the usage of 21st century technological skills in Minna metropolis Niger State.

H_{O2}: There is no significant difference between male and female Mathematics teachers in the usage of 21st century technological skills among secondary school mathematics teachers in Minna metropolis

Table 4: Present the independent t-test of the difference between male and female usages of 21st century technology skill

Variable		t	df	p-value	Decision
Usage	Equal variances assume	-4.14	49	.000	Rejected

Table 4: Present the independent samples t- test between male and female Mathematics teachers 21st century technological skills usage in Minna metropolis. The result indicated that there is significance difference between male and female teachers in the usage of 21st century technological skills with t – value = -4.14, p- value = 0.000 which is less than 0.05 level of significance. There for the Null hypothesis there is no significant difference between male and female Mathematics teachers in the usage 21st century technological skills among secondary school mathematics teachers in Minna metropolis hypothesis is rejected.

Findings of this study reveal that Mathematics teachers in Minna metropolis do not use 21st century technological skills in teaching, because they have not acquired the skills. The findings are in agreement with work of Altay and Mirici (2024) who disclose that only 36% of the instructors consistently use digital tools, while 64% reported moderately use skills, the most frequently used skills were digital communication and information literacy while creativity and critical thinking received the least focus. This study also agreed with the findings of Siddiq *et al*. (2024) reported that teachers with low confidence and training in digital tools were less likely to implement technology enhance instruction. This study also supports the work of Voogt. (2020) The findings revealed that technological advancement has transformed education, several barriers hinder the use of 21st century technological skills, including insufficient teachers training and lack of digital infrastructural. In contrary to this study Kayhan*et* and Korkmaz (2024) the study finds out that self-efficacy in using digital tools correlated positively with frequency of classroom technology us.

Research Question three: What is the mean difference between male and female teachers in the integration of 21st century technological skills among secondary school mathematics teachers in Minna Metropolis?

Table 5: present Mean and standard deviation of the different between male and female teacher's integration of 21st century technological skills among secondary schools Mathematics teacher in Minna metropolis Niger State.

Variable	Gender	Mean		Std. Deviation	Mean Difference
INTEGRATION	Female	2.4193	.74848	0.7436	
	Male	3.1629	.53413		

Table 5 present the mean and standard deviation between male and female teachers' integration of 21st century technological skills the table showed the mean score of male mathematics teachers to be 3.16 while the mean score of the female mathematics teachers to be 2.41 with mean difference of 0.74 indicating that male teachers have higher mean score than the female teachers their counterpart in the integration of 21st century technological skills in Minna metropolis Niger State.

HO3 There is no significance relationship between male and female Mathematics teachers in the integration of 21st century technological skills among secondary school Mathematics in Minna Metropolis.

Table 6: Present the independent t-test of the difference between male and female integration of 21st century technology skill

Variable	t	df	p- value	Desiton
Integration	-3.90	49	.000	Rejected

Table 6: Present the independent samples t- test between male and female Mathematics teachers 21st century technological skills integration in Minna metropolis. The result indicated that there is significance difference between male and female teachers in the integration of 21st century technological skills with t – value = -3.90, p- value = 0.000 which is less than 0.05 level of significance. Therefore, the null hypothesis there is no significance relationship between male and female Mathematics teachers in integration of 21st century technological skills among secondary school Mathematics in Minna Metropolis. Is rejected.

On the integration of 21st century technological skills the findings of this study show that Mathematics teachers in Minna metropolis do not integrate the 21st century technological skills dew to few mathematics teachers that acquire the skills in table 4.1 This result is also in line with Stehle and peters – Burton. (2019) findings reveal that few lesson plan integrated 21st century technological skills and simultaneously engaged students. The result also in line with Thurm and Barzel (2021) findings show that teachers perceived technology as a barrier citing technical difficulties and concern over students' dependence on digital tools. The result is also is also in line with Avdiu, (2025) findings show that only 30% of educators frequently integrate digital skills in to their teaching while 70% admitted challenges in applying due to training gaps lack of institutional support and professional development. In contrary to this study, Jassni, (2024) who discover that 67% of the instructors acknowledge that their teaching methods had evolved to integrating technology tools.

Conclusion

The study examined mathematics teachers' perceived acquisition, usage, and integration of 21st-century technological skills in instructional practices among secondary school teachers in Minna Metropolis, Niger State. The findings revealed that mathematics teachers generally demonstrate low levels of acquisition, usage, and integration of 21st-century technological skills in their classroom practices. Although male teachers recorded relatively higher mean scores than female teachers across the three variables, the overall level of technological competence among both groups remains below the expected standard for effective 21st-century instructional delivery. The study further established significant gender differences in the acquisition, usage, and integration of technological skills, indicating that gender plays an important role in teachers' technological competence and classroom application. This suggests that disparities in access to training opportunities, digital exposure, and institutional support may contribute to unequal technological readiness among teachers. It is established in this study that mathematics instruction in secondary schools within Minna Metropolis is still largely dependent on conventional teaching approaches, which may limit students' engagement, conceptual understanding, and development of problem-solving skills required in the digital age. Therefore, strengthening teachers' technological competencies through structured professional development, institutional support, and equitable access to technological resources is essential for improving mathematics teaching and learning outcomes.

Recommendations

The following recommendations were made based on the findings of this study:

i. The Niger State Ministry of Education and Secondary Education Board should organize regular workshops, seminars, and in-service training programmes for mathematics teachers to improve their acquisition and application of 21st-century technological skills.
ii. Government and school administrators should provide adequate technological facilities such as computers, projectors, internet access, smart boards, and mathematics software to support effective instructional practices.
iii. Specialized and inclusive technology training programmes should be developed to support female mathematics teachers in building confidence and competence in technology usage and integration.
iv. Teacher preparation institutions such as Federal University of Technology Minna and colleges of education should embed practical technology integration courses into mathematics teacher education programmes.
v. Schools should establish peer mentoring systems where technologically competent teachers support and mentor others in acquiring and integrating digital skills into classroom instruction.

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