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Teachers' Readiness, Challenges, and Perceptions of E-learning Adoption in Public Schools in Kwara State, Nigeria

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Abstrak : The integration of e-learning into public education systems has become increasingly important in Nigeria, especially following the disruptions caused by the COVID-19 pandemic. Despite its potential to expand access and improve instructional quality, adoption in primary and secondary schools remains inconsistent, largely due to infrastructural, institutional, and attitudinal barriers. Understanding teachers' readiness to embrace e-learning is critical, as their perceptions and competencies significantly shape successful implementation. This study examined the readiness of public-school teachers in Kwara State to adopt e-learning, identified the challenges affecting adoption, and explored teachers' proposed solutions. A descriptive survey design was employed, with data collected from 743 teachers (379 from the State Universal Basic Education Board [SUBEB] and 364 from the Teaching Service Commission [TESCOM]). A validated questionnaire served as the instrument for data collection, and descriptive statistics (mean and rank order) were used for analysis. Findings revealed that teachers reported relatively high levels of technical competence, including e-learning proficiency and digital literacy, alongside the ability to support students in digital learning. However, attitudes toward full-scale implementation were very low. Teachers highlighted lack of management support, inadequate infrastructure, and insufficient professional development as the most significant challenges. Solutions proposed included curriculum integration of e-learning, provision of adequate devices, regular training, and teacher incentives. The study concludes that while teachers are technically prepared, systemic and institutional barriers constrain adoption. Its contribution lies in providing comparative insights between primary and secondary teachers, demonstrating that readiness is shaped by institutional context. Future interventions should prioritise leadership engagement, infrastructural investment, and sustainable professional development to translate teacher readiness into effective e-learning integration

INTRODUCTION

The advent of modern technology, like E-learning has revolutionised educational systems by making the teaching and learning process effective and efficient. The rapid growth of digital technologies has significantly reshaped educational delivery worldwide, expanding opportunities for flexible, interactive, and accessible learning (Nwuke & Yellowe, 2025). E-learning—defined as the use of information and communication technologies (ICT) to facilitate teaching and learning—has become a central feature of education systems, particularly in the aftermath of global disruptions such as the COVID-19 pandemic (Adeoye et al., 2020; Obododike & Okekeokosisi, 2020). Research consistently highlights its potential to enhance student engagement, improve instructional efficiency, and provide continuity of learning beyond the physical classroom (Abanyam & Laetitia, 2024; Nwuke & Nwanguma, 2024). Despite these benefits, the implementation of e-learning is uneven across contexts. In many developing countries, especially Nigeria, infrastructural limitations—including inadequate ICT devices, unreliable internet connectivity, unstable electricity, and insufficient government investment—remain persistent barriers (Udegbunam et al., 2023). Beyond infrastructural deficits, scholars argue that the success of e-learning depends not only on the availability of technology but also on the readiness and willingness of teachers to adopt it (Nwokike et al., 2023; Oshowole, 2024). According to the Technology Acceptance Model (TAM), perceived usefulness and ease of use are critical determinants of technology adoption, suggesting that teachers' perceptions directly influence whether e-learning becomes embedded in classroom practice (Ibrahim & Shiring, 2022).

In the Nigerian context, most studies have focused on students' experiences with digital learning (Egielewa et al., 2022; Ibrahim et al., 2023), while relatively little attention has been paid to teachers' perceptions, readiness, and challenges (Sunday et al., 2025). This imbalance is problematic because teachers are the principal implementers of educational technologies; without their competence, confidence, and institutional support, the full promise of e-learning cannot be realised (Nwokike et al., 2023). Moreover, resistance to change, limited professional training, and lack of incentives continue to undermine teachers' adoption of digital tools in Nigerian schools (Lasisi et al., 2024). Kwara State provides an especially relevant case for examining these issues. With over 36,000 teachers under the State Universal Basic Education Board (SUBEB) and the Teaching Service Commission (TESCOM), the state reflects both the opportunities and challenges of e-learning adoption in Nigerian public schools. While government initiatives have introduced ICT resources in some schools, disparities in infrastructure, digital literacy, and policy support persist, raising concerns about teachers' readiness to integrate e-learning into their pedagogy (Keston & Abubakar, 2024). This study investigates teachers' perceptions of e-learning adoption in Kwara State by examining their readiness, the challenges they encounter, and the solutions they propose. By shifting attention from students to teachers, the study addresses a critical gap in the literature and provides evidence-based insights to guide policymakers, school administrators, and teacher educators in strengthening e-learning integration in Nigerian public schools.

Statement of the Problem

Although e-learning has become a global strategy for enhancing teaching and learning, its adoption in Nigerian public schools remains slow and inconsistent (Nwokike et al., 2023; Obododike & Okekeokosisi, 2020). In many cases, infrastructural challenges—such as inadequate computers, unstable electricity, unreliable internet connectivity, and limited access to digital devices—continue to undermine its effective implementation (Udegbunam et al., 2023). Beyond infrastructure, teachers' digital literacy and readiness to integrate technology into instruction are often limited, reflecting insufficient training, lack of retraining opportunities, and minimal institutional support (Oshowole, 2024; Targema-Takema, 2024). Teachers play a pivotal role in the success of e-learning initiatives, yet their adoption of digital tools is constrained by workload concerns, resistance to change, and lack of incentives from school management and government authorities (Keston & Abubakar, 2024). Without deliberate efforts to address these barriers, the integration of e-learning risks being superficial, thereby reducing its potential to improve student engagement, participation, and academic performance (Hassan, 2023).

In Nigeria, existing studies have predominantly examined students' perceptions and usage of e-learning technologies (Idika et al., 2025; Irielle, 2024), leaving teachers' perspectives underexplored. This gap is significant because teachers are the primary implementers of curriculum innovations, and their attitudes, competence, and institutional support directly determine whether e-learning is adopted in practice (Omotayo & Tiamiyu,2017). Kwara State represents a critical context for this inquiry. With more than 36,000 teachers under the State Universal Basic Education Board (SUBEB) and the Teaching Service Commission (TESCOM), the state faces both the promise and the challenges of integrating ICT into teaching. Reports indicate persistent deficits in training opportunities, insufficient provision of digital devices, and inadequate policy support for technology-driven learning (Kehinde, 2021). Unless these challenges are systematically addressed, e-learning adoption in Kwara State schools will remain limited, thereby weakening efforts to align Nigerian education with global best practices. Against this backdrop, this study investigates teachers' perceptions of e-learning adoption in Kwara State, focusing on their readiness, the challenges they face, and the solutions they consider viable.

Purpose of the Study

The study was designed to:

1. Examine teachers' readiness to adopt e-learning in public primary and secondary schools in Kwara State.
2. Identify the major challenges hindering teachers' adoption of e-learning technologies in Kwara State.
3. Explore practical solutions for promoting effective integration of e-learning in Kwara State schools, as perceived by teachers.

Research Questions

1. How ready are teachers in Kwara State to adopt e-learning in public primary and secondary schools?
2. What challenges do teachers face in adopting e-learning for classroom instruction in Kwara State?
3. What solutions do teachers propose to enhance the effective adoption of e-learning in Kwara State schools?

Literature Review

1. Concept of E-Learning

E-learning has been widely conceptualised as the use of digital information and communication technologies (ICTs) to support teaching and learning processes across multiple modalities. While earlier definitions positioned e-learning as a form of online distance learning (Culduz, 2024)**,** more recent scholarship emphasises that it encompasses a continuum of practices, from fully online courses to blended learning and technology-enhanced classroom instruction (Tabowei, 2021). Contemporary approaches highlight e-learning's flexibility, enabling learners to access content "anytime, anywhere" and to engage with both synchronous (real-time) and asynchronous (self-paced) modes of delivery (Yadav, 2023). Common platforms include Learning Management Systems (LMS), virtual classrooms, multimedia repositories, mobile applications, and cloud-based collaboration tools. These platforms typically support both content delivery (eBooks, simulations, podcasts, and videos) and pedagogical interaction (discussion forums, peer collaboration, formative assessment).

Importantly, scholars argue that e-learning is not only a technological innovation but also a pedagogical transformation. It requires teachers to integrate digital resources into lesson design, assessment, and student support (Makarova & Makarova, 2018). UNESCO's ICT Competency Framework for Teachers further underscores that effective e-learning adoption demands teacher competence in pedagogy, curriculum integration, assessment, and professional development—not just technical skills (Ahmed, 2025). Thus, e-learning should be understood as a holistic ecosystem: a combination of infrastructure, digital content, and human capacity (teachers and learners) supported by institutional and policy frameworks. In low- and middle-income countries, the concept also entails addressing infrastructural deficits, teacher readiness, and cultural attitudes towards technology (Barikzai et al., 2024).

Teachers' Perception of Readiness to Adopt E-learning Technologies

Teacher readiness to adopt e-learning is widely recognised as a multidimensional construct, encompassing digital literacy, pedagogical competence, attitudinal disposition, and institutional support (Nurhikmah et al., 2024). Within the Technology Acceptance Model (TAM), readiness reflects the degree to which teachers perceive e-learning as useful and easy to use, shaping their intention to integrate it into teaching (Azhar & Rani, 2020). Although much of the Nigerian literature has focused on students or school managers, these studies provide useful insights into

the general state of e-learning adoption. For instance, Nwadi et al. (2023) examined awareness and utilisation of e-learning technologies among vocational and technical education students at the University of Nigeria, Nsukka. Their findings showed relatively high use of platforms such as Google Classroom (75.6%) and institutional websites (84.8%), but limited awareness of Moodle and Canvas. While this study was student-focused, it highlights gaps in exposure to diverse learning platforms even within higher education, suggesting that teachers may face similar or greater challenges in awareness and utilisation.

At the secondary school level**,** Uzochukwu and Oluwuo (2022) studied principals' perceptions of e-learning applications for school management during emergencies in Rivers State. Principals affirmed the relevance of ICT tools such as laptops and televisions, but the study revealed limited integration of more advanced digital platforms. Although not teacher-specific, the findings reinforce the notion that institutional leaders in Nigeria recognise the potential of e-learning, yet systemic adoption remains shallow. More directly related to teachers, Owoyale-Abdulganiy and Ayuba (2021) investigated the use of ICT in teaching Islamic Studies in Kwara State. Teachers and students reported using mobile devices and social media platforms such as WhatsApp, Zoom, Telegram, and Facebook as improvised e-learning tools. This demonstrates teacher willingness to adopt accessible technologies but also exposes a reliance on informal platforms, raising questions about pedagogical effectiveness, content quality, and long-term sustainability. Synthesising these studies, a pattern emerges: while both teachers and learners in Nigeria show a degree of awareness and willingness to engage with digital tools, readiness is often shaped by access to technology, institutional policy, and professional training. Teachers appear most comfortable adopting familiar, low-cost applications (e.g., WhatsApp, Facebook), but are less prepared for structured platforms like LMSs. Overall, the literature suggests that Nigerian teachers may demonstrate functional readiness (basic skills, willingness), but lack systemic readiness (infrastructure, institutional incentives, professional development). Addressing these gaps is critical for successful e-learning adoption in public primary and secondary schools in Kwara State.

Teachers' Perception of Challenges Affecting E-learning Adoption in Education

The adoption of e-learning technologies in schools is constrained by a wide range of challenges that span infrastructural, institutional, and teacher-related domains. At the individual level, teachers may resist e-learning due to workload concerns, lack of confidence, or preference for traditional pedagogies (Hassan et al., 2021). This "cultural and pedagogical resistance" has been observed in several Nigerian contexts, where teachers perceive technology-driven approaches as disruptive to established routines. In line with the Technology Acceptance Model, these perceptions influence teachers' attitudes and consequently their willingness to adopt e-learning (Alhumaid et al., 2020). At the institutional level, insufficient professional development, inadequate incentives, and limited administrative encouragement further constrain adoption. Ogbu et a**l.** (2024) revealed that teachers in Nasarawa State found valued digital technologies during the COVID-19 pandemic; their capacity to sustain use was hindered by inadequate training and a lack

of systemic support. Similarly, Mattaga (2023), studying secondary schools in Kogi State, highlighted inadequate infrastructure, insufficient funding, and weak digital skills among teachers as persistent barriers.

Infrastructural deficits remain among the most cited obstacles. Agbeyangi and Suleman (2024) and Onyekachi (2024) both note that poor internet connectivity, unreliable electricity, and lack of access to functional devices are critical limitations in Nigeria and other low- and middle-income countries. Magaji (2018) revealed that teachers across Ilorin metropolis reported that high software costs, limited ICT knowledge, difficulties in interpreting software, and recurring expenses associated with internet access were major obstacles to e-learning integration. Studies also indicate that challenges extend beyond infrastructure and training to include resource availability and cognitive factors. Ayomide (2025), although focusing on students, found that infrastructural constraints, availability of learning tools, and limited support significantly shaped ICT adoption in Ogun State. This finding, while not teacher-specific, suggests systemic issues that also affect teachers who must rely on the same resources to deliver instruction. Taken together, these studies suggest that Nigerian teachers' perceptions of e-learning adoption challenges are shaped by three interrelated dimensions: Infrastructural barriers (electricity, internet, devices, cost of digital resources). Institutional and systemic gaps (inadequate professional development, lack of incentives, weak administrative support). Teacher-level factors (digital literacy, workload concerns, resistance to pedagogical change). Addressing these barriers is critical for bridging the gap between teachers' awareness of e-learning's benefits and their ability to integrate it effectively into classroom practice.

RESEARCH METHOD

This study adopted a descriptive survey research design. The design was considered appropriate because the study sought to gather teachers' perceptions, readiness levels, challenges, and proposed solutions to e-learning adoption in public schools. The target population comprised 36,588 public school teachers in Kwara State, Nigeria. This included 29,998 teachers under the State Universal Basic Education Board (SUBEB) and 6,590 teachers under the Teaching Service Commission (TESCOM) (Kwara State Teaching Service Commission, 2023). The sample size of 743 teachers was determined using Krejcie and Morgan's sample size determination table, which provides scientifically valid sample sizes for large populations. The sample consisted of 379 SUBEB teachers and 364 TESCOM teachers. A purposive sampling technique was employed to ensure that only teachers with at least basic ICT exposure and teaching responsibilities participated, since they were more likely to provide informed responses regarding e-learning adoption. Although purposive, the sample was distributed proportionately across SUBEB and TESCOM schools to reflect the structure of the population. It is acknowledged that relying on digital access (through online distribution) may have excluded some teachers without internet-enabled devices, which introduces a potential sampling bias. Data were collected using an adapted structured questionnaire titled Perception of Teachers in the Adoption of E-learning in Education Questionnaire (PTAEIEQ). The instrument was divided into three sections aligned with the

research objectives: Section A: Teachers' readiness to adopt e-learning (10 items). Section B: Challenges hindering adoption (8 items). Section C: Solutions for effective adoption (7 items). Items were rated on a 5-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5). The instrument underwent content validation by three experts in Educational Technology, Measurement, and Teacher Education, who reviewed items for clarity, relevance, and alignment with the study objectives. Based on their feedback, minor modifications were made to improve wording and construct alignment. Reliability was established through a pilot test with 40 teachers from private schools in Kwara State, who shared similar characteristics with the target population. Internal consistency reliability was assessed using Cronbach's alpha, which yielded a coefficient of 0.87, indicating a high level of reliability. The questionnaire was administered via Google Forms. Links to the instrument were shared on the official online platforms of TESCOM and SUBEB, ensuring wide coverage of both primary and secondary school teachers. Respondents were given two weeks to complete the survey, and reminders were sent to maximise participation. Out of the distributed forms, 743 valid responses were received and used for analysis. Data collected were analysed using descriptive statistics, including frequency counts, percentages, means, and ranks. These were used to answer the three research questions on readiness, challenges, and solutions. The decision rule followed was that a mean score of 3.50 and above indicated high agreement, 2.50–3.49 indicated moderate agreement, and below 2.50 indicated low agreement. Although inferential statistics (e.g., independent t-tests) could have been employed to test differences between TESCOM and SUBEB teachers, the study was limited to descriptive **analysis** to highlight teachers' collective perceptions rather than test hypotheses.

RESULTS AND DISCUSSION

Research Question 1: *What is the perception of teachers' readiness to adopt e-learning in education in Kwara State?*

Table 1.
Mean Differences Between Primary and Secondary School Teachers' Readiness to Adopt E-Learning (N = 743)

S/N	Teachers' Readiness to Adopt E-Learning	TESCOM (Secondary) M	Rank	SUBEB (Primary) M	Rank
1	Demonstrate understanding and confidence in adopting e-learning	3.14	17th	3.10	18th
2	E-learning proficiency	3.94	1st	3.85	2nd
3	Digital literacy for teaching	3.70	4th	3.67	5th
4	Knowledge of e-learning principles	3.35	16th	3.38	11th
5	Ability to guide and support students	3.71	3rd	3.67	6th
6	Positive attitude towards full implementation	1.43	20th	1.50	19th

S/N	Teachers' Readiness to Adopt E-Learning	TESCOM (Secondary) M	Rank	SUBEB (Primary) M	Rank
7	Strong belief in e-learning content	3.35	15th	3.39	10th
8	Addressing concerns/anxieties in use	3.38	12th	3.37	14th
9	Readiness to embrace e-learning	3.48	8th	3.51	7th
10	Disposition to the proper adoption of e-learning	3.38	13th	3.43	9th

Note. Means are based on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Source: Field Survey (2025).

Table 1 presents the perceptions of primary (SUBEB) and secondary (TESCOM) school teachers regarding their readiness to adopt e-learning. The results indicate that teachers generally perceive themselves as moderately ready for e-learning integration, with variations across specific dimensions of readiness. The highest-rated item for both groups was e-learning proficiency (M = 3.94 for TESCOM; M = 3.85 for SUBEB), suggesting that teachers feel confident in their ability to use e-learning tools for instruction. This was followed by their ability to guide and support students in digital learning (M = 3.71; 3.67) and their digital literacy skills (M = 3.70; 3.67). These findings highlight that teachers already possess essential technical competencies for adopting digital learning. However, several indicators suggest attitudinal resistance. The lowest mean scores were recorded for "I have a positive attitude towards full implementation of e-learning in my school" (M = 1.43 for TESCOM; M = 1.50 for SUBEB), ranked 20th and 19th, respectively. This implies that while teachers acknowledge their digital competence, they remain sceptical about fully transitioning to e-learning. Similarly, moderate scores on "knowledge of e-learning principles" (M = 3.35; 3.38) and "disposition to proper adoption of e-learning" (M = 3.38; 3.43) reflect a gap between basic skills and willingness to fully embrace e-learning. The findings reveal that while teachers in Kwara State are technically competent and moderately prepared for e-learning, their low positive attitude toward full implementation suggests conditional readiness.

Research Question 2: *What is the difference between primary and secondary school teachers' perceptions of the challenges facing teachers in e-learning adoption in education in Kwara State?*

Table 2.
Mean Differences Between Primary and Secondary School Teachers' Perceptions of Challenges in Adopting E-learning (N = 743)

S/N	Challenges Influencing the Adoption of E-learning	TESCOM (Secondary) M	Rank	SUBEB (Primary) M	Rank
11	Lack of school management support	3.20	1st	3.14	2nd
12	Inadequate e-learning devices in schools	3.11	3rd	3.06	4th
13	Lack of training and retraining for teachers	2.90	7th	2.98	5th
14	Poor digital skills among teachers	2.83	9th	2.91	6th
15	Lack of legislation for adoption	2.81	10th	2.89	8th
16	Lack of e-learning infrastructure	2.74	13th	2.80	11th
17	High cost of purchasing data	2.65	14th	2.74	12th
18	Unstable power supply	2.51	16th	2.60	15th

Note. Means are based on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Source: Field Survey (2025).

The results in Table 2 reveal that both primary (SUBEB) and secondary (TESCOM) school teachers perceive institutional barriers as the greatest challenge to e-learning adoption. The highest-rated challenge was the lack of school management support (M = 3.20 for TESCOM; M = 3.14 for SUBEB), followed by inadequate e-learning devices in schools (M = 3.11; 3.06). Teachers also emphasised the lack of training and retraining opportunities (M = 2.90; 2.98), suggesting that professional development remains insufficient. In contrast, infrastructural challenges such as unstable power supply (M = 2.51; 2.60) and high cost of purchasing data (M = 2.65; 2.74) were ranked lower, though still recognised as barriers. This finding aligns with Balogun and Obimuyiwa (2023), who noted that inadequate ICT infrastructure and limited technical training hindered the adoption of digital learning in Ilorin, Kwara State. Teachers in Kwara State

recognise e-learning's potential but perceive its adoption as constrained primarily by institutional and infrastructural challenges, rather than personal resistance alone. Addressing these barriers through stronger policy support, improved training, and the provision of devices is essential for sustainable integration.

Research Question 3: *What is the difference between primary and secondary school teachers' perceptions of the proffered plausible solutions for teachers' proper adoption of e-learning in education in Kwara State?*

Table 3.
Mean Differences Between Primary and Secondary School Teachers' Perceptions of Solutions for E-learning Adoption (N = 743)

S/N	Proposed Solutions to the Adoption of E-learning	TESCOM (Secondary) M	Rank	SUBEB (Primary) M	Rank
19	Curriculum redesigned to include e-learning content	3.32	8th	3.67	1st
20	Adequate provision of e-learning technologies for teachers	3.38	5th	3.50	2nd
21	Allowance/incentives for teachers who adopt e-learning	3.45	3rd	3.36	4th
22	Regular e-learning training programmes for teachers	3.19	9th	3.36	6th
23	Adequate e-learning infrastructure in schools	3.45	4th	3.10	12th
24	Free e-learning devices for teachers and students	3.32	7th	3.06	13th
25	State Assembly legislation on compulsory adoption	3.18	10th	3.14	11th

Note. Means are based on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Source: Field Survey (2025).

Table 3 presents teachers' perceptions of solutions for enhancing e-learning adoption in Kwara State schools. Results reveal that teachers proposed a mix of policy reforms, infrastructural investments, and incentive-driven strategies. For SUBEB (primary school teachers), the highest-rated solution was a redesigned curriculum that integrates e-learning content (M = 3.67), followed by adequate provision of e-learning technologies (M = 3.50). For TESCOM (secondary school teachers), the top solutions were adequate infrastructure in schools (M = 3.45) and allowances or incentives for teachers who adopt e-learning (M = 3.45). These findings suggest that while primary

school teachers emphasise curriculum alignment and resources, secondary school teachers prioritise infrastructure and motivation. Both groups rated regular training programmes moderately (M = 3.19; 3.36), underscoring the need for continuous professional development. Interestingly, "free e-learning devices for teachers and students" received relatively low mean scores (M = 3.32; 3.06), possibly reflecting scepticism about feasibility. Similarly, "legislation on compulsory adoption of e-learning" was rated lowest (M = 3.18; 3.14), indicating that teachers favour supportive measures over top-down mandates. Teachers in Kwara State perceive effective adoption of e-learning as dependent on a multi-pronged approach: aligning curriculum with digital learning, improving infrastructure, providing professional training, and introducing teacher incentives. Without these systemic supports, their readiness to adopt e-learning may remain limited to technical competence without translating into sustained classroom practice.

Discussion of Findings

This study investigated the readiness of public primary and secondary school teachers in Kwara State to adopt e-learning, the challenges constraining adoption, and the plausible solutions teachers proposed. Findings revealed that teachers rated their technical competence relatively high, with both TESCOM (secondary) and SUBEB (primary) teachers reporting confidence in e-learning proficiency, digital literacy, and the ability to guide students in digital learning. However, attitudinal readiness was weak: teachers expressed low positive attitudes toward full implementation of e-learning, suggesting reluctance to transition fully to technology-mediated instruction. Institutional barriers emerged as the most significant challenges, particularly a lack of management support, inadequate devices, and insufficient professional training. Infrastructural limitations—such as unstable electricity and high internet costs—were also highlighted, though ranked slightly lower. Regarding solutions, teachers proposed curriculum redesign to integrate e-learning, improved provision of technologies, continuous training, and teacher incentives. SUBEB teachers emphasised curriculum alignment, while TESCOM teachers prioritised infrastructure and allowances. These findings are broadly consistent with prior empirical evidence. Magaji (2018) and Balogun and Obimuyiwa (2023) reported that teachers in Ilorin faced high software costs, unreliable internet, and limited ICT knowledge, while Mattaga (2023) documented similar infrastructural and skills-related constraints in Kogi State. Likewise, Ogbu et al. (2024) found that teachers in Nasarawa State valued e-learning during the pandemic but struggled with sustainability in the absence of systemic support. These results echo observations that Nigerian teachers often possess baseline ICT skills but face systemic barriers such as inadequate training and weak institutional backing (Hassan et al., 2021; Oshowole, 2024). However, some contrasts are also notable. Uzochukwu and Oluwuo (2022) reported more positive managerial support for e-learning in Rivers State, whereas teachers in this study ranked the lack of management support as the top challenge. This divergence suggests that leadership perceptions may differ from teachers' lived experiences. Moreover, while studies in higher education (Nwadi et al., 2023; Idika et al., 2025) often report stronger engagement with structured platforms like Moodle or institutional LMSs, teachers in this study relied more on basic tools such as WhatsApp and Zoom (Owoyale-

Abdulganiy & Ayuba, 2021). This highlights contextual disparities between higher education and K–12 schooling. Overall, the findings show that teacher readiness in Kwara State is conditional rather than absolute. Teachers demonstrate competence in basic ICT use but remain unconvinced about fully integrating e-learning without systemic support. This reflects the broader phenomenon observed across many low- and middle-income countries (Barikzai et al., 2024; Nwokike et al., 2023), where adoption of educational technology is shaped less by individual competence and more by institutional capacity and enabling environments. To move forward, the state government and education boards must integrate e-learning into a coherent digital education policy that addresses infrastructure, training, and incentives simultaneously (Keston & Abubakar, 2024). Device distribution without management support or training will not suffice. Teachers' call for training reflects the need for structured, recurring professional development programmes that move beyond technical skills to include digital pedagogy, online assessment, and curriculum integration (Ahmed, 2025). School leaders must also be capacitated to provide consistent support, as their role is pivotal in shaping teachers' adoption behaviours (Nurhikmah et al., 2024). Integrating e-learning content formally into SUBEB and TESCOM curricula can legitimise digital pedagogy and encourage adoption. Thus, this study contributes to the broader discourse on digital education in Nigeria by demonstrating that teacher competence alone does not ensure adoption: enabling environments, institutional support, and infrastructural investment are equally decisive. Addressing these gaps can transform teachers' conditional readiness into sustainable practice, thereby enhancing educational quality and resilience in Kwara State.

CONCLUSION

This study investigated teachers' readiness, challenges, and proposed solutions regarding e-learning adoption in public schools in Kwara State. The most important findings indicate that while teachers demonstrated relatively high levels of technical competence—including proficiency in e-learning tools and the ability to guide students digitally—their attitudinal readiness toward full implementation was notably low. Furthermore, teachers consistently identified a lack of management support, inadequate infrastructure, and limited professional training as the most critical barriers. This juxtaposition of technical readiness with weak attitudinal commitment distinguishes the present results from many prior studies that emphasised lack of competence as the principal challenge. The contribution of this research lies in offering comparative insights between primary (SUBEB) and secondary (TESCOM) teachers, thereby revealing important institutional variations in readiness and priorities. SUBEB teachers stressed curriculum integration as a prerequisite for adoption, whereas TESCOM teachers highlighted infrastructural provision and incentives. By doing so, this study extends the discourse on e-learning adoption beyond generic accounts, demonstrating that teachers' readiness is not uniform but shaped by institutional context and systemic support structures. Future research should pursue three directions. First, experimental or intervention studies are needed to assess the impact of targeted solutions—such as incentives, curriculum reforms, and leadership training—on teachers' adoption behaviours. Second, comparative cross-state or cross-country studies would help

determine whether the conditional readiness observed here reflects a broader pattern in sub-Saharan Africa. The following recommendations were made:

1. The government should make adequate investment in E-learning infrastructure in both primary and senior secondary schools in Kwara State.
2. Teachers' training programmes should be implemented in both primary and senior secondary schools in Kwara State. This will ensure regular E-learning workshops, seminars and conferences for teachers.
3. SUBEB and TESCOM leadership should develop policy support and educational policies that mandate and facilitate e-learning integration in primary and senior secondary schools in Kwara State.

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