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Challenges Faced by Students in using E-Learning Platforms for Teaching and Learning at Shehu Shagari College of Education, Sokoto

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Abstract

This study investigated the challenges faced by students in using e-learning platforms for teaching and learning at Shehu Shagari College of Education, Sokoto. A descriptive survey design of correlational type was employed to examine the relationship between e-learning challenges and students' academic engagement and performance. The population consisted of all NCE students at the college, totaling approximately 2,500 students across all departments. A sample of 300 students was selected using stratified and proportionate random sampling, with strata based on department and level (NCE I, II, and III) as recommended by the research advisor (2006). Data were collected using a structured questionnaire titled *"Students' E-learning Challenges Assessment Questionnaire (SECAQ),"* which included demographic information and 10 items assessing students' e-learning challenges. Responses were measured on a **five-point Likert scale** ranging from Very High Extent (VHE) to Very Low Extent (VLE). The instrument was validated by experts in Educational Technology and Measurement & Evaluation, and reliability was established through the test-retest method with a coefficient of 0.86 and internal consistency assessed using Pearson Product Moment Correlation (PPMC). Data were analyzed using descriptive statistics (mean and standard deviation) to summarize responses, while inferential statistics (PPMC) tested hypotheses at the 0.05 significance level using SPSS version 20. Findings revealed that students face a high extent of

challenges in using e-learning platforms, including technological, infrastructural, and pedagogical barriers. Furthermore, a strong and statistically significant positive relationship was observed between these challenges and students' academic engagement and performance. Based on these findings, the study recommended that the college invest in improving ICT infrastructure, providing stable internet, adequate devices, user-friendly platforms, and conducting regular digital literacy training to enhance students' competence and academic outcomes.

Keywords: E-learning, Academic engagement, Digital literacy, ICT infrastructure, Students' performance.

Introduction

E-learning platforms have become central to educational delivery worldwide, especially following the COVID-19 pandemic that forced institutions to pivot rapidly to online modes of instruction. Globally, digital learning environments such as Moodle, Google Classroom, and Canvas offer flexibility, accessibility, and continuity of instruction beyond traditional classroom boundaries (Devlin Peck, 2024). However, despite the expansion of e-learning and online education, students have encountered notable challenges including limited interaction, technological barriers, and motivational issues that affect learning engagement and outcomes (21kSchool, 2025; Wang et al., cited in PMC articles, 2024). These challenges highlight that although e-learning has considerable potential to transform education, its effectiveness is mediated by contextual and infrastructural factors that vary between regions and populations (Devlin Peck, 2024; 21kSchool, 2025).

A significant global challenge in e-learning is related to **technological access and digital equity**. The digital divide the unequal distribution of internet access, reliable broadband, and quality devices continues to constrain student participation, particularly in low-income and rural areas across the world (Mbonigaba et al., 2025; Digital divide, 2025). Many students struggle with inadequate devices or unstable connectivity, which disrupts participation in virtual lectures, submission of assignments, and synchronous class activities (Mbonigaba et al., 2025). Moreover, lack of digital skills and preparedness for online learning can exacerbate these issues, as some learners are unfamiliar with navigating learning management systems or troubleshooting common platform challenges (Devlin Peck, 2024; PMC research on engagement, 2024).

Beyond infrastructure and access, **learner engagement and interaction** pose ongoing global challenges in e-learning environments. Traditional classroom settings naturally facilitate peer and instructor interactions, immediate feedback, and collaborative learning, whereas online platforms often require students to manage asynchronous

communication and self-paced study. Studies have identified that increases in social isolation, reduced opportunities for collaborative learning, and difficulties in maintaining motivation negatively affect student engagement and academic performance online (21kSchool, 2025; PMC engagement research, 2024). The lack of face-to-face communication, coupled with limited real-time feedback mechanisms, has been shown to reduce students' sense of belonging and participation, further complicating effective learning (21kSchool, 2025).

In the **African context**, educational systems share many of the global barriers but with heightened intensity due to systemic infrastructural deficits and economic constraints. Research on online learning in African higher education indicates pervasive issues such as unreliable electricity, poor internet connectivity, and insufficient ICT infrastructure, which collectively hinder online teaching and learning effectiveness (Yidana, 2025). Additionally, low digital literacy among students and faculty limits the effective utilization of available e-learning tools and reduces the overall quality of virtual learning experiences (Yidana, 2025).

In **Nigeria**, the challenges faced by students in using e-learning platforms reflect both global trends and specific national conditions. Several studies report that unstable internet connectivity, high cost of data, and inconsistent power supply are major impediments to e-learning participation among Nigerian students (Udeze & Adesola, 2024; Ejambportal, 2025). Furthermore, insufficient access to appropriate devices such as laptops or tablets, combined with limited institutional technical support, inhibits students' ability to engage fully with online curricula (Ejambportal, 2025; Udeze & Adesola, 2024). Research also highlights that even when students are aware of e-learning applications, low self-efficacy and digital competence can restrict their ability to navigate and use these platforms effectively (Hamzat, 2025).

The Nigerian experience underscores that **systemic and structural challenges** must be addressed to optimize e-learning outcomes. Policy and institutional strategies are needed to expand broadband infrastructure, subsidize data costs, provide reliable electricity, and strengthen digital literacy training for both students and educators (Udeze & Adesola, 2024; Hamzat, 2025). Addressing these barriers is essential not only for improving access but also for ensuring that e-learning platforms can support interactive, engaging, and inclusive educational experiences. As Nigeria and other developing contexts continue to integrate technology into education, understanding and mitigating the multifaceted challenges faced by students will be critical for realizing the full benefits of e-learning in teaching and learning.

Despite the global and national recognition of e-learning as a viable alternative to traditional classroom instruction, students in Nigerian tertiary institutions, including Shehu Shagari College of Education, Sokoto, continue to face significant challenges that impede their effective use of digital learning platforms. Issues such as unreliable internet connectivity, limited access to digital devices, inadequate technical support, and low digital literacy among students have been reported to hinder meaningful engagement with e-learning resources (Udeze & Adesola, 2024; Hamzat, 2025). These challenges are compounded by factors unique to the local context, including inconsistent power supply and limited institutional capacity to

provide robust online learning support. Consequently, understanding the specific barriers that student at Shehu Shagari College of Education encounter is crucial, as these obstacles may directly affect learning outcomes, academic performance, and the overall effectiveness of e-learning implementation. This study, therefore, seeks to investigate the major challenges faced by students in using e-learning platforms for teaching and learning in this institution, providing an empirical basis for potential interventions and policy improvements.

Statement of the problem

E-learning platforms provide students with seamless access to educational resources, opportunities for collaboration, and flexible learning that complements traditional classroom instruction. In such a scenario, students would reliably connect to digital content, interact with instructors and peers in real time, and effectively manage their learning activities without undue disruption. However, at Shehu Shagari College of Education, Sokoto, the current situation deviates significantly from this ideal. Students frequently encounter unstable internet connectivity, insufficient access to appropriate digital devices, and limited institutional support for navigating online learning environments. In Nigeria generally, research has shown that inadequate technological infrastructure, intermittent power supply, and lack of user training are persistent barriers to effective e-learning implementation in tertiary institutions (Anene, 2014; Eze, 2018; Aboderin, 2015), with similar conditions observed across colleges of education where network connectivity and ICT support remain underdeveloped. These deficiencies undermine students' ability to engage fully with e-learning platforms, resulting in frustration, reduced participation in online learning activities, and an overall decline in academic engagement.

The consequences of these challenges are significant, affecting both academic performance and students' readiness to participate in a digitally mediated educational landscape. For example, poor internet access limits students' ability to download course materials, partake in synchronous classes, or submit assignments on time, thereby widening the performance gap between digitally equipped and digitally marginalized learners. Empirical studies in Nigerian higher education contexts have documented that a substantial proportion of students have only limited or partial access to e-learning tools, with impediments such as erratic power supply, slow network connectivity, and inadequate digital literacy training contributing to ineffective utilization of online resources (Chiaha et al., 2013; Eze, 2018). To address these consequences, scholars advocate for targeted investment in ICT infrastructure, comprehensive digital literacy programmes for students and faculty, and the establishment of robust technical support systems within institutions (Babatunde, 2018; Demissie et al., 2022). Implementing such measures at Shehu Shagari College of Education can enhance students' capacity to use e-learning platforms effectively, reduce educational inequities, and improve overall learning outcomes by aligning digital educational practices with global and national standards of higher education delivery. In light of the above, the study therefore, seek to examine extent challenges faced by students in using e-learning platforms for teaching and learning at Shehu Shagari

College of Education, Sokoto State. However, the study specifically seek to; identify and examine the major challenges students encounter when using e-learning platforms for teaching and learning at Shehu Shagari College of Education, Sokoto.

Research Question

The following research questions were formulated to guide the study;

1. What is the extent of challenges students face in using e-learning platforms for teaching and learning at Shehu Shagari College of Education, Sokoto?

Hypothesis

H_{01}: There is no significant relationship between the challenges faced by students in using e-learning platforms and their academic engagement and performance at Shehu Shagari College of Education, Sokoto.

Theoretical Framework/Literature Review

The study anchored **Technology Acceptance Model (TAM),** developed by Davis (1989), is widely used to understand users' acceptance and utilization of technology in educational contexts. The model is grounded on the assumption that an individual's intention to use a technology is primarily determined by two key perceptions: **perceived usefulness** (the degree to which a person believes that using a particular system would enhance their performance) and **perceived ease of use** (the degree to which a person believes that using the system would be free of effort). Additional assumptions include: (a) external variables such as system design, technical support, and training influence perceived usefulness and ease of use; (b) behavioral intention mediates actual system use; and (c) positive user attitudes toward technology increase adoption likelihood (Venkatesh & Davis, 2000; Alenezi et al., 2022). The TAM has been extensively applied in educational technology research to predict students' engagement with e-learning platforms and to identify barriers to adoption.

The relevance of the Technology Acceptance Model to the study of challenges faced by students in using e-learning platforms at Shehu Shagari College of Education, Sokoto, is substantial. Students' ability and willingness to engage with digital learning tools are shaped by their perceptions of usefulness and ease of use, which may be influenced by inadequate ICT infrastructure, unstable internet connectivity, and limited digital literacy (Udeze & Adesola, 2024; Hamzat, 2025). Applying TAM helps explain why students may resist or underutilize e-learning platforms despite their availability, providing a theoretical basis to investigate technological, institutional, and personal factors affecting adoption. Consequently, insights from TAM can inform strategies to improve system design, provide targeted training, and enhance support structures, thereby mitigating the challenges impeding effective e-learning participation (Alenezi et al., 2022; Venkatesh & Davis, 2000).

Conceptual Definition of E-Learning Platforms

E-learning platforms, also referred to as learning management systems (LMS) or virtual learning environments (VLE), are digital tools or software applications designed to facilitate the delivery, management, and tracking of educational content and learning activities through electronic means (Alqahtani & Rajkhan, 2020). Conceptually, e-learning platforms provide an interactive interface that enables instructors to upload instructional materials, design assessments, facilitate discussions, and monitor student progress, while allowing learners to access content anytime and anywhere, often asynchronously (Shaikh et al., 2022). These platforms are grounded in the principles of learner-centered education, digital accessibility, and interactivity, aiming to enhance learning efficiency, engagement, and collaboration. In essence, e-learning platforms represent a technological shift from traditional face-to-face instruction toward flexible, technology-mediated learning environments that can accommodate diverse learning styles and overcome geographic and temporal limitations (Selim, 2007; Sun et al., 2008).

Types of E-Learning Platforms

E-learning platforms can be categorized into several types, each serving specific instructional and learning needs:

1. **Learning Management Systems (LMS):** LMS platforms, such as Moodle, Blackboard, and Canvas, are comprehensive tools that enable course management, content delivery, grading, and performance tracking (Alqahtani & Rajkhan, 2020).
2. **Content Management Systems (CMS):** CMS platforms focus on content creation, storage, and distribution, allowing educators to organize and share learning materials efficiently (Shaikh et al., 2022).
3. **Massive Open Online Courses (MOOCs):** MOOCs, exemplified by Coursera, edX, and Udemy, offer open-access, large-scale courses online, often delivered by renowned universities or institutions (Zhou et al., 2020).
4. **Synchronous and Asynchronous Learning Platforms:** These include tools like Zoom, Microsoft Teams, and Google Meet, which support live virtual classrooms (synchronous) or pre-recorded lectures and discussion boards (asynchronous) (Shaikh et al., 2022).
5. **Collaborative and Social Learning Platforms:** Platforms such as Edmodo and Google Classroom emphasize peer-to-peer interaction, social learning, and collaborative assignments (Selim, 2007).

Extant literature consistently identifies **technological and infrastructural challenges** as foundational barriers to effective engagement with e-learning platforms. Studies report that unstable internet connectivity, lack of reliable devices, and inadequate ICT infrastructure significantly hinder students' ability to access and participate in online learning activities (Bello & Iddrisu, 2023; Law et al., 2023; Rey-Ronquillo & Machin-Mastromatteo, 2022).

Researchers have documented that weak or inconsistent internet signals inhibit students' participation in synchronous sessions and timely submission of coursework, particularly for learners in under-resourced or remote areas (Bello & Iddrisu, 2023). Furthermore, limited access to appropriate digital devices such as laptops or tablets continues to widen the digital divide, restricting equitable engagement with e-learning environments (Kabir, 2020; Rey-Ronquillo & Machin-Mastromatteo, 2022) and underscoring the need for improved infrastructure and affordable connectivity solutions to support full participation in online education.

A closely related challenge documented in the literature is **limited digital literacy and technical preparedness** among students. Research indicates that many learners lack the requisite skills to navigate e-learning platforms or effectively use digital tools for learning (Alowayr, 2022; Patil & Undale, 2023). Insufficient institutional training and orientation exacerbate these gaps, leaving students to adapt independently to complex online interfaces and software functions, which can diminish the quality of their learning experience (Patil & Undale, 2023). Low digital competency not only affects students' ability to use discussion forums and assessment tools but also contributes to frustration and disengagement, thereby undermining motivation and academic persistence in online settings (Alowayr, 2022).

Another salient theme in the literature is **reduced interaction and engagement** between students and instructors within online learning environments, which has been linked to lower levels of motivation and participation. Systematic reviews report that students often experience a decline in collaborative learning and face-to-face interaction in virtual contexts, which can lead to feelings of isolation and hinder peer support mechanisms (Akpen et al., 2024).

The literature also highlights **environmental and contextual barriers** that shape students' experiences with e-learning, especially in non-institutional settings. Challenges include distractions in home environments, lack of quiet study spaces, and competing domestic responsibilities that disrupt concentration and participation in online learning activities (Aminu & Iddrisu, 2025; Kuo et al., 2020). These external factors, combined with issues like unreliable electricity supply, further complicate students' ability to engage consistently in synchronous and asynchronous e-learning activities.

Finally, empirical studies suggest that **platform design and pedagogical limitations** contribute to student challenges. Research underscores that many e-learning systems are not optimally designed for intuitive use, leading to difficulties in navigation, content access, and submission procedures that frustrate learners and impede effective learning (Akpen et al., 2024; Law et al., 2023). Additionally, the absence of interactive and learner-centred features can diminish student engagement, signaling the need for more user-friendly interfaces and instructional designs that promote active participation, timely feedback, and meaningful interaction (Akpen et al., 2024).

Aworinde (2025) investigated *Empirical Study on Relevance of E-Learning in Business Education in Colleges of Education South West Nigeria.* This study adopted a **survey research**

design with a **population of NCE students** drawn from three colleges of education in South West Nigeria (Federal College of Education Special, Oyo; Federal College of Education Osiele; Federal College of Education, Iwo) and a **sample of 240 respondents**. The data were collected using a **questionnaire** (4-point Likert scale). **Findings** revealed high utilization of word processing and web-based resources for teaching business education but identified significant challenges such as unstable internet connectivity and inadequate e-learning infrastructure. The study **concluded** that while e-learning tools were being used, constraints limit their effectiveness. It **recommended** that institutions improve ICT infrastructure, provide stable internet, and integrate practical e-learning strategies into curricula to enhance teaching and learning.

Enemali (2017) examined *Challenges Associated with the Use of E-Learning Among Pre-Service Business Education Teachers in Colleges of Education in North East Nigeria"* through a **survey design** involving **546 pre-service business education teachers** across five colleges of education. The **instrument** was a validated questionnaire with high reliability (0.89). **Findings** showed that lecturers' preference for traditional lecture methods, lack of hands-on IT training, slow internet bandwidth, nonfunctional e-learning infrastructure, and limited online interaction ranked among the major challenges. The study **concluded** that pre-service teachers experience a high level of barriers to effective e-learning use. It **recommended** that proprietors and administrators commit resources to provide robust infrastructure, training, and organizational capacity to support e-learning implementation.

Adelakun et al. (2022) conducted an empirical study titled *Empirical Study on Electronic Learning System: Benefits, Challenges and Prospects* using a **survey design** with **495 student responses** from a Nigerian higher institution. The **instrument** was a structured questionnaire analyzed with descriptive statistics. **Findings** indicated that a significant portion of students reported weak internet connectivity as the most pressing challenge, followed by limited feedback mechanisms and user difficulties navigating platforms. The study **concluded** that e-learning systems face major technical and usability challenges among learners. It **recommended** investment in standard IT infrastructure, strong internet connections, and user-friendly e-learning platforms to improve adoption and learning outcomes.

Segbenya et al. (2022) explored *Modelling the Perspectives of Distance Education Students Towards Online Learning During COVID-19 Pandemic* with a **descriptive survey design** among **1,061 distance learners** across sixteen regions. Using a **questionnaire**, the study identified core challenges such as limited access to functional devices, inconsistent internet connectivity, and difficulties engaging with online teaching methods. **Findings** revealed that these limitations adversely affected students' capacity to engage fully with e-learning. The researchers **concluded** that technological access and pedagogical issues remain significant constraints for distance learners in online contexts. They **recommended** improvements in device provision, capacity building, and contextual support to enhance online learning experiences. Although this study focused on distance education rather than strictly colleges of education, its findings are relevant to teacher training contexts facing similar technology and engagement challenges.

Ahmad Mohammed Dindin (2024) investigated *"Impact of E-Learning Resources on Students' Academic Performance in Colleges of Education in Yobe State, Nigeria* using a **descriptive survey design** where NCE students assessed the implementation level and effectiveness of e-learning resources. The **instrument** measured aspects such as infrastructure, training, connectivity, and resource accessibility. **Findings** showed that many key elements of e-learning implementation (e.g., adequate bandwidth, timely feedback, updated resources) were insufficient, though students reported some benefits. The study **concluded** that incomplete implementation and lack of institutional support limit the effectiveness of e-learning, impacting academic performance. **Recommendations** included enhancing institutional support, regular training for staff and students, reliable internet access, and dedicated budget allocations for e-learning infrastructure.

Methodology

The study adopted a **descriptive survey design**. The population comprised all NCE students at Shehu Shagari College of Education, Sokoto, totaling approximately 2,500 students across all departments. A **sample of 300 students** was selected using stratified and proportionate random sampling, with strata based on department and level (NCE I, II, and III) as recommended by the research advisor (2006). Data were collected using a structured questionnaire titled **"Students' E-learning Challenges Assessment Questionnaire (SECAQ),"** which captured demographic information and students' e-learning challenges. Responses were measured using a **FIVE-point Likert scale**: Very High Extent =VHE, High Extent = HE, Moderate Extent ME, Low Extent =LE, Very Low Extent =VLE). The instrument consisted of **two sections**. **Section A** captured the demographic data of respondents, while **Section B** contained 10 items assessing students' e-learning challenges. The questionnaire was validated by experts in **Educational Technology** and **Measurement & Evaluation** at Shehu Shagari College of Education, Sokoto. The **test-retest method**, with a two-week interval, was used to establish reliability, yielding a coefficient of 0.86 for SECAQ. Additionally, internal consistency was assessed using **Pearson Product Moment Correlation (PPMC)**. The questionnaires were directly administered to respondents with the assistance of trained research assistants, ensuring **ethical compliance, anonymity, and confidentiality**. **Data analysis** involved descriptive statistics (frequency, mean, and standard deviation) to summarize responses, while inferential statistics, specifically **Pearson Product Moment Correlation (PPMC),** were used to test the hypotheses at a 0.05 level of significance. All analyses were performed using **SPSS version 20**.

Research Question 1

Research question One sought to examine the extent to which students face challenges in using e-learning platforms for teaching and learning at Shehu Shagari College of Education, Sokoto and the results presented in table 1.

Table 1: Mean and standard deviation showing the extent major challenges students face in using e-learning platforms for teaching and learning at Shehu Shagari College of Education, Sokoto

Sno	Item	N	Mean	Std. Deviation	Remarks
1.	I experience frequent **internet connectivity issues** while accessing e-learning platforms.	300	4.22	1.027	High Extent
2.	The **availability of digital devices** (laptop, tablet, smartphone) limits my use of e-learning platforms.	300	3.98	.831	High Extent
3.	**Unstable power supply** affects my ability to participate in online learning activities.	300	3.85	.842	High Extent
4.	I find it difficult to **navigate and use e-learning platforms** effectively.	300	3.93	.936	High Extent
5.	There is **limited technical support** from the institution to help with e-learning challenges.	300	4.27	.979	High Extent
6.	I lack sufficient **digital literacy skills** to fully utilize e-learning tools.	300	3.06	1.062	High Extent
7.	**Slow feedback from lecturers** on assignments or questions affects my learning through the platform.	300	3.78	.956	High Extent
8.	**High cost of internet data** prevents me from accessing e-learning platforms consistently.	300	3.76	.869	High Extent
9.	The **design of the e-learning platform** is not user-friendly, which limits my engagement.	300	4.49	.921	High Extent
10.	I experience **low interaction with peers and lecturers** on the e-learning platform, reducing collaborative learning.	300	3.35	.996	High Extent
	Grand Mean		**3.86**	**0.941**	**High Extent**

Source: Field Survey, 2025

Table 1 presents respondents views regarding the extent to which students face challenges in using e-learning platforms for teaching and learning at Shehu Shagari College of Education, Sokoto. Findings revealed that students at Shehu Shagari College of Education, Sokoto face a high extent of challenges in using e-learning platforms for teaching and learning, as indicated by the grand mean of 3.86, which is above the criterion mean of 3.00. When ranked from highest to lowest, the most pressing challenges include the **user-unfriendly design of the e-learning platform** (Mean = 4.49), **limited technical support from the institution** (Mean =

4.27), and **frequent internet connectivity issues** (Mean = 4.22), highlighting major infrastructural and usability barriers. Other notable challenges include **availability of digital devices** (Mean = 3.98), **difficulty navigating the platforms** (Mean = 3.93), **unstable power supply** (Mean = 3.85), **slow feedback from lecturers** (Mean = 3.78), **high cost of internet data** (Mean = 3.76), **low interaction with peers and lecturers** (Mean = 3.35), and **insufficient digital literacy skills** (Mean = 3.06). The analysis demonstrates that all identified factors exceed the criterion mean, confirming they significantly impede effective e-learning. Therefore, addressing platform design, institutional support, connectivity, and digital literacy is essential to enhance students' engagement, participation, and overall learning experience.

H_{01}: There is no significant relationship between the challenges faced by students in using e-learning platforms and their academic engagement and performance at Shehu Shagari College of Education, Sokoto.

Table 2: Pearson Product Moment Correlation statistics showing relationship between the challenges faced by students in using e-learning platforms and their academic engagement and performance at Shehu Shagari College of Education, Sokoto.

Variables	N	Mean	S.Deviation	*r*-Cal	*p*-Value	Decision
Challenges faced by students in using e-learning platforms	300	3.09	1.002	.805**	.000	H_0 Rejected
Academic engagement and performance		3.20	1.009			

Source: Field survey, 2025 ($\propto = .05$)

The result presented in table 2 shows a strong and statistically significant positive relationship between the challenges faced by students in using e-learning platforms and their academic engagement and performance at Shehu Shagari College of Education, Sokoto, with a correlation coefficient of $r(300) = .805^{**}$, $p < .05$. This finding underscores the significant relationship between the challenges faced by students in using e-learning platforms and their academic engagement and performance at Shehu Shagari College of Education, Sokoto, as the p-value is below the threshold of 0.05. Therefore, the null hypothesis (H_{01}), which posited that no significant relationship between the challenges faced by students in using e-learning platforms and their academic engagement and performance at Shehu Shagari College of Education, Sokoto, is rejected.

Discussion

The findings as shown in table 1 revealed that students at Shehu Shagari College of Education, Sokoto face a high extent of challenges in using e-learning platforms for teaching and learning,

indicating that technological, infrastructural, and pedagogical barriers significantly hinder effective online learning. This connotes with the submission of **Aworinde (2025**), who noted that unstable internet connectivity, lack of adequate devices, and poor digital literacy among students substantially impede their engagement with e-learning platforms. Similarly, **Enemali (2017**) emphasized that insufficient institutional support and limited technical assistance exacerbate students' difficulties, reducing the effectiveness of online learning and limiting active participation. Together, these perspectives support the current findings, highlighting the critical need for improved ICT infrastructure, capacity building, and user-friendly platform designs to enhance students' learning experiences in higher education setting.

The result presented in Table 2 indicates a strong and statistically significant positive relationship between the challenges faced by students in using e-learning platforms and their academic engagement and performance at Shehu Shagari College of Education, Sokoto, suggesting that the greater the challenges encountered, the more they potentially impact students' ability to engage effectively and perform academically. This finding integrate with the ideas of **Adelakun et al. (2022**), who observed that infrastructural and technological barriers, such as unstable internet and limited access to digital devices, directly affect students' participation and learning outcomes in online environments. Similarly, **Ahmad Mohammed Dindin (2024**) emphasized that inadequate technical support and user-unfriendly platforms constrain students' interaction with learning materials, thereby influencing both engagement levels and academic performance. Collectively, these studies support the conclusion that addressing e-learning challenges is critical for enhancing students' engagement and improving their academic success.

Conclusion

Based on the findings, it can be concluded that students at Shehu Shagari College of Education, Sokoto encounter a high extent of challenges in using e-learning platforms, encompassing technological, infrastructural, and pedagogical barriers. Furthermore, the study established a strong and statistically significant positive relationship between these challenges and students' academic engagement and performance, indicating that the difficulties experienced with e-learning platforms directly influence their ability to participate effectively and achieve desired learning outcomes. This underscores the critical need for the institution to address these barriers by improving internet connectivity, providing adequate digital devices, enhancing technical support, and fostering digital literacy, in order to optimize students' engagement, learning experiences, and overall academic performance.

Recommendations

Based on the findings of the study, the following recommendations are proposed:

1. The management of Shehu Shagari College of Education, Sokoto should invest in improving ICT infrastructure by providing stable internet connectivity, adequate digital devices, and user-friendly e-learning platforms. Additionally, establishing a

dedicated technical support team to assist students in navigating the platforms and resolving technical issues will help reduce the challenges students face and improve their engagement and academic performance.

2. The college should organize regular training programs and workshops to enhance students' digital literacy and competence in using e-learning tools effectively. Equipping students with the necessary skills to navigate e-learning platforms and engage actively in online learning will mitigate the identified challenges, promote better academic engagement, and positively influence their overall learning outcomes.

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