

STUDENT PERSPECTIVES ON THE ACCESSIBILITY AND USABILITY OF TUTOR-MARKED ASSIGNMENTS (TMA) ON MOODLE AT THE NATIONAL OPEN UNIVERSITY OF NIGERIA

Oni, L. Olubunmi & Buhari Segun

National Open University of Nigeria

Department of Educational Foundations

Corresponding Author: ooni@noun.edu.ng

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Abstract

This study examines student perspectives on the accessibility and usability of Tutor-Marked Assignments (TMA) on Moodle at the National Open University of Nigeria (NOUN) and their implications for sustainable open education. A mixed-method research design was adopted, guided by three research questions and two hypotheses. One instrument was developed, titled the Tutor-Marked Assignment Accessibility and Usability Scale (TMAAUS), with a reliability coefficient of 0.8. A proportionate stratified sampling technique was used to select students across faculties and programme levels. A sample size of 1,233 students participated in the study. Results showed that over 79% agreed they can log in easily, locate their TMAs without much trouble, and comfortably use their mobile devices for access. Additionally, 76.8% claimed that the platform is easy to navigate, instructions are clear, and the layout is user-friendly. However, over 60% of students encounter issues such as slow loading speeds, system downtime, and internet-related problems, which can make working on TMAs somewhat stressful. The overall F-test result $F(4,1259) = 3.211, p = .012$ indicates that differences between students' level of study and their perceptions of usability are statistically significant, since the p-value is below 0.05. Therefore, it is recommended to improve Moodle's technical infrastructure to reduce downtime and access issues, and to organize regular student training to enhance digital literacy and effective TMA use.

Keywords: Tutor-Marked Assignments (TMAs), Moodle, Accessibility, Usability, Open and Distance Learning (ODL)

INTRODUCTION

Assessment remains a central pillar of educational practice, serving as both a measure of learning outcomes and a means of fostering learner engagement. In higher education, particularly within the framework of open and distance learning (ODL), assessment assumes a unique importance as it provides the primary mechanism through which teaching, learning,

and evaluation intersect. Unlike conventional face-to-face institutions, where continuous interaction with lecturers supports academic monitoring, ODL institutions depend heavily on structured assessment systems to sustain learner motivation, monitor progress, and ensure accountability (Mbweza, 2023). Within the National Open University of Nigeria (NOUN), Tutor-Marked Assignments (TMAs) form a critical aspect of continuous assessment,

helping to bridge the physical distance between learners and instructors while reinforcing the flexibility that defines ODL.

At the National Open University of Nigeria (NOUN), Tutor-Marked Assignments (TMAs) represent a major component of continuous assessment. TMAs are compulsory for all students and typically contribute 30% of a course's overall grade, thereby balancing both formative and summative functions in the assessment process (NOUN, 2023). They are designed to encourage ongoing engagement with learning materials, promote critical thinking, and provide facilitators with opportunities to give feedback that supports student learning. Importantly, TMAs also serve as a prerequisite for students to qualify for end-of-semester examinations, highlighting their pivotal role in academic progression and certification at NOUN (NOUN Portal, 2024).

The delivery and management of TMAs at NOUN are facilitated through Moodle, a learning management system widely used in higher education and ODL contexts for assignment submission, feedback, and grading (Montes, Herrera, & Crisol, 2024). While Moodle offers features that enhance access, flexibility, and learner autonomy, its effectiveness ultimately depends on students' ability to access and navigate the system with ease. In Nigeria, challenges such as unstable internet connectivity, limited digital literacy, and occasional system downtime may affect students' experiences with TMAs, potentially undermining their intended pedagogical benefits (Ifenatuora, 2025). Ensuring that Moodle is both accessible and usable is therefore critical to achieving NOUN's mandate of widening educational access and supporting learner success.

Despite these benefits, the accessibility and usability of Moodle-based TMAs at NOUN remain subjects of concern. Accessibility refers

to the ease with which students can log in, locate assignments, and engage with the platform, regardless of their location, device, or internet connection. Usability, on the other hand, pertains to the intuitiveness, efficiency, and satisfaction derived from using Moodle to complete TMAs (Mtebe & Sirbu, 2021). Studies across Africa suggest that while Moodle has considerable potential, infrastructural limitations such as unreliable internet connectivity, system downtime, and limited digital literacy often constrain its effectiveness (Olowe & Lawal, 2023; Van der Merwe, 2023). In Nigeria, where many learners depend on mobile devices and contend with erratic electricity supply and weak network signals, these challenges are even more pronounced.

At NOUN, preliminary evidence suggests that many students find Moodle relatively easy to use, with clear instructions, user-friendly layouts, and accessible submission processes. However, others encounter difficulties such as login failures, slow loading speeds, and the inability to access TMAs during system downtimes. These challenges not only frustrate learners but also risk undermining the credibility of continuous assessment in ODL. Moreover, differential experiences have been reported among students based on factors such as gender, level of study, and digital competency (Oladokun, 2022; Tayo, Ajayi, & Bamidele, 2023). Such disparities raise equity concerns and call into question the extent to which Moodle fulfills its promise of inclusivity and learner-centeredness in the Nigerian context.

The problem is further compounded by the limited availability of technical support for students. In many cases, learners facing difficulties with TMA submission or login challenges lack real-time assistance, resulting in missed deadlines and academic setbacks. Additionally, feedback on TMAs is sometimes

delayed or insufficient, denying students the opportunity to reflect on their mistakes and improve their learning. These gaps contradict global best practices in e-learning, where immediate feedback, responsive support systems, and mobile-optimized platforms are considered vital for student engagement and success (Maluleke, 2025).

Therefore, while Moodle has provided a platform for delivering TMAs at NOUN, the extent to which it supports accessibility, usability, and equitable participation requires further exploration. Understanding student perspectives on these issues is essential, not only to highlight strengths but also to identify the constraints that hinder optimal utilization. This is particularly important given NOUN's mandate to democratize access to higher education in Nigeria through ODL. If TMAs, as the backbone of continuous assessment, are not fully accessible or usable, the institution's mission of inclusivity, flexibility, and sustainability may be compromised.

This study thus investigates students' perspectives on the accessibility and usability of Moodle-based TMAs at NOUN, intending to identify strengths, challenges, and implications for sustainable open education. Ultimately, the findings are expected to inform institutional strategies for improving the platform, enhancing student experiences, and reinforcing NOUN's role as Nigeria's foremost provider of open and distance learning.

Statement of the Problem

Tutor-Marked Assignments (TMAs) serve as a vital component of continuous assessment and play a central role in promoting learner engagement within the National Open University of Nigeria's (NOUN) open and distance learning (ODL) framework. Administered via the Moodle platform, TMAs are intended to offer flexible and fair access to assessment tasks that support students'

academic achievement. However, despite evidence that many students find Moodle relatively accessible and user-friendly, persistent challenges undermine its full effectiveness. A significant proportion of learners experience slow loading speeds, system downtime, and internet-related disruptions, which create barriers to smooth participation in TMAs. In addition, disparities in perceptions of usability across levels of study suggest equity concerns, as senior students often face heavier workloads and report greater difficulties. These challenges, if unaddressed, may limit the effectiveness of TMAs in fostering inclusive and sustainable open and distance learning at NOUN. This study, therefore, investigated learners' perspectives on the accessibility and usability of TMAs on Moodle at the National Open University of Nigeria (NOUN) and their implications for sustainable open education.

Research Questions

1. To what extent are Tutor-Marked Assignments on Moodle accessible to students at the National Open University of Nigeria?
2. What are students' perceptions of the usability of TMAs on Moodle for learning and assessment purposes?
3. What challenges do students face in accessing and using TMAs on Moodle, and how can these challenges be addressed?

Hypotheses

H₀₁: There is no significant difference between male and female students' perceptions of the accessibility of TMAs on Moodle at NOUN.

H₀₂: There is no significant difference between students' level of study and their perceptions of the usability of TMAs on Moodle at NOUN

LITERATURE REVIEW

The integration of learning management systems (LMS) such as Moodle into open and

distance learning (ODL) has reshaped assessment practices, particularly in institutions where physical interaction between students and instructors is limited. Globally, Moodle has been widely adopted for its open-source flexibility, user-friendly interface, and capability to support assignment submissions, grading, and feedback (Mtebe & Sirbu, 2021). Within the ODL context, it addresses challenges of distance by creating an interactive platform where assessment and feedback are streamlined. However, the effectiveness of Moodle is not uniform and depends heavily on the technological infrastructure, institutional support, and students' digital competence (Van der Merwe, 2023). Studies in Africa have emphasized both the potential and challenges of Moodle in fostering accessibility and usability. For instance, research in South Africa and Tanzania reveals that Moodle enhances learner autonomy and access to course resources but is often constrained by unstable internet connectivity, limited digital literacy, and inadequate support services (Maluleke, 2025; Mtebe & Sirbu, 2021). Similar challenges have been documented in Nigeria, where infrastructural deficits such as erratic electricity supply and unreliable broadband connections directly affect students' ability to engage effectively with Moodle-based assessments (Olowe & Lawal, 2023).

At the National Open University of Nigeria (NOUN), Tutor-Marked Assignments (TMAs) constitute a central part of the continuous assessment strategy, contributing significantly to student performance and progression (NOUN, 2023). While Moodle has facilitated the digital management of TMAs, mixed experiences have been reported. Some students find the system navigable, efficient, and supportive of independent learning (Oladokun, 2022). Conversely, others struggle with usability barriers such as login failures, slow loading times, and challenges in retrieving feedback (Tayo, Ajayi, & Bamidele, 2023).

These disparities point to the interplay between digital competence, access to technology, and socio-demographic factors in shaping students' perspectives. The literature further highlights the importance of support systems and timely feedback in enhancing the pedagogical value of Moodle-based assessments. According to Montes, Herrera, and Crisol (2024), immediate and constructive feedback fosters reflective learning and improves learner satisfaction. However, in contexts like NOUN, feedback is often delayed, and technical assistance is insufficient, reducing the effectiveness of TMAs as formative tools (Ifenatuora, 2025). This gap is particularly concerning given the centrality of TMAs to academic progression and examination eligibility. Overall, prior studies underscore that while Moodle offers significant potential for enhancing accessibility and usability in ODL settings, infrastructural challenges, digital literacy gaps, and insufficient institutional support limit its effectiveness in Nigeria. Student perspectives are thus crucial in evaluating the strengths and weaknesses of the system, providing evidence to inform policy and practice aimed at achieving more inclusive and effective e-learning.

Theoretical Framework for the Study

This study is anchored in two interrelated theoretical perspectives: the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). The Technology Acceptance Model (TAM), developed by Davis (1989), posits that users' acceptance of technology is influenced primarily by two constructs: perceived usefulness (the extent to which the system enhances performance) and perceived ease of use (the degree of effort required to use the system). In the context of Moodle-based TMAs at NOUN, these constructs are directly linked to usability (how easy it is to navigate and complete TMAs) and accessibility (the ability of students to access the platform regardless of

device, location, or connectivity). Students' perceptions of these factors determine their willingness to engage with the system effectively.

Complementing this, the Unified Theory of Acceptance and Use of Technology (UTAUT) developed by Venkatesh et al. (2003) integrates elements of several technology adoption models. It identifies four key determinants of technology acceptance: performance expectancy, effort expectancy, social influence, and facilitating conditions. Applied to this study, UTAUT highlights how external factors such as institutional support, peer influence, and infrastructural conditions shape students' experiences with Moodle TMAs.

Together, TAM and UTAUT provide a robust lens for examining students' perspectives on the accessibility and usability of TMAs. While TAM emphasizes individual perceptions of ease and usefulness, UTAUT expands this by considering social and institutional contexts. This dual-theoretical grounding enables a holistic understanding of how technological, personal, and contextual factors interact to influence students' engagement with Moodle at NOUN.

METHODOLOGY

A mixed-methods research design was adopted for the study. The target population comprised all students of the National Open University of Nigeria (NOUN). Due to the geographical dispersion of students across Nigeria, a proportionate stratified sampling approach was adopted to ensure representation across nine

faculties of the University, namely: Agricultural Sciences, Arts, Computing, Education, Health Sciences, Law, Management Sciences, Sciences, and Social Sciences, to ensure adequate representation of all academic groups and programme levels (Master's, PGD, PGDE, and Undergraduate). The survey was administered online via a Google Form, and 1,233 students voluntarily participated. One instrument was developed by the researcher, titled the Tutor-Marked Assignment Accessibility and Usability Scale (TMAAUS), with a reliability coefficient value of 0.8. This instrument has five sections. Section A gathered information on students' bio-data, Section B has six items on students' accessibility of TMAs on Moodle, Section C has seven items on students' perceptions of the usability of TMAs on Moodle, Section D has seven items on the challenges students faced in accessing and using TMAs on Moodle, and lastly, Section E contained open ended interview questions to enable students express their experiences as a student of NOUN. The data collected were analysed using descriptive and inferential statistics. Also, thematic analysis was conducted using ATLAS.ti software for the qualitative data collected through the interview.

RESULTS

Research Question 1: To what extent are Tutor-Marked Assignments on Moodle accessible to students at the National Open University of Nigeria?

Table 1: Students' Accessibility of TMAs on Moodle

S/N	ITEMS	Strongly Disagree		Disagree		Agree		Strongly Agree	
		F	%	F	%	F	%	F	%
1	I can easily log in to Moodle to access my TMAs at any time.	190	15	194	15.3	451	35.7	429	33.9
2	TMAs on Moodle are available well ahead of the submission deadline.	232	18.4	243	19.2	461	36.5	328	25.9

3	I can access TMAs on Moodle using my mobile device without difficulty.	196	15.5	214	16.9	428	33.9	426	33.7
4	Internet connectivity does not hinder my access to TMAs on Moodle.	272	21.5	318	25.2	372	29.4	302	23.9
5	Locating TMAs on Moodle is a straightforward process.	186	14.7	216	17.1	484	38.3	378	29.9
6	I rarely experience downtime or technical issues when accessing TMAs on Moodle.	249	19.7	306	24.2	434	34.3	275	21.8

The findings reveal that most students at the National Open University of Nigeria generally find Tutor-Marked Assignments on Moodle accessible, with 69.6% agreeing that they can log in with ease, locate their TMAs without much fuss, and even use their mobile devices comfortably for access. Also, 62.4% of respondents agreed that assignments were usually available well before deadlines, which is reassuring. However, 56.1% pointed out challenges, particularly with internet connectivity and occasional technical issues,

which indicated that while Moodle is largely user-friendly, a smoother online experience would make access even better. Overall, the results revealed encouraging accessibility with a few issues to be attended to.

Research Question 2: What are students' perceptions of the usability of TMAs on Moodle for learning and assessment purposes?

Table 2: Students' Perceptions of the Usability of TMAs on Moodle

S/N	ITEMS	Strongly Disagree		Disagree		Agree		Strongly Agree	
		F	%	F	%	F	%	F	%
1	TMAs on Moodle are easy to navigate and understand.	137	10.8	193	15.3	582	46	352	27.8
2	The instructions for submitting TMAs on Moodle are clear and simple	102	8.1	145	11.5	537	42.5	480	38
3	The design and layout of the TMA section on Moodle are user-friendly.	117	9.3	176	13.9	573	45.3	398	31.5
4	I find it easy to upload and submit my TMAs without errors	135	10.7	148	11.7	504	39.9	477	37.7
5	The platform provides prompt confirmation after TMA submission.	93	7.4	120	9.5	515	40.7	536	42.4
6	Feedback on submitted TMAs is easily accessible on Moodle.	139	11	163	12.9	547	43.3	415	32.8
7	Completing and submitting TMAs on Moodle enhances my learning experience	92	7.3	114	9	576	45.6	482	38.1

The results show that students hold a very positive view of the usability of TMAs on Moodle, with 73.8% of the respondents agreeing that the platform is easy to navigate, the instructions are clear, and the layout feels

user-friendly. Again, 77.6% of the students noted that uploading and submitting assignments is a smooth process, and often accompanied by prompt confirmation, which no doubt adds a sense of reassurance. Feedback

is seen as accessible, and most importantly, completing and submitting TMAs on Moodle is widely perceived as enhancing students' learning experiences. Although a small portion of students expressed minor difficulties, the overall result indicates students' satisfaction.

Research Question 3: What challenges do students face in accessing and using TMAs on Moodle, and how can these challenges be addressed?

Table 3: Challenges Students Faced in Accessing and Using TMAs on Moodle

S/N	ITEMS	Strongly Disagree		Disagree		Agree		Strongly Agree	
		F	%	F	%	F	%	F	%
1	Experience login issues frequently when trying to access TMAs on Moodle.	311	24.6	456	36.1	310	24.5	187	14.8
2	Sudden system downtime prevents me from submitting TMAs on time	316	25	414	32.8	354	28	180	14.2
3	The Moodle platform loads slowly when I try to access TMAs	336	26.6	427	33.8	345	27.3	156	12.3
4	Lack of digital skills makes it difficult for me to use Moodle effectively	518	41	393	31.1	234	18.5	119	9.4
5	I experience stress when completing TMAs on Moodle due to technical issues	377	29.8	415	32.8	308	24.4	164	13
6	There is inadequate technical support from NOUN when I face challenges on Moodle	275	21.8	387	30.6	348	27.5	254	20.1
7	I experience frequent internet-related issues when working on TMAs	354	28	444	35.1	322	25.5	144	11.4

The findings highlight that while Moodle is generally helpful, students do encounter some bumps along the way, particularly with login troubles, slow loading speeds, system downtime, and internet-related hiccups, all of which can make working on TMAs a little stressful at times. A smaller group of 27.9% pointed out challenges linked to limited digital skills and the feeling that technical support from NOUN is not always sufficient. These issues, though not overwhelming, do show that a bit of extra care is needed: improving the reliability of the platform, providing stronger

technical support, and offering digital skill-building opportunities would go a long way in smoothing out the experience. Altogether, the result indicated that even a useful tool like Moodle needs regular polishing to keep it as friendly and accessible as possible.

Hypotheses

Hypothesis 1: There is no significant difference between male and female students' perceptions of the accessibility of TMAs on Moodle at NOUN.

Table 4: Gender-Based Descriptive Statistics for Students' Perceptions of TMA Accessibility on Moodle

Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error
Students' perceptions of the accessibility of TMAs on Moodle	Male	614	16.8111	4.74472	.19148
	Female	650	16.0415	4.55439	.17864

Table 5: Independent Samples t-Test of Gender Differences in Perceived TMA Accessibility on Moodle

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Students' perceptions of the accessibility of TMAs on Moodle	Equal variances assumed	1.035	.309	2.942	1262	.003	.76954	.26157	.25638	1.28269
	Equal variances not assumed			2.939	1250.023	.003	.76954	.26187	.25578	1.28329

The result of the independent samples t-test reveals a statistically significant difference in the perceptions of male and female students regarding the accessibility of Tutor-Marked Assignments (TMAs) on Moodle at NOUN. Although the mean scores show that male students ($M = 16.81$, $SD = 4.74$) reported slightly higher perceptions of accessibility compared to female students ($M = 16.04$, $SD = 4.55$), the difference of 0.77 points was confirmed to be significant ($t = 2.94$, $df = 1262$, $p = .003$). Since the p-value is below the 0.05 threshold, the null hypothesis (H_{01}), which stated that there is no significant difference between male and female students' perceptions, is rejected. This finding suggests that gender

plays a role in how students experience and perceive access to TMAs on Moodle, with male students reporting comparatively greater ease of access than their female counterparts. While the difference is statistically significant, the effect size appears modest, indicating that although gender differences exist, other factors such as digital literacy, internet connectivity, and platform design may have a stronger influence on overall accessibility.

Hypothesis 2: There is no significant difference between students' level of study and their perceptions of the usability of TMAs on Moodle at NOUN.

Table 6: Descriptive Statistics of Students' Perceptions of the Usability of Tutor-Marked Assignments (TMAs) on Moodle by Programme Level at NOUN

Descriptives								
Perceptions of the usability of TMAs on Moodle								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
					Lower Bound	Upper Bound		
100.0	372	21.2930	5.13039	.26600	20.7700	21.8161	7.00	28.00
200.0	297	21.0707	5.26254	.30536	20.4697	21.6717	7.00	28.00
300.0	158	22.0127	4.78584	.38074	21.2606	22.7647	7.00	28.00
400.0	98	19.9592	5.37255	.54271	18.8821	21.0363	7.00	28.00
700.0	339	21.7758	5.28394	.28698	21.2113	22.3403	7.00	28.00
Total	1264	21.3568	5.19913	.14624	21.0699	21.6437	7.00	28.00

Table 7: One-Way ANOVA of Students' Perceptions of the Usability of Tutor Assignments (TMAs) on Moodle Across Programme Levels at NOUN

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	344.731	4	86.183	3.211	.012
Within Groups	33795.350	1259	26.843		
Total	34140.081	1263			

The ANOVA result indicates that students' level of study has a significant effect on their perceptions of the usability of Tutor-Marked Assignments (TMAs) on Moodle at NOUN. The descriptive statistics show some variation across levels: 300-level students reported the highest mean perception score ($M = 22.01$), suggesting a relatively more positive view of usability, while 400-level students had the lowest mean score ($M = 19.96$), reflecting greater dissatisfaction. The overall F-test result ($F(4,1259) = 3.211$, $p = .012$) confirms that these differences are statistically significant, as the p-value is below the 0.05 threshold. Consequently, the null hypothesis (H_{02}), which stated that there is no significant difference between students' level of study and their perceptions of usability, is not accepted. This finding implies that the stage of academic progression influences how students experience Moodle's TMA system, with perceptions possibly shaped by differences in digital confidence, workload, or exposure to the platform over time. Although the statistical difference is modest, it highlights the need for tailored support strategies across different levels of study to ensure consistent usability and engagement with Moodle.

RESULTS FOR THE QUALITATIVE

Suggestions on how NOUN can improve the Moodle-based TMA platform to serve learners better

The learners suggested ways in which NOUN can strengthen its Moodle-based TMA platform to better serve its learners. Two main themes

were identified: improving user experience and accessibility, and enhancing feedback and support systems.

Improve User Experience and Accessibility

The learners suggested that the platform should be made more mobile-friendly and easier to navigate since many learners access TMAs using their phones. Features like offline access, autosave, and clear progress tracking would help prevent disruptions caused by poor internet or technical glitches. This includes the following ways:

1. **Mobile-Friendliness and Accessibility** - One learner noted, "Make the platform more mobile-friendly since many students access TMAs with their phones." Another added, "NOUN can improve the network of the TMA portal so students can have a smooth use of the Moodle."
2. **Offline Access and Stability** - Students highlighted connectivity challenges, with one suggesting, "Allow students to download TMAs and submit responses offline, syncing automatically once reconnected to the internet."
3. **User Interface and Navigation** - The students requested clearer layouts: "Simplify the dashboard so students can easily locate their TMAs, submission deadlines, and grades without going through too many menus."

Enhance Feedback and Support Systems

Students stated that they would benefit from receiving instant and detailed feedback on their TMAs, including correct answers and

explanations, so they can learn from mistakes. Additionally, providing real-time technical support (e.g., a helpdesk or chatbot within Moodle) would ensure quick resolution of login or submission issues. The following were suggested:

- i. **Feedback and Learning Support** - Students requested more guidance: “It would be very helpful if the TMA platform could show us the questions we got right

and those we missed, together with the correct answers.”

- ii. **Technical Support and Help Services** - Many students asked for quicker assistance, as one participant stressed, “Adding a help-desk chat or ticket system within the platform would allow students to resolve technical issues quickly without missing deadlines.”

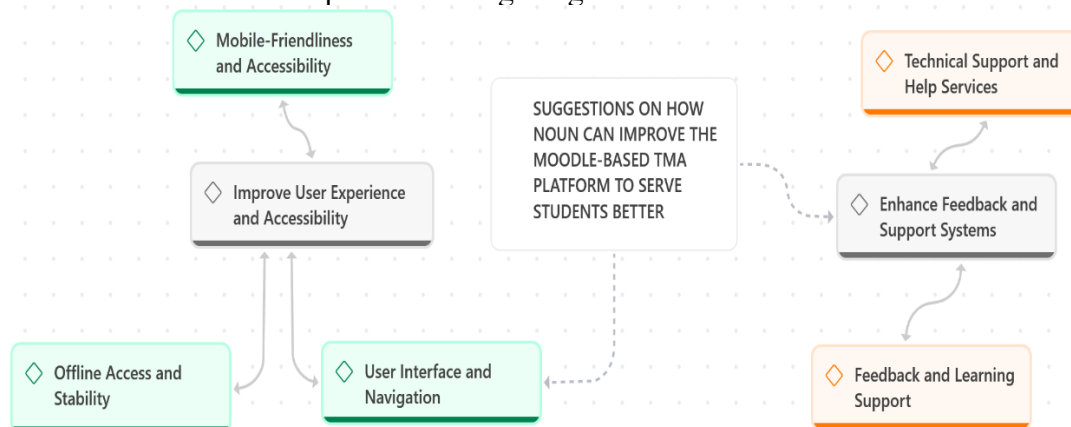


Figure 1: Suggestions on how NOUN can improve the Moodle-Based TMA platform

DISCUSSION OF FINDINGS

The findings of this study reveal that Moodle is largely accessible and usable for Tutor-Marked Assignments (TMAs) at the National Open University of Nigeria (NOUN). A majority of students reported being able to log in, locate TMAs, and access them via mobile devices without difficulty, which aligns with global studies showing that Moodle is designed for flexibility and accessibility in open and distance learning (ODL) environments (Alqurashi, 2022; Tukur & Bala, 2024). However, some challenges, such as internet connectivity issues and occasional technical glitches, still affect smooth access, reflecting persistent infrastructural constraints in Nigerian higher education (Olowe & Lawal, 2023).

With respect to usability, students expressed strong satisfaction with the ease of navigation,

clarity of layout, and smooth submission process, while also acknowledging that TMAs

enhance their learning experiences. This finding is consistent with recent evidence that effective usability of learning management systems (LMS) improves student engagement, assessment efficiency, and academic performance (Mtebe & Sirbu, 2021; Salami & Ajayi, 2023). Importantly, prompt confirmation of submissions and access to feedback were seen as reassuring, supporting the role of LMS platforms in fostering learner autonomy and motivation (Kintu, Zhu, & Kagambe, 2022). Nevertheless, challenges persist, particularly with login difficulties, system downtime, and limited technical support. A smaller portion of students also reported digital skill gaps, emphasizing the need for continuous capacity building. These findings reinforce previous research suggesting that infrastructural improvements, stronger user support, and digital literacy training are crucial for enhancing LMS experiences in ODL systems (Adarkwah, 2021; Mbweza, 2023).

The inferential statistics further highlight equity concerns. Gender differences were significant, with male students reporting slightly higher accessibility perceptions than female students. Although the effect size was modest, this outcome aligns with studies indicating that gender gaps in digital access and confidence remain an issue in technology-mediated education, particularly in African contexts (Oladokun, 2022; Tayo et al., 2023). Similarly, variations across levels of study were evident, with 300-level students perceiving greater usability than 400-level students. This suggests that academic progression and workload may influence students' experiences of Moodle. Prior studies have also noted that senior students often face higher academic demands, which can reduce satisfaction with LMS usability compared to their junior counterparts (Fynn & Essuman, 2022).

The qualitative findings emphasise two main areas where students believe NOUN's Moodle-based TMA platform can be strengthened: improving user experience and accessibility, and enhancing feedback and support systems. Two major themes emerged from the students' perspectives: enhancing user experience and accessibility, and strengthening feedback and support systems.

First, students emphasised the need for a more mobile-friendly and accessible Moodle platform. Given that many ODL learners in Nigeria rely heavily on mobile devices and often face unstable internet connections, features such as offline access, autosave, and auto-syncing are essential to ensuring uninterrupted participation in TMAs. The demand for simplified navigation and clear progress tracking also reflects students' desire for a more seamless user interface. Research supports these concerns, highlighting that poor connectivity, bandwidth limitations, and system downtime remain persistent barriers to effective e-learning in African higher education (Akaeze & Akaeze, 2024; Van der Merwe, 2023).

Enhancing mobile responsiveness and enabling offline functionality would align Moodle with global best practices in LMS usability design (Alqurashi, 2022), making the system more inclusive for learners in low-resource contexts.

Second, the importance of timely and supportive feedback was strongly emphasized. Students expressed a desire for instant, detailed feedback that not only shows whether answers are correct but also provides explanations to guide learning. In addition, they highlighted the need for real-time technical assistance, such as helpdesks or chatbots, to resolve urgent issues like login failures or submission difficulties. These findings align with literature that identifies feedback as a critical pedagogical tool in ODL, helping to reduce learner isolation and improve academic engagement (Kazondovi. Ndlovu, & Chigona, 2022). Similarly, proactive feedback and accessible technical support have been shown to enhance student satisfaction and persistence in distance learning environments (Mbwesa, 2023; Maluleke, 2025). Without such structures, learners risk frustration and attrition, particularly when unresolved technical problems hinder participation.

Importantly, these findings connect with NOUN's broader mandate of promoting inclusivity and expanding educational access through ODL. As a system designed to "reach the unreachable," NOUN must ensure that Moodle supports students regardless of geographical location, socioeconomic status, or digital literacy levels. Prior studies emphasize that strengthening e-learning platforms is critical for reducing inequality and widening participation in higher education in Nigeria (Eyisi, Okolo, Elom, Onuh, Oparaduru, & Mac-Ozigbo, 2021; Yidana, 2023). Addressing the infrastructural and support challenges identified in this study would therefore not only improve students' assessment experiences but also reinforce NOUN's mission of equitable and sustainable education.

In summary, while Moodle is already enabling effective delivery of TMAs at NOUN, targeted improvements are essential. Enhancing mobile accessibility, reducing reliance on unstable internet connections, and embedding offline functions will make the platform more resilient to infrastructural challenges. At the same time, strengthening feedback mechanisms and integrating real-time support will transform TMAs from being merely assessment tools into learning opportunities that build engagement and confidence. These steps will make Moodle more learner-centered, equitable, and aligned with the goals of inclusive and sustainable open and distance learning in Nigeria.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study has shown that Moodle provides an effective platform for delivering Tutor-Marked Assignments (TMAs) at NOUN, with most students finding it accessible and usable for their learning needs. However, persistent challenges such as connectivity issues, limited technical support, and equity gaps highlight the need for strategic improvements. By enhancing mobile accessibility, strengthening feedback and support systems, and addressing infrastructural and digital literacy barriers, NOUN can ensure that Moodle becomes more learner-centered, inclusive, and sustainable. Such improvements will not only strengthen assessment processes but also advance NOUN's mandate of widening access and promoting quality in open and distance learning.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. NOUN should redesign Moodle to be more mobile-friendly, incorporating features such as offline TMA completion, autosave, and auto-syncing. This will ensure that learners in remote or low-connectivity areas

who often rely on mobile devices can fully participate in assessment activities without interruption.

2. To address infrastructural barriers common in ODL systems, NOUN should collaborate with telecommunications providers and invest in regional connectivity solutions. This will reduce login difficulties, system downtime, and access disruptions, thereby supporting flexible learning across diverse geographical locations.
3. Moodle-based TMAs should be enhanced to provide instant, detailed feedback (including correct answers and explanations) and integrated with real-time support such as virtual helpdesks or chatbots. This will foster continuous learning, reduce isolation, and enhance learner autonomy, key principles in ODL practice.
4. NOUN should organise regular digital literacy workshops and capacity-building initiatives, with special focus on students with limited ICT skills, as well as targeted interventions for female and senior-level learners. This will help close equity gaps, promote inclusivity, and sustain student success in an ODL environment.
5. To align with the dynamic nature of ODL, NOUN should establish a system for continuous evaluation of students' experiences on Moodle. Insights from this feedback loop should be incorporated into iterative improvements, ensuring that the platform remains learner-centered, inclusive, and sustainable.

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