

English-Medium Curriculum Delivery Through Learning Management Systems: Undergraduate Students' Experiences of Learning Content Comprehension

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Abstract

Learning Management Systems (LMSs) have become central to curriculum delivery in higher education institutions. However, students in multilingual and resource-constrained contexts continue to face challenges in engaging with online learning materials. This study investigates how undergraduate students at a rural South African university experience English-medium instruction delivered through LMS platforms. Using semi-structured interviews with 20 students across four faculties, the study adopts a qualitative design and applies thematic analysis informed by the Unified Theory of Acceptance and Use of Technology (UTAUT). The findings reveal five interrelated challenges: unstable technological infrastructure, difficulties in comprehending academic English, limited digital literacy and self-efficacy, insufficient institutional support, and restricted peer and instructor engagement. Students employ adaptive strategies such as peer collaboration, code-switching, and multimodal approaches to mitigate these challenges. However, institutional structures do not adequately support these practices. The study highlights the intersection of linguistic and digital inequalities, which collectively constrain meaningful engagement with LMS-based learning. It recommends language-responsive course design, strengthened digital infrastructure, targeted digital literacy support, and inclusive pedagogical approaches to enhance equitable access to online learning.

Keywords: English-medium instruction; curriculum delivery; learning management systems; learning content comprehension; student perceptions; rural universities; applied linguistics; digital equity

1. Introduction

The education sector has undergone a significant transformation due to rapid advances in digital technologies. These changes have introduced new modes of teaching and learning, enabling students to engage with diverse learning environments across institutions (Ghavifekr & Rosdy, 2015; Jones & Pimdee, 2017; Wang et al., 2021). Learning Management Systems (LMSs) have emerged as central platforms for teaching, learning, and assessment, particularly in institutions seeking to widen access and ensure continuity in instruction (Bervell & Umar, 2019; Bao, 2020). The systems enable students to access online platforms for educational resources and collaborate with classmates at their preferred pace. Learning management systems create major obstacles for multilingual students, particularly when they encounter technological limitations in their learning environment (Selwyn, 2016a; Almaiah et al., 2020b; Smith & Rahman, 2021).

The higher education system in South Africa perpetuates social inequalities by requiring students to learn in English, which advantages those who already know the language while disadvantaging those who lack mastery of English (Makeleni, 2024; Mutongoza et al., 2023; van Pinxteren, 2022). English serves as a secondary language for most students, yet its prevalence in academic environments restricts their access to knowledge, preventing them from participating in education and advancing socially (August-Mowers, 2025; Probyn, 2024). LMS-based curriculum delivery presents a dual challenge for students. They must navigate technical requirements while simultaneously engaging with complex academic English embedded in digital materials. This intersection remains underexplored in existing research (Nguyen, 2019a; Selwyn, 2016b; Stolz et al., 2020).

Rural South African universities face challenging conditions as they operate their institutions in this environment. The institutions need to serve student populations from historically marginalised groups, resulting in students who start their studies with insufficient knowledge of both academic English and digital technology (Ajani et al., 2025; Maphalala & Adigun, 2021). Although educational institutions promote digital platforms as tools to democratise education, their systems become exclusionary spaces due to insufficient infrastructure, poor digital skills, and a lack of language support (Bervell et al., 2021; Alotumi, 2022; Selwyn, 2016a). Users experience difficulties due to three main factors: unstable internet access, unfamiliar web systems, and insufficient support for multiple languages (Almaiah et al., 2020a; Smith & Rahman, 2021).

The Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) serves as the primary theoretical framework

which researchers use to study LMS adoption because it explains user behaviour and technology usage, but lacks understanding about how language proficiency affects student access to digital material (Attuquayefo & Addo, 2014; Tarhini et al., 2017). Research on blended and online learning has shown that students need flexible access to resources to succeed, yet only a few studies investigate how language skills affect student participation and critical learning activities within LMS systems (Garrison & Kanuka, 2004; Adigun et al., 2024). The existing gap is significant because the decolonial and multilingual research base has produced evidence that English-medium higher education instruction creates knowledge-based injustice through its linguistic frameworks, which privilege certain language patterns while excluding others.

The LMS course design fails to include translanguaging strategies and mother-tongue-inclusive approaches, thereby creating essential boundaries in university knowledge that determine whose educational needs receive attention (Kretzer & Oluoch-Suleh, 2022; Mutongoza & Makeleni, 2026; Zhou & Landa, 2019). Implementing LMS systems requires three essential components: dependable technology, effective educational materials, and multimodal scaffolding. Rural universities face persistent challenges because they lack essential faculty training and institutional investment, leaving their students with only technical access to content and failing to achieve true cognitive and linguistic development (Ajani & Rathilal, 2025; Maphalala & Adigun, 2021; Selwyn, 2016b; Stolz et al., 2020). Understanding these challenges requires us to focus on the voices of students who have experienced them. Students report a range of challenges in digital learning environments, including cognitive, linguistic, and technological barriers. They also develop various strategies to adapt to these constraints (Makeleni, 2024; Mutongoza et al., 2023). Their viewpoints reveal institutional weaknesses in digital literacy and language support, providing evidence for developing instructional methods and research-based regulations to address both technological and linguistic service gaps.

The study examines the difficulties encountered and the solutions that emerge when English-language instruction is delivered through Learning Management Systems at a South African university in a rural area. The research centres on student learning experiences to create educational insights which will help develop teaching methods, course materials, and institutional policies that promote fairer and more efficient educational practices. The research establishes three guiding questions for the investigation, which follow:

1. How do undergraduate students experience the use of English for curriculum delivery through Learning Management Systems at a rural South African university?
2. What linguistic, digital, and institutional factors shape students' comprehension of learning content within Learning Management Systems?
3. How can language-responsive course design and institutional support enhance students' understanding and engagement in English-mediated online learning environments?

LMS Adoption and Pedagogical Potential in Higher Education

LMS use in higher education transforms both teaching and learning through its ability to deliver educational materials at any time, its capability to enable both live and recorded student-teacher exchanges and its systems that permit students and teachers to work together (Ghavifekr & Rosdy, 2015; Jones & Pimdee, 2017; Wang et al., 2021). Educational institutions use these platforms to develop their educational programmes through blended and online learning programmes (Garrison & Kanuka, 2004; Bao, 2020). The complete success of LMS implementation depends on two factors: the availability of necessary technological systems and users' digital skills, according to research conducted across sub-Saharan Africa (Bervell & Umar, 2019; Almaiah et al., 2020b).

Researchers studying LMS usage have used technology acceptance models to examine how students interact with online systems, primarily the UTAUT framework (Venkatesh et al., 2003; Abbad, 2021; Xue et al., 2024). The models define four elements, which include performance expectancy, effort expectancy, social influence, and facilitating conditions as primary factors that lead to technology adoption (Attuquayefo & Addo, 2014; Tarhini et al., 2017). The explanatory power of these frameworks provides useful insights, but their focus on technical and behavioural elements overlooks how language proficiency affects students' ability to understand and participate in LMS-based educational environments (Selwyn, 2016a; Smith & Rahman, 2021). In low-resource multilingual environments, students face a greater digital divide because they need to use advanced digital materials without receiving proper language support (Alotumi, 2022; Stolz et al., 2020).

English-Medium Instruction and Comprehension Challenges in South African Higher Education

The South African higher education system uses English as its primary language of instruction because students need to understand English to pursue academic studies in other languages across South Africa. Students who study English as their first language face major difficulties when they need to use English for academic purposes, even though it is their second or additional language, depending on their experience with the language. Students who study in online environments face multiple difficulties because their digital learning materials do not support multiple languages, while their academic documents contain complex content that they must learn to understand without in-person teacher assistance (Nguyen, 2019a; Selwyn, 2016b; Omidire & Ayob, 2022).

Students need both pedagogical design and multimodal learning strategies to achieve their learning goals, according to research conducted on online and blended learning programmes. The combination of constructivist frameworks and multimodal content, including textual, auditory, and visual elements, enables students who study through additional languages to achieve better understanding and learning engagement (Ajani & Matiyenga, 2025; Adigun et al., 2024). Faculty members need more training and institutional support to create

digital learning materials that support students with diverse language needs and varying levels of English proficiency, according to Ajani, Rathilal, Maphalala, and Adigun. The result creates a major difference between how people can access content and how they can use language and cognitive skills to interact with that content.

The Digital Divide, Equity, and Rural University Contexts

Students at rural South African universities from historically marginalised backgrounds enter higher education with limited experience in academic English and digital technologies (Ajani et al., 2025; Maphalala & Adigun, 2021). The digital divide and language barriers create multiple challenges for learners who struggle to access content, understand materials, and participate in online learning environments (Bervell et al., 2021; Alotumi, 2022). The solution to these problems needs organisations to focus on three areas: infrastructure, faculty development, and the implementation of language-responsive teaching methods in their course design (Selwyn, 2016a; Stolz et al., 2020).

Decolonial and Multilingual Perspectives on Language and Knowledge Access

Decolonial and postcolonial scholars argue that the dominance of English in higher education creates systemic barriers for students whose linguistic resources are marginalised (Bhambra, 2014; Mbembe, 2016). This dominance limits equitable access to knowledge and participation. Scholars further emphasise the importance of translanguaging and the inclusion of indigenous languages in academic spaces to improve comprehension and epistemic access (Kretzer & Oluoch-Suleh, 2022; Mutongoza & Makeleni, 2026; Zhou & Landa, 2019). Implementing online education methods requires educational institutions to establish academic regulations that define how their academic programmes will be administered to students. Students who face obstacles in English-based learning systems demonstrate that their lived experiences provide compelling evidence of these challenges. Learning environments need to provide students with technical support because they face dual challenges: solving technical issues while reading difficult academic material they need to understand (Makeleni, 2024; Mutongoza et al., 2023; Nguyen, 2019a). The educational process is obstructed in resource-limited settings when educational institutions lack faculty support, language support systems, and educational materials that students can easily access (Almaiah et al., 2020a; Smith & Rahman, 2021). Researchers can identify students' obstacles and their adaptive strategies through student-centred research, creating a solid basis for developing new teaching methods and institutional changes.

Theoretical Framework

The Unified Theory of Acceptance and Use of Technology (UTAUT) serves as the basis for this research, which Venkatesh and his team developed in 2003 to examine how university students use learning management systems. UTAUT combines existing technology acceptance models to define four fundamental factors which users need to accept and utilise technology: performance expectancy, effort expectancy, social influence, and facilitating conditions. The three constructs enable researchers to investigate how students experience LMS technology through three separate dimensions: technological factors, linguistic elements, and institutional aspects.

Performance Expectancy

Students expect their academic performance to improve when they use learning management systems. Students' assessment of LMS materials in English-language programmes determines their capacity to understand academic content, access resources, and achieve their goals throughout the learning process (Abbad, 2021; Bervell & Umar, 2019). The learning system helps students see the benefits of learning by presenting content clearly and providing educational materials that offer necessary support, along with various types of learning resources.

Effort Expectancy

Students develop their opinions about the LMS system's operation through direct interaction with it. Platforms that offer users simple navigation and intuitive interface design, together with easy-to-use educational materials, enable users to participate in active learning activities (Almaiah et al., 2020b; Xue et al., 2024). The situation at rural universities restricts students' access to advanced technology, resulting in increased cognitive difficulty as they navigate complex systems with confusing designs and unorganised content presentation (Selwyn, 2016a; Smith & Rahman, 2021).

Social Influence

Social influence captures the effect of peers, instructors, and institutional norms on students' adoption and use of LMSs. Students who participate in online learning activities show greater involvement when their instructors provide positive feedback, their classmates use the platform appropriately, and the school environment encourages digital participation (Attuquayefo & Addo, 2014; Tarhini et al., 2017). Students experience difficulty obtaining learning resources and understanding academic material when they lack social support and educational guidance, resulting in learning challenges that are especially pronounced in rural areas, where students depend on informal peer networks to fill gaps in official educational systems.

Facilitating Conditions

The technical infrastructure, institutional resources, and organisational support system define all necessary components that enable effective LMS implementation. Students need three essential elements: reliable internet access and functional devices, and IT support to maintain continuous access to course materials (Almaiah et al., 2020a; Bervell et al., 2021). South African rural universities face this situation because their existing systems do not meet requirements, leading to greater difficulties people encounter when trying to read and understand English-medium online content.

The four UTAUT constructs work together to create a unified framework which shows how technological and institutional elements affect student interaction with LMS content. This research goes beyond standard UTAUT usage by adding a language element, as the framework now assesses both technology adoption patterns and how language variables impact understanding outcomes through performance expectancy, effort expectancy, social influence, and facilitating conditions.

2. Method

Research Design

The research used an interpretive qualitative design to examine how undergraduate students perceive English-medium curriculum delivery via LMSs at a South African rural university. The study used a qualitative approach because it enables researchers to understand how participants create personal meanings from their lived experiences (Creswell, 2014; Patton, 2015). The study used student perspectives as its foundation to investigate how different technological, linguistic, and institutional factors interact to create LMS-based learning environments.

Participants and Sampling

The researchers selected 20 undergraduate students from four faculties: Humanities and Social Sciences; Education; Science, Agriculture, and Engineering; and Commerce, Arts and Law. The researchers used purposive sampling to select participants who were studying online modules that required LMS use, had different levels of English language proficiency, and possessed different types of academic and digital knowledge (Alvi, 2016). The researchers used thematic saturation to determine the sample size, which required them to collect data until they identified all main themes in their interviews (Braun & Clarke, 2006). The study required participants to provide written informed consent before participating.

Data Collection

The researchers collected data through semi-structured interviews because this method enables them to explore new findings while maintaining their study framework across different interviewee groups (Creswell & Poth, 2018). The researchers conducted their interviews in English because the instructional language and LMS platforms used in their study used English as their primary communication tool. The audio recordings of the interviews were made after participants granted their approval. The researchers produced written transcripts that contained every spoken word from the audio recordings. Semi-structured interviews were used to allow flexibility while maintaining alignment with the research objectives. This approach enabled participants to elaborate on their experiences, challenges, and adaptive strategies, thereby generating rich qualitative data.

Data Analysis

The researchers used Braun and Clarke's (2006) six-phase thematic analysis framework to analyse their data. The analytical process proceeded through familiarisation with the data, systematic generation of initial codes, identification of candidate themes, review and refinement of themes in relation to the coded extracts and the full dataset, definition and naming of themes, and production of the final analytical narrative. The researchers chose thematic analysis because it offers flexible analysis options, enabling them to identify detailed patterns in participant behaviour while connecting to the UTAUT framework throughout their research (Patton, 2015).

Trustworthiness

The study achieved trustworthiness through multiple methods that met Lincoln and Guba's criteria for credibility, transferability, dependability, and confirmability. The researchers achieved credibility through their extended data engagement and their member-checking process, which allowed participants to verify the correctness of their transcribed answers and the researchers' initial findings. The researchers maintained a complete audit trail documenting all their research methods to demonstrate the study's reliability. The researchers provided thorough descriptions of their research environment, which enabled readers to determine how their results applied to similar situations, according to Shenton 2004. Thematic structure coherence received additional support from the triangulation method, which involved multiple participants and faculty members.

Ethical Considerations

The study followed all approved ethical guidelines governing research involving human subjects, as outlined by Resnik (2018). The researchers obtained institutional ethical approval before beginning data collection. The participants gave their voluntary, informed consent, including the right to withdraw from the study at any time without consequences. At the same time, the researchers maintained their confidentiality and anonymity throughout the study. The researchers used pseudonyms in their reporting to protect participants' identities.

Limitations of the Study

The research contains several limitations which require acknowledgement. The study results remain limited to the single rural university in KwaZulu-Natal, where the researchers conducted their research. The research relied solely on interviews as the data collection method, leaving participants to provide their own accounts because the researchers lacked other methods to verify their statements. The requirement to conduct interviews in English only limited participants from expressing themselves fully because their native languages did not include English, which affected the completeness of the gathered information. The existing limitations offer future research opportunities, including conducting research across multiple locations, using mixed-methods approaches, and collecting data in multiple languages.

3. Results

Thematic analysis generated five overarching themes that describe students' experiences of English-mediated LMS-based learning. These themes relate to technological challenges, language comprehension, digital literacy, institutional support, and social interaction.

Theme 1: Technological Challenges

The participants in the study identified technological problems as the main obstacle to their effective use of LMS materials. The four faculties reported that students faced difficulties with their internet connections and course materials that took too long to load, and their system malfunctions, which showed the increasing extent of infrastructural inequality between different areas of South African rural higher education (Almaiah et al., 2020b; Bervell et al., 2021; Selwyn, 2016a). The students explained that their need for reliable internet service created problems, which included delayed access to learning materials, missed submission deadlines, and interruptions to their participation in time-sensitive learning activities (Selwyn, 2016b; Bao, 2020). The UTAUT framework shows that these experiences directly affect effort expectancy. The participants who faced ongoing connectivity problems together with complicated LMS systems experienced higher mental workload, together with mental stress, which led to their decreased interest in course content. The study results support Smith and Rahman (2021), who found that academic progress in low-resource environments faces major obstacles due to technological limitations, and Xue et al. (2024), who established that system usability influences LMS adoption rates. The study participants developed adaptive strategies to deal with the restrictions of their environment by downloading materials when they had internet access and using mobile data on their personal devices.

Theme 2: Language and Comprehension Barriers

Students faced difficulties studying English-medium course materials, which emerged as the main theme across all interviews. The majority of participants reported significant struggles with academic vocabulary, complex sentence structures, and discipline-specific terminology embedded in lecture notes, assessment rubrics, and discussion forum prompts (Makeleni, 2024; Mutongoza et al., 2023). The asynchronous nature of LMS delivery created additional challenges for students, as they needed immediate help from a physical lecturer to address problems with unfamiliar language (August-Mowers, 2025; Probyn, 2024).

Digital content that contained excessive text without visual or auditory support made it more difficult for students to understand and process information. Students who learn multiple languages need multimodal scaffolding that combines textual, visual, and interactive elements, as supported by research (Ajani & Matiyenga, 2025; Adigun et al., 2024). Students used adaptive strategies that involved informal WhatsApp group discussions in which participants spoke in their native languages about the content, a practice that follows translanguaging methods found in decolonial literature (Turner, 2023; Zhou & Landa, 2019). The workaround methods in the system lacked formality and institutional support, underscoring the critical need to develop language-responsive courses.

Theme 3: Digital Literacy and Self-Efficacy

The participants demonstrated that their digital literacy skills were a key factor in their use of the LMS system. Students with prior experience in online courses demonstrated stronger self-directed learning competencies by navigating the platform effectively, completing tasks on time, and engaging with interactive content. Participants who lacked digital skills encountered obstacles when attempting to complete fundamental activities, including submitting assignments, finding resources, and using discussion features (Kent & Giles, 2017; Alotumi, 2022). The deficiencies led people to estimate their effort requirements higher. At the same time, they used the LMS less, according to the research results, which showed that digital literacy is a mandatory requirement for successful LMS use, according to Selwyn (2016a) and Bervell and Umar (2019).

Participants who created adaptive technical solutions through peer-shared tutorials, platform help functions, and independent navigation practice saw improvements in self-efficacy and longer course participation. Consistent with the UTAUT framework, students who developed confidence in using the LMS were more likely to engage consistently with course materials (Venkatesh et al., 2003; Abbad, 2021). The results demonstrate that digital literacy training programmes within faculty support and induction programmes lead to better LMS usage across all user groups (Bao, 2020; Wang et al., 2021).

Theme 4: Institutional Support and Resources

Institutional support created different experiences for students, which affected their ability to use LMS content. Students who used online tutorial materials and received timely IT support, and faculty members who taught them platform usage reported positive learning outcomes with LMS (Almaiah et al., 2020a; Bervell et al., 2021). The study found that most participants from remote campuses experienced problems with institutional support because it did not meet their needs, thereby widening the gap between students who understood the material and those who did not (Ajani et al., 2025; Maphalala & Adigun, 2021).

The study results show that the UTAUT facilitating conditions construct needs to be examined, as it directly connects to the study's findings. Students who used offline content repositories and received platform instructions and technical support could study course content and finish their assignments. The research results support Smith and Rahman's (2021) and Stolz et al.'s (2020) findings that, in resource-constrained environments, effective LMS implementation requires establishing institutional support systems to help students who already face disadvantages.

Theme 5: Peer and Social Influence

Social factors influenced participants' LMS usage and understanding of the content. The study groups, which met in person and online, allowed students to share their understanding of the material in their native languages, helping them overcome the English-language requirements of their studies (Attuquayefo & Addo, 2014; Tarhini et al., 2017). The participants explained that peers showed them how to use navigation tools, explained academic materials in simpler terms, and helped them keep studying through tough times by providing emotional support. The peer-mediated learning method serves as a basic level of social support, helping students who lack official institutional resources.

Instructor engagement appeared as a major element in the participants' studies. Students whose lecturers actively participated in online discussion forums, provided timely and substantive feedback, and offered explicit language guidance reported higher levels of performance expectancy and content engagement (Venkatesh et al., 2003; Bervell & Umar, 2019). The students experienced greater disengagement from their studies when instructors did not use the LMS, whereas they had better comprehension when instructors did. The research proves that social and academic networks play an essential role in helping multilingual students succeed with LMS systems in technologically challenging environments (Selwyn, 2016a; Nguyen, 2019a).

4. Discussion

The results indicate that technological barriers such as unreliable connectivity and system inefficiencies increase cognitive load. As a result, students disengage from LMS platforms, particularly in resource-constrained contexts. Thematic analysis of the research results identified five themes that connect to UTAUT constructs while demonstrating that language technology integration extends beyond the boundaries of the standard UTAUT framework. The documented technological challenges, including unreliable connectivity, system failures, and complex interfaces, provide evidence of the infrastructural disadvantages that rural higher education institutions face across sub-Saharan Africa (Almaiah et al., 2020b; Bervell et al., 2021; Selwyn, 2016a). The UTAUT framework recognises these barriers as obstacles to effort expectancy, as students who realise they need to spend more time than expected to navigate the LMS will stop using it (Venkatesh et al., 2003). The research demonstrates that students at the institution use their personal agency to create solutions, including downloading content during periods of internet access, sharing resources through peer networks, and accessing mobile data, thereby demonstrating their ability to overcome challenges. However, this should not replace the need for institutions to build dependable infrastructure.

The research found that language comprehension difficulties are essential factors that warrant revising the UTAUT model for new research. The framework evaluates how users interact with technology. However, it fails to provide a comprehensive assessment of how students' language skills affect their ability to understand educational material delivered through that technology. The study shows that performance expectancy in LMS-mediated environments depends on two main factors: the platform's technical features and the linguistic accessibility of the content. Students who struggle to understand academic vocabulary, complex sentence structures, and specific disciplinary terms in English will experience declines in performance expectancy because of their inability to use technology, regardless of its effectiveness (Makeleni, 2024; Zhou & Landa, 2019). The finding requires researchers to expand technology acceptance frameworks by incorporating applied linguistics components to study multilingual higher education environments.

The different levels of digital literacy among participants establish a connection to UTAUT's effort expectancy and facilitating conditions constructs: students who had previously developed their digital skills showed reduced effort needs and successfully utilised the existing resources, while students with insufficient digital knowledge faced multiple obstacles (Kent & Giles, 2017; Alotumi, 2022). The digital-learning-challenged students who actively sought peer assistance and learned from basic online courses use adaptive methods that align with research on student resilience in low-resource educational settings. The educational system fails to provide digital literacy training throughout the student entry process and throughout continuous educational support, leading students to rely on unstructured learning techniques.

The research results about institutional backing and available resources demonstrate that supporting elements are distributed unevenly across the research campuses. The study shows that academic sites differ in the levels of technical support, offline resource access, and faculty assistance because LMS systems do not ensure equal educational access (Almaiah et al., 2020a; Maphalala & Adigun, 2021). The decolonial movement in South African higher education faces two major challenges: under-resourced campuses force students from historically disadvantaged groups to study less English-language material, thereby exacerbating educational inequality, as the LMS infrastructure acts as a barrier to accessing learning resources (Mbembe, 2016; Turner, 2023).

The research shows that effective learning through LMS systems requires social interaction between students and teachers, as technology alone cannot achieve successful educational outcomes. The peer-mediated translanguaging practices described by participants, discussing content in home languages, co-interpreting academic texts, and sharing navigation strategies, represent informal but effective adaptations to the systemic absence of multilingual instructional design (Zhou & Landa, 2019; Kretzer & Oluoch-Suleh, 2022). LMS course design should establish these practices as official elements through multilingual discussion forums and peer tutoring systems that provide users with essential study materials during their learning process.

The findings show that LMS-based teaching achieves optimal results when educational technologies work together with content that all students can read, and when institutions provide digital literacy support and educational resources. At the same time, social support systems remain in place. The study thus provides a contextually appropriate and linguistically precise version of UTAUT that better fits the actual conditions in resource-limited multilingual higher education settings.

Implications and Recommendations

Implications for Teaching Practice

The findings offer practical benefits for faculty who use LMS systems to deliver curriculum content. Educators must understand the availability of online content, as this determines students' engagement with online materials. This can be examined through three factors: technological access, language skills, and digital literacy capabilities. The instructional design process requires educational professionals to implement linguistic scaffolding, including discipline-specific glossary lists and navigation guidelines, and multimodal content featuring text, audio, and visual elements, together with interactive formative assessments that enable multiple learning stages (Venkatesh et al., 2003; Ajani & Matiyenga, 2025). Faculty development programmes should equip lecturers with the skills to design linguistically responsive digital course materials and to maintain active, supportive presences within online learning environments.

Implications for Institutional Policy

Universities need to make ongoing investments in digital infrastructure to serve students who speak multiple languages and have limited resources, enabling equitable learning outcomes through LMS-based education. The solution requires institutions to establish dependable internet access and operational devices, offline content storage, and effective IT assistance systems (Almaiah et al., 2020b; Bervell et al., 2021). Institutions need to create digital literacy training programmes that first-year students and ongoing student support systems must implement, especially in rural areas where students have not previously learned digital skills (Kent & Giles, 2017; Alotumi, 2022). Higher education quality assurance frameworks need to establish assessment standards which measure linguistic accessibility and multilingual support in all digital educational programmes.

Research Implications

The research study advances educational technology acceptance research by demonstrating that UTAUT-based models must include language as a mediating factor. The researchers studying LMS implementation in multilingual settings must investigate how language proficiency affects students' academic performance and their social interactions, and how institutional support services impact their educational results (Selwyn, 2016a; Bao, 2020). The study requires future research to investigate three specific research methods: multi-site comparative designs and mixed-methods research that use learning analytics and multilingual data collection methods, which enable full expression of participants' experiences.

5. Conclusion

This study demonstrates that undergraduate students at a rural South African university face interconnected challenges when engaging with English-medium LMS-based learning. These challenges include limited technological access, difficulties in understanding academic English, low levels of digital literacy, insufficient institutional support, and restricted social interaction.

The findings extend the UTAUT framework by highlighting language as a critical factor influencing technology use and learning outcomes. Students employ adaptive strategies such as peer collaboration and translanguaging; however, these remain unsupported at the institutional level.

The study recommends integrating language-responsive pedagogy, improving digital infrastructure, implementing structured digital literacy programmes, and strengthening institutional support. Addressing these factors is essential for promoting equitable and effective online learning in multilingual, resource-constrained higher education contexts.

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OAA, SG, and BTG were responsible for study design, data collection, and the draft and revision of the manuscript. All authors read and approved the final manuscript.

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Data sharing statement

No additional data are available.

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