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CASE STUDY

Access to assessment feedback through learning management systems: a case study of open and distributed learning in South African higher education

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ABSTRACT

This qualitative case study explored undergraduate students' experiences accessing assessment feedback through learning management systems at a South African higher education institution. Drawing on Vygotsky's Zone of Proximal Development and Hattie and Timperley's feedback model, the research examined how ten students navigate, interpret, and utilize digital feedback. Semi-structured interviews were analysed thematically, revealing three themes: technological barriers to feedback access, varying comprehension levels, and differential impacts on learning progression. Findings highlighted challenges including digital divide issues, technical literacy gaps, and inadequate scaffolded feedback delivery. The study uniquely combines Vygotskian theory with feedback scholarship, examining how students develop alternative scaffolding strategies when digital systems fail as mediating tools. Implications include recommendations for enhanced LMS design, improved digital literacy support, and contextually responsive feedback frameworks. This research offers particular relevance for learning developers supporting distance students and designing inclusive digital curricula in open and distributed learning contexts.

KEYWORDS: assessment feedback, learning management systems, open and distributed learning, higher education.

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Introduction

The rapid digitalisation of higher education, accelerated by the COVID-19 pandemic, has fundamentally transformed how students' access and engage with assessment feedback (Rapanta et al., 2020). Learning Management Systems (LMS) have become central platforms for delivering educational content and facilitating student-instructor interactions, particularly in open and distributed learning environments (Al-Fraihat et al., 2020). In this context, learning developers and educational advisers play a crucial role in supporting both faculty and students to navigate these digital transitions effectively. In South Africa, where higher education institutions serve diverse student populations with varying levels of technological access and digital literacy, understanding how students navigate assessment feedback through digital platforms has become increasingly critical (Czerniewicz & Brown, 2021).

Assessment feedback serves as a crucial mechanism for student learning and development, providing guidance on performance, identifying areas for improvement, and promoting deeper understanding of subject matter (Hattie & Timperley, 2007). However, feedback delivery through digital platforms presents unique challenges and opportunities, particularly in contexts characterised by socioeconomic disparities and uneven technological infrastructure (Bond et al., 2021).

Open and distributed learning models, which emphasise flexible access to education regardless of geographical location or time constraints, have gained prominence in South African higher education as institutions seek to increase accessibility and accommodate diverse student needs (Zawacki-Richter et al., 2019). These models rely heavily on digital technologies, including LMS platforms, to deliver content, facilitate interactions, and provide assessment feedback. However, the effectiveness of these systems depends significantly on students' ability to access, navigate, and meaningfully engage with digital feedback mechanisms. For learning developers supporting distance education, understanding these accessibility challenges is essential for designing effective curriculum support and student development interventions.

While existing literature extensively documents the digital divide in South African higher education and establishes principles of effective feedback, there remains limited understanding of how these two issues intersect in practice. Specifically, little is known about how students in resource-constrained contexts experience and navigate digital feedback

systems, and what this means for learning development practice. Therefore, this study explored undergraduate students' experiences of accessing assessment feedback through LMS platforms in an open and distributed learning environment. By examining student perspectives, challenges, and strategies for navigating digital feedback systems, this study aimed to provide practical recommendations for improving student access to and engagement with assessment feedback through LMS platforms in South African higher education contexts with specific attention to implications for learning developers, digital learning advisers, and educational development practitioners.

To explore students' experiences of accessing assessment feedback in open and distributed learning context, this research was guided by the following main question: How do students experience accessing assessment feedback through learning management systems in open and distributed learning at a South African higher education institution?

This main question is supported by the following sub-questions:

1. What challenges do students face when accessing assessment feedback through LMS platforms?
2. How do students understand and utilise digital assessment feedback in their learning?
3. What strategies do students develop to overcome barriers in accessing digital feedback?

Literature review

Assessment feedback in higher education

Assessment feedback has long been recognised as a fundamental component of effective teaching and learning in higher education. Sadler (2010) established foundational principles for effective feedback, emphasising the importance of helping students understand performance standards, identify gaps in their current performance, and develop strategies for improvement. Sadler's framework identified three key elements of effective feedback: students must understand the goal or standard being aimed for, be able to compare their current performance with the standard and engage in action to close the gap. This conceptualisation has influenced subsequent research on feedback effectiveness and delivery mechanisms across various educational contexts.

Building on Sadler's work, contemporary research has expanded understanding of feedback beyond simple information transmission to encompass complex interactive processes that involve student agency, engagement, and meaning-making (Carless & Boud, 2018). Carless and Boud (2018) argue that effective feedback requires a shift from viewing feedback as something done to students toward understanding it as a dialogical process requiring active student participation. This perspective emphasises the importance of feedback literacy – students' capacity to make sense of and utilise feedback information effectively.

The quality and timeliness of assessment feedback significantly influence student learning outcomes and satisfaction with educational experiences. Wisniewski et al. (2020) conducted a meta-analysis of 435 studies involving over 56,000 students, confirming that feedback has a substantial positive effect on learning, with an average effect size of d = 0.48. However, their analysis revealed considerable variation in feedback effectiveness, with some forms of feedback showing negative effects on learning. The researchers found that feedback focusing on the task and process levels was most effective, while feedback focusing on self-regulation was moderately effective, and feedback at the personal level was least effective and sometimes detrimental.

Delivering effective feedback in open and distance learning contexts presents distinctive and amplified challenges. The inherent separation between instructors and students in these environments creates significant barriers to timely, personalised feedback delivery, particularly when managing large cohorts of geographically dispersed learners (Carless & Boud, 2018). Unlike traditional face-to-face settings, distance learning environments limit opportunities for immediate clarification and real-time dialogue, making feedback processes more complex and potentially less effective. Furthermore, the emotional dimensions of feedback processes become particularly critical in open and distance learning contexts, where students may already experience feelings of isolation or disconnection from their educational community. Studies suggest that students' emotional responses to feedback are heightened in digital environments, where the lack of immediate human presence can intensify feelings of anxiety, frustration, or defensiveness when receiving critical feedback (Pitt & Norton, 2017). Conversely, positive feedback can provide crucial emotional support and motivation for distance learners who may lack the regular encouragement found in traditional classroom settings. This emotional complexity requires careful consideration in feedback design for

distance learning, as instructors must work deliberately to create supportive, encouraging feedback practices that bridge the physical and psychological distance inherent in these educational models.

Digital divide and access in South African higher education

The concept of the digital divide – referring to disparities in access to and use of digital technologies – is particularly significant in the South African higher education context, where historical inequalities, socioeconomic disparities, and infrastructure limitations create complex challenges for implementing inclusive digital learning initiatives (Czerniewicz & Brown, 2021). The digital divide operates at multiple levels, encompassing not only access to physical technologies but also digital literacy skills, quality of internet connectivity, and the social and economic resources necessary to engage effectively with digital learning environments.

Research on digital access in South African higher education has documented persistent and significant inequalities that affect students' ability to participate fully in digital learning activities. Czerniewicz and Brown (2021) conducted an extensive study of digital inequalities among South African university students, revealing a complex landscape of differential access and capability. Their research found that while most students had access to mobile phones, many relied on these devices as their primary means of internet access, creating significant limitations for engaging with educational content designed for larger screens and more robust computing capabilities. The study revealed that smartphone-dependent students faced particular challenges in accessing and navigating LMS platforms, reading detailed feedback, and completing complex online tasks.

Socioeconomic factors play a crucial role in shaping digital access patterns. Bosch (2017) examined how economic constraints influence students' technology use, finding that data costs represent a significant barrier for many South African students. Students from economically disadvantaged backgrounds often must carefully ration their data usage, limiting their ability to engage fully with online learning materials and feedback systems. This economic constraint creates a situation where students may be able to access basic information but cannot afford to engage in more data-intensive activities such as viewing video feedback, participating in online discussions, or accessing multimedia learning resources. Geographical location adds another layer of complexity to digital access

challenges. Students in rural areas often face additional barriers including limited network coverage, slower internet speeds, and less reliable connectivity (Mbunge, 2020). These infrastructure limitations can prevent rural students from accessing feedback in a timely manner or may result in incomplete access to feedback content due to connection interruptions. The research shows that these geographical disparities in digital infrastructure create systematic disadvantages for rural students in accessing and benefiting from digital feedback systems.

The COVID-19 pandemic served as a critical test of digital infrastructure and revealed the extent of existing inequalities in stark detail. Mbunge (2020) documented how the rapid shift to online learning during COVID-19 lockdowns exposed and exacerbated existing digital divides in South African higher education. In this context, many students lacked the necessary devices, internet connectivity, or suitable study spaces to engage effectively with online learning. The study found that institutions' assumptions about student technology access were often incorrect, with many students unable to participate in online classes or access digital learning materials. This situation had particular implications for assessment feedback, as students who could not access digital platforms were effectively excluded from feedback processes entirely.

Research has also examined the digital literacy dimensions of the digital divide. While many South African students are familiar with social media and basic smartphone applications, they often lack the specific digital skills required for academic technology use (Czerniewicz & Brown, 2021). These skills include navigating complex LMS interfaces, understanding file management systems, utilising academic software applications, and interpreting digital feedback formats. The absence of these skills creates barriers that prevent students from fully utilising available digital learning resources, even when they have adequate technology access. Recent studies have also highlighted how digital inequalities intersect with other forms of disadvantage. Students from historically disadvantaged backgrounds often face multiple, compounding barriers including limited economic resources, inadequate prior educational preparation, and reduced access to technical support (Bosch, 2017). These intersecting disadvantages create complex challenges that cannot be addressed through technology provision alone but require comprehensive approaches that address underlying social and economic inequalities.

The implications of digital divide research for assessment feedback are significant. Studies have shown that students with limited digital access or skills may receive less feedback, may have difficulty accessing feedback that is provided, or may be unable to engage effectively with digital feedback formats (Adnan & Anwar, 2020). These limitations can create cumulative disadvantages that affect student learning outcomes and academic success, potentially perpetuating existing educational inequalities rather than reducing them.

Methodology

Research design

This study employed a qualitative case study design to explore student experiences of accessing assessment feedback through LMS platforms in an open and distributed learning environment. The case study approach was selected as it allows for in-depth examination of a specific phenomenon within its real-world context, providing rich insights into the complexities and nuances of student experiences (Yin, 2018). The study adopted an interpretivist epistemological stance, recognising that knowledge is socially constructed and that understanding student experiences requires attention to their subjective interpretations and meaning-making processes (Alharahsheh & Pius, 2020). This philosophical positioning aligns with the study's focus on exploring how students make sense of their interactions with digital feedback systems within specific sociocultural contexts. The case study focused on undergraduate students enrolled in an open and distributed learning institution in South Africa.

Research setting

The study was conducted at a public higher education institution in South Africa that offers various open and distributed learning programs. The institution serves a diverse student population, including many students from rural areas and economically disadvantaged backgrounds. The institution's LMS platform integrates various tools for content delivery, assessment management, and feedback provision.

The specific program examined in this study is an undergraduate degree program that enrols approximately 500 students annually. Students in this program typically engage with course content primarily through the LMS platform, with assessment feedback delivered through

integrated grading and commenting systems. The program serves students from across South Africa, with varying levels of technological access and digital literacy.

Participants

Ten undergraduate students were purposively selected to participate in this study. Participants were chosen to represent diversity in terms of geographical location, academic year, age, and technological access levels. The sample included six female and four male participants, ranging in age from 21 to 35 years old, enrolled across first through third year of study. Five participants were from rural areas, three from townships in urban areas, and two from urban centres with relatively better infrastructure access. Participants were recruited through course announcements posted on the LMS platform and follow-up emails to students who expressed interest. Recruitment materials explicitly sought students with diverse technological access experiences to ensure representation of various perspectives. All participants were enrolled in the open and distributed learning program and had at least one semester of experience accessing assessment feedback through the LMS platform.

Data collection

Data were collected through semi-structured interviews conducted through MS Teams and telephone calls, depending on participants' technological capabilities and preferences. Interviews were conducted in English, with provisions for code-switching to participants' preferred languages when needed to ensure clear communication. The interview protocol included questions exploring participants' experiences accessing assessment feedback through the LMS, challenges encountered, strategies developed for navigating digital feedback systems, and perceptions of feedback effectiveness. Interview questions included: 'Can you describe a typical experience of accessing feedback on your assignments through the LMS?', 'What challenges, if any, have you encountered when trying to access or understand feedback?', and 'What strategies have you developed to make the most of the feedback you receive?'. Interviews lasted between 45-90 minutes and were audio-recorded with participants' consent.

Data analysis

Interview data were transcribed verbatim and analysed using thematic analysis following Braun and Clarke's (2006) six-phase approach. The analysis process involved familiarisation with the data, initial coding, theme development, theme review, theme definition, and report writing. Vygotsky's Zone of Proximal Development theory and Hattie and Timperley's feedback model guided the analysis process, with particular attention to how participants' experiences related to concepts of mediated learning, feedback effectiveness, and digital scaffolding. During the coding process, initial codes such as 'connectivity problems', 'mobile device limitations', and 'data cost concerns' were iteratively refined and grouped into broader themes. For example, these codes eventually formed part of the theme 'Technological Barriers to Feedback Access'. This iterative process involved continuous comparison between codes and emerging themes, with theoretical frameworks helping to illuminate patterns and relationships within the data. Member checking was conducted with participants to ensure accuracy and authenticity of interpretations. Additionally, peer debriefing with a colleague familiar with digital learning research provided additional validation of emerging themes and interpretations.

Ethical considerations

Ethical approval was obtained from the institutional research ethics committee. All participants provided informed consent, and confidentiality was maintained through the use of pseudonyms. Participants were informed of their right to withdraw from the study at any time without consequences.

Findings

Theme 1: technological barriers to feedback access

All participants reported experiencing various technological barriers that impacted their ability to access assessment feedback through the LMS platform. These barriers ranged from fundamental connectivity issues to more sophisticated usability challenges, creating significant obstacles to effective feedback engagement. The most reported barrier was unreliable internet connectivity, which affected seven of the ten participants. Participants from rural areas faced particularly severe challenges, with participant 1 explaining,

'sometimes I can't access the feedback for days because there's no network coverage in my area. When I finally get online, I have to rush to download everything before the connection drops again'. Participant 8 described similar challenges, 'the internet is very slow here, and sometimes when I'm trying to read the lecturer's feedback, the page doesn't load properly. I might only see half of the comments, and I don't know if there's more that didn't load'. Mobile data costs emerged as another significant barrier, particularly for participants who relied primarily on smartphones for LMS access. Participant 5 explained:

> I have to be very careful about how much data I use because it's expensive. Sometimes I can only afford to quickly check my grades, but I can't spend time reading all the detailed feedback because it uses too much data.

Participants who primarily used smartphones for LMS access reported difficulties with interface design and functionality. The LMS platform was optimised for desktop use, creating navigation challenges on smaller screens. Participant 3 noted, 'when I try to read the feedback on my phone, the text is very small and sometimes the comments are cut off. I have to scroll back and forth to read everything, and sometimes I miss important parts'. Participant 10, who primarily accessed the LMS through public computers at internet cafés, faced additional challenges with inconsistent browser compatibility and system configurations, 'sometimes the feedback documents don't open properly on the computers at the internet café. The browsers are old, and I can't always see the comments that the lecturers have made on my assignments'. Despite having basic computer skills, several participants struggled with specific LMS features and navigation processes required to access feedback effectively. This was particularly evident among older participants and those with limited prior experience with educational technology platforms. Participant 6 described his initial challenges:

> At first, I couldn't figure out how to find the feedback. I could see my grades, but I didn't know that I needed to click on specific links to see the detailed comments. I spent weeks thinking that grades were all the feedback I would get.

Participant 9 faced ongoing challenges with the LMS's file management system, 'sometimes the feedback is in attached files, sometimes it's in comments, and sometimes it's in a separate feedback document. I never know where to look, and I'm always worried that I'm missing something important'.

Theme 2: varying levels of feedback comprehension and utilisation

Participants reported varying experiences with feedback clarity, with some receiving detailed, actionable comments while others received minimal or generic feedback. Participant 2, who generally had positive feedback experiences, noted, 'my lecturers usually provide very detailed feedback with specific suggestions for improvement. They use examples from my work to show exactly what I need to change, which helps me understand how to improve'. In contrast, participant 4 described frustrating experiences with vague feedback, 'sometimes I get comments like 'needs improvement' or 'unclear argument', but I don't understand what specifically needs to be improved or how to make my arguments clearer. The feedback doesn't help me know what to do differently next time'.

Participants varied significantly in their ability to transfer feedback insights to subsequent learning activities and assignments. Those who successfully integrated feedback typically had developed systematic approaches to reviewing and applying feedback suggestions. Participant 6 described his systematic approach:

> I keep a notebook where I write down the main points from each feedback, and I review this before starting my next assignment. This helps me remember what I need to focus on and avoid making the same mistakes again.

In contrast, participant 5 struggled with feedback integration:

> I read the feedback when I get it, but by the time I'm working on the next assignment, I've forgotten what the lecturers suggested. I don't have a good way to keep track of all the different feedback I get from different modules.

Theme 3: differential impacts on learning progression

The third major theme revealed significant variations in how LMS-based feedback impacted participants' learning progression and academic development. These variations appeared to be influenced by the interaction between technological access, feedback quality, and individual student characteristics and circumstances. For participants with good technological access and digital literacy skills, the LMS-based feedback system provided valuable support for learning progression. These participants appreciated the ability to access feedback at their own pace and revisit comments multiple times. Participant 2 explained:

> I really like being able to go back and read the feedback again when I'm working on new assignments. I can also access previous feedback from my phone when

> I'm thinking about a problem or working on something new. It's like having the lecturer's guidance available whenever I need it.

Participant 7 found that digital feedback enhanced her learning through multimedia options:

> Some of my lecturers provide audio feedback, which I find really helpful because I can hear their tone and emphasis. It feels more personal than just reading text comments, and I can listen to it while I'm doing other things.

Conversely, participants who faced significant technological barriers found that the digital feedback system sometimes constrained rather than supported their learning progression. These constraints were particularly evident when technical difficulties prevented timely access to feedback or when feedback format was incompatible with available technology. Participant 1 described how delayed feedback access impacted her learning, 'by the time I can access the feedback, I've already started working on the next assignment. Sometimes the feedback would have been really helpful, but I get it too late to apply it effectively'.

Several participants developed creative compensatory strategies to overcome technological and systemic limitations in accessing and utilising feedback. These strategies demonstrated significant adaptability and resourcefulness, though they also highlighted the additional burden placed on students to navigate system inadequacies. Participant 10 described his systematic approach to maximising limited internet access time:

> When I go to the internet café, I have a checklist of everything I need to download. I get all my feedback, assignment instructions, and course materials in one session, then I can read and study them offline at home.

Participant 5 developed strategies for managing mobile data constraints, 'I screenshot important feedback when I have good connectivity, so I can read it later without using more data. I also copy important comments into my notebook, so I have a permanent record that doesn't depend on internet access'.

Discussion

The findings of this study reveal complex interactions between technological, pedagogical, and contextual factors that influence student experiences of accessing assessment feedback through LMS platforms in South African higher education. Drawing on the theoretical frameworks of Vygotsky's Zone of Proximal Development and Hattie and Timperley's feedback

model, this discussion analyses how these interactions impact learning processes and identifies implications for practice and policy.

Technology as mediating tool: enabling and constraining learning

From a Vygotskian perspective, the LMS platform and its feedback mechanisms function as mediating tools that can either facilitate or constrain learning within students' Zones of Proximal Development (ZPD) (Shabani et al., 2010). Mediating tools are instruments, signs, symbols, or technologies that mediate human cognitive activity and social interaction and ZPD is the distance between what a student can accomplish independently (their actual developmental level) and what they can achieve with guidance and support from more knowledgeable others (Pettersson et al., 2024). The findings demonstrate that the effectiveness of digital tools as mediators is heavily dependent on accessibility and usability factors that vary significantly among students. For participants with good technological access and digital literacy skills, such as participant 2 and participant 7, the LMS-based feedback system functioned as an effective mediating tool that enhanced their learning processes. The ability to access feedback repeatedly, at their own pace, and through multiple modalities aligned well with Vygotsky's emphasis on the importance of appropriate scaffolding in facilitating learning progression (Verenikina, 2010). These participants could effectively utilize the digital feedback to bridge gaps between their current understanding and desired learning outcomes.

However, for participants facing technological barriers, such as participant 1 and participant 8, the same digital tools often functioned as obstacles rather than facilitators of learning. Connectivity issues, device limitations, and interface design problems prevented these students from effectively accessing the mediating support that feedback should provide. This misalignment between tool capabilities and student needs resulted in experiences that fell outside rather than within productive Zones of Proximal Development. The theoretical framework helps illuminate how technological mediation is not neutral but is shaped by broader contextual factors including infrastructure, economic resources, and digital literacy. In the South African context, where historical inequalities continue to influence access to technological resources, the effectiveness of digital learning tools cannot be assumed to be uniform across all student populations.

Feedback quality and effectiveness in digital environments

Applying Hattie and Timperley's feedback model to the findings reveals significant variations in how well LMS-based feedback addressed the three fundamental feedback questions: 'Where am I going?', 'How am I going?', and 'Where to next?' (Wisniewski et al., 2020). The effectiveness of feedback in addressing these questions appeared to be influenced by both the quality of feedback design and students' capacity to access and interpret feedback content. Participants who received detailed, specific feedback that clearly addressed task-level and process-level concerns, such as participant 2, reported better understanding of performance expectations and improvement strategies. This feedback effectively addressed the 'How am I going?' question by providing clear performance information and the 'Where to next?' question by offering specific suggestions for improvement. In contrast, participants who received generic or vague feedback, such as participant 4, struggled to understand their current performance status and develop strategies for improvement. This type of feedback failed to provide adequate scaffolding within students' zones of proximal development and did not effectively address any of the three fundamental feedback questions identified in Hattie and Timperley's model.

The digital delivery medium appeared to both enable and constrain feedback effectiveness. Positive aspects included the ability to provide multimedia feedback, maintain permanent records of feedback interactions, and allow students to access feedback at their own pace (Morris & Chikwa, 2016). However, the asynchronous nature of digital feedback also limited opportunities for clarification and dialogue, which are crucial components of effective feedback processes.

Digital divide and educational equity

The findings highlight how the digital divide creates significant inequities in students' ability to access and benefit from LMS-based assessment feedback (Czerniewicz & Brown, 2021). These inequities operate at multiple levels, including access to technological infrastructure, device capabilities, and digital literacy skills. Infrastructure inequalities, particularly evident among rural participants, created fundamental barriers to feedback access that could not be overcome through individual effort or motivation. These barriers effectively excluded some students from full participation in feedback processes, creating differential learning opportunities based on geographical location and socioeconomic status.

Device limitations added another layer of inequality, with smartphone-dependent participants facing significant disadvantages in accessing feedback designed for desktop interfaces. This finding highlights the importance of responsive design and mobile optimisation in creating equitable digital learning experiences (Bosch, 2017). Digital literacy inequalities, while potentially addressable through support and training, nonetheless created significant barriers for participants with limited prior experience with educational technology platforms. The assumption that students possess adequate digital literacy skills to navigate complex LMS interfaces effectively excluded some participants from full engagement with feedback processes.

Student agency and adaptive strategies

Despite facing significant challenges, many participants demonstrated remarkable agency and adaptability in developing strategies to overcome technological and systemic limitations. These adaptive strategies, while evidence of student resilience and resourcefulness, also highlight the additional burden placed on students to compensate for system inadequacies. The development of compensatory strategies can be understood through the ZPD framework as students' attempts to create alternative forms of scaffolding when the intended mediating tools (LMS feedback systems) fail to provide adequate support (Pham & Usagawa, 2018). Participants such as participant 10 and participant 5 developed systematic approaches to maximise limited access opportunities and create offline backup systems for feedback storage and review. However, the necessity of developing such strategies also represents a form of inequity, as students with better technological access do not need to invest time and effort in creating workarounds for system limitations. This additional burden may impact academic performance and overall learning experiences, even among students who successfully develop adaptive strategies.

Implications for pedagogical practice

The findings have several important implications for pedagogical practice in open and distribute learning environment. First, feedback design must explicitly consider the technological constraints and capabilities of diverse student populations. This includes ensuring that feedback is accessible across different devices and connectivity conditions, and that feedback content is designed to be comprehensible to students with varying levels of

background knowledge. Second, feedback systems should incorporate mechanisms for dialogue and clarification, addressing the limitations of purely asynchronous feedback delivery. This might include scheduled virtual office hours, discussion forums dedicated to feedback questions, or integrated messaging systems that facilitate timely responses to student queries. Third, institutions need to provide comprehensive digital literacy support that goes beyond basic computer skills to include specific training on navigating LMS feedback systems and developing effective feedback utilisation strategies. This support should be ongoing rather than limited to initial orientation programs.

Implications for learning development practice

The findings also have important implications specifically for learning development practitioners, including educational developers, digital learning advisers, and academic support staff working with distance learners. Learning developers can play a crucial role in training faculty to design feedback that is accessible across different technological contexts. This includes workshops on writing clear, specific feedback that explicitly addresses the three fundamental questions identified in Hattie and Timperley's model, guidance on creating mobile-friendly feedback formats, and strategies for providing multimodal feedback options that accommodate different student circumstances. Furthermore, those involved in distance learning curriculum development should explicitly consider feedback accessibility as a design principle. This includes ensuring that feedback mechanisms are integrated thoughtfully into course design, that alternative feedback delivery methods are available for students with limited connectivity, and that assessment schedules allow sufficient time for students with intermittent access to engage with feedback. Lastly, the findings underscore the need for learning developers to advocate for inclusive pedagogical approaches that recognize and accommodate diverse student circumstances. This includes promoting awareness of the digital divide among faculty, encouraging flexibility in feedback delivery methods, and supporting the development of institutional policies that ensure equitable access to feedback.

Limitations

This study has limitations that should be considered when interpreting findings and their implications. The case study design limits generalisability to other contexts and institutions. The findings reflect the specific circumstances of one South African higher education

institution and may not be applicable to other settings with different technological infrastructure, student populations, or LMS platforms. Furthermore, the participant sample, while diverse in terms of demographics and technological access, was relatively small and may not capture the full range of student experiences with LMS-based feedback. Additionally, participants were volunteers who were willing and able to participate in the interviews, potentially excluding students who face the most severe technological barriers. Lastly, the study focused primarily on student perspectives and did not examine instructor experiences or institutional factors that influence feedback design and delivery. A more comprehensive understanding of LMS-based feedback effectiveness would require inclusion of multiple stakeholder perspectives.

Recommendations and implications

Recommendations for practice

Based on the findings and discussion, several recommendations emerge for improving student access to and engagement with assessment feedback through LMS platforms in South African higher education contexts. First, institutions should prioritise infrastructure and accessibility improvements by implementing mobile-optimised LMS designs that function effectively across different devices and connectivity conditions, ensuring that feedback interfaces are responsive, load quickly, and remain functional with limited bandwidth. Additionally, institutions should explore partnerships with telecommunications providers to offer subsidised data packages for educational use. Second, faculty development programs should emphasise feedback design and quality by training educators to provide clear, specific, and actionable feedback that explicitly addresses Hattie and Timperley's three fundamental feedback questions (Wisniewski et al., 2020), including guidance on writing effective digital feedback and utilising multimedia options appropriately.

Furthermore, institutions should implement comprehensive digital literacy support programs that extend beyond basic computer skills to include specific training on LMS navigation, feedback interpretation, and academic technology use, with these programs being ongoing and available in multiple formats to accommodate different student needs and schedules. Finally, alternative access options should be developed to ensure feedback delivery does not rely exclusively on LMS platforms, including SMS-based feedback summaries, downloadable

offline feedback packages, or hybrid delivery systems that combine digital and print options. These multi-faceted approaches recognise that successful digital learning implementation requires addressing technological barriers, pedagogical practices, and diverse student circumstances simultaneously to create more equitable and effective learning environments.

Conclusion

This case study examined South African higher education students' experiences with digital assessment feedback through LMS platforms, revealing significant challenges related to technological access, digital literacy, and feedback design that create learning inequities. While digital feedback systems offer potential benefits, their effectiveness depends critically on addressing technological barriers, ensuring appropriate feedback design, and providing adequate digital literacy support. Using Vygotsky's Zone of Proximal Development and Hattie and Timperley's feedback model as theoretical frameworks, the research highlights the importance of considering contextual factors, particularly the digital divide, in designing inclusive technology integration approaches. This study makes a distinctive contribution to Learning Development scholarship by demonstrating how students develop alternative scaffolding strategies when digital feedback systems fail as mediating tools, offering both theoretical insights into adaptive learning behaviours and practical guidance for supporting diverse learner populations in digital environments. The findings emphasise that successful digital learning implementation requires comprehensive support systems addressing diverse student needs, not just technical solutions, and have implications extending beyond South Africa to other developing countries with similar digital infrastructure and socioeconomic challenges. For learning developers, digital learning advisers, and educational development practitioners, this research underscores the importance of inclusive curriculum design, targeted learner support, and advocacy for equitable feedback practices in distance education contexts. Ultimately, the study calls for coordinated efforts across technological infrastructure development, pedagogical innovation and institutional support to achieve equitable access to quality digital assessment feedback for all students, regardless of their background circumstances.

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