

**USING STUDENT VOICE TO SHAPE ONLINE LEARNING: A
MICROSOFT FORMS SURVEY TO INFORM LMS DESIGN IN A
FOUNDATION PHASE MATHEMATICS MODULE**

TECHNOLOGY-BASED SOLUTIONS FOR HE - PART OF LEARNING AND
TEACHING

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ABSTRACT

The South African higher education (HE) sector has witnessed steady growth in distance learning (DL), reflecting national and global trends towards widening participation. While DL has expanded access, it also brings complex challenges, including digital inequalities, large and diverse cohorts, and limited opportunities for interaction, all of which risk increasing transactional distance and weakening student engagement. In this context, Learning Management Systems (LMSs) are central to how students access teaching resources, and support. Yet, LMSs are often implemented in a “one-size-fits-all” manner, privileging administrative efficiency over responsiveness to the lived realities of students. This study was informed by literature on transactional distance (Moore, 2013), the importance of student voice (Conner, 2022; Kahne et al., 2022), and research on lecturer presence in online learning (McNeill & Bushaala, 2023), all of which underscore the relational and contextual nature of effective online learning environments. The study aimed to investigate how student voice can be systematically incorporated into LMS design to improve engagement, belonging, and learning in a South African private higher education institution.

A descriptive, mixed-methods design was employed. Data were collected via a Microsoft Forms survey comprising 22 questions, administered at the start of a semester to 486 students enrolled in a second-year Foundation Phase mathematics DL module. A total of 246 students participated, yielding a response rate of approximately 50%. Quantitative items captured demographics, access to technology and resources, reasons for selecting DL, communication preferences, and self-assessed mathematics ability, while open-ended items explored challenges and desired forms of support. Quantitative data were analysed descriptively, and qualitative responses were thematically coded using ATLAS.ti.

Findings revealed that most students selected DL for personal reasons, particularly full-time employment and family responsibilities, while institutional drivers included affordability and programme availability. Although the majority reported stable internet access and ownership of laptops, a notable subset faced barriers such as reliance on mobile phones, inconsistent connectivity, or limited digital skills. Students overwhelmingly preferred clear, regular, and concise communication, particularly weekly LMS announcements, and emphasised the value of lecturer presence and timely feedback. Importantly, most challenges described by students were personal rather than institutional, highlighting the need for LMS design and teaching practices that mitigate contextual barriers and strengthen relational engagement. The study demonstrates the potential of student voice as a critical mechanism for shaping online learning environments that are more inclusive, responsive, and effective.

KEYWORDS: distance learning; higher education; learning management systems; South Africa; student voice; teacher education

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INTRODUCTION & BACKGROUND TO THE STUDY

The South African higher education landscape is diverse and complex (Redda, 2024), and many students face significant challenges in accessing higher education (HE). In the latest statistics published by the Council on Higher Education (CHE), it is evident that there is a steady growth in distance learning (DL) in South Africa (DHET, 2023). Whilst this growth has widened access to HE, it also generated new challenges, such as uneven digital access (Reddy Moonasamy & Naidoo, 2022), resource scarcity (Mudau, 2024), diverse linguistic and cultural profiles, large cohorts and varying levels of self-regulation (Queiros & de Villiers, 2016).

Learning Management Systems (LMSs) have become central to HE institutions, as the primary interface between students, lecturers and academic resources. They have the potential to enhance student learning and academic performance, but can also improve or hinder access based on infrastructure and support (Maluleke & Maake, 2025). Reddy Moonasamy and Naidoo (2022) express a need for customised LMSs to cater to local needs, as institutions often use a 'one-size-fits-all' approach in designing LMSs, which prioritises administrative efficiency, and lacks student-voice-based evidence. There is little research on systematically gathering and responding to student perspectives to inform LMS design in this context.

Although student voice has been recognised internationally as a powerful mechanism for improving educational practices and policies (Briffett-Aktaş, 2025; Conner, 2022), its potential is underutilised in South African Higher Education. This study originated from a desire to better understand the needs and preferences of online students enrolled in a second-year Foundation Phase mathematics module at a private higher education institution in South Africa. The author sought to address the abovementioned gaps in research by exploring how student voice, captured through a Microsoft Forms survey, can reveal who DL learners are, the challenges they face, and the support they need. The aim was to collect data directly from students via a Microsoft Forms survey at the start of the semester, and to use these insights to tailor the Learning Management System (LMS) experience to support improved engagement, learning and wellbeing.

PROBLEM STATEMENT

Despite growing DL enrolments, Higher Education institutions often lack detailed, context-specific data on their students' demographics, technological access, preferences and communication needs. Large cohorts, diverse linguistic and cultural backgrounds, and varying levels of technological access complicate efforts to design inclusive and effective online learning environments. The absence of student voice exacerbates challenges experienced in DL. Incorporating student voice can ensure that online learning environments are more inclusive, responsive and supportive of diverse student populations.

Research Objectives

1. To identify the demographics and challenges of online students through student voice.
2. To use this insight to inform the adaptation of the Learning Management System (LMS).

LITERATURE REVIEW

Distance Learning in South Africa

The report *Status of Distance Learning in South Africa: Contemporary Developments and Prospects* (Commonwealth of Learning, January 2022) highlights how the COVID-19 pandemic accelerated the shift to digital and open/distance learning across South African universities, raising critical issues of access, quality, costs, and equity (McKay, 2022). By 2023, 371 592 students were nationally enrolled in DL programmes (DHET, 2023). For many students, DL offers the only viable route into HE due to financial, geographic or employment-related constraints (Ng'ambi et al., 2016).

However, studies have shown that transactional distance negatively impacts student learning. In the context of learning, distance pertains to the geographic, pedagogical, and psychological gap between instructors and students (Moore, 2013). This means a transformative shift has to be driven in order to make DL more equitable. By leveraging digital technologies and addressing existing challenges, there is significant potential to enhance teacher training and broaden educational opportunities across the nation (Timotheou et al., 2023). Ng'ambi et al. (2016) argue that South African HE has been profoundly reshaped by global trends, national development priorities, and local educational imperatives within a digitally networked world. However, despite these transformations, digital inequities persist, leaving gaps in how LMS design addresses the needs of diverse cohorts.

Student Voice in Higher Education

The concept of student voice has gained increasing attention in global higher education discourse as a mechanism for enhancing learning and promoting inclusion, but thus far is underdeveloped. There are a variety of definitions, but in Conner's research (2022), it is understood as a strategy that engages students in sharing their views, which can promote meaningful change in educational practice or policy. He claims that through student voice, teachers can adjust or adapt their practice to meet student needs more effectively. It builds student investment, improves student-teacher relationships and also overall a climate of care and trust (Conner, 2022). However, it is the responsiveness to that student voice that is crucial (Kahne et al., 2022), whereby the students' information and ideas are taken seriously by staff. The results support the idea that responsiveness to student voice can positively impact academic outcomes. By asking about the students' lives, we invite their broader assemblage — family, technology, language etc, — into the curriculum space.

In DL, student voice also plays a particularly important role in counteracting isolation and transactional distance. Efthymiou and Zarifis (2021) found that using students' perspectives into online courses improved both learning quality and student belonging. This is significant as online students often feel loneliness and isolation, impacting their performance (Stone & O'Shea, 2019). Yet, in South Africa, its application in HE remains limited. This gap underscores the relevance of investigating how student voice can be used inform LMS design. Briffett-Aktaş (2025) advises that

“incorporating student voice in HE is a journey that all colleagues globally should be and are participating in”.

Student-Lecturer Relationships

There is widespread agreement that online learning offers flexibility and accessibility, but it often limits opportunities for personalised interaction and support. It is well established that strong student–teacher relationships in younger children have a positive impact on learning, however, there is limited research on student-lecturer relationships in HE. According to Akram and Li (2024), following a study carried out in Pakistan HE, strengthening online learning outcomes requires the establishment of strong student-teacher relationships, and these relationships are also pivotal in enhancing academic motivation. McNeill and Bushaala (2023) found that effective instructor presence fosters trust, satisfaction, engagement, and positive student mindsets, as well as simultaneously reducing stress and anxiety. It is unsurprising that students preferred visible, accessible instructors who connect through prompt communication, constructive feedback, and active listening, whilst disconnected instructor presence caused frustration and negative emotions. “Effective online instructor presence is increasingly vital as remote and hybrid learning expand. However, creating a meaningful instructor presence remains an evolving puzzle requiring learner-centered insights” (McNeill & Bushaala, 2023).

Conceptual Frameworks for LMS Design

Although there are a range of theoretical frameworks that inform online learning design, none of them directly foreground student voice. This study, therefore, employs a conceptual framework, which integrates three constructs shaping online learning, namely student voice, LMS design and student-lecturer relationships.

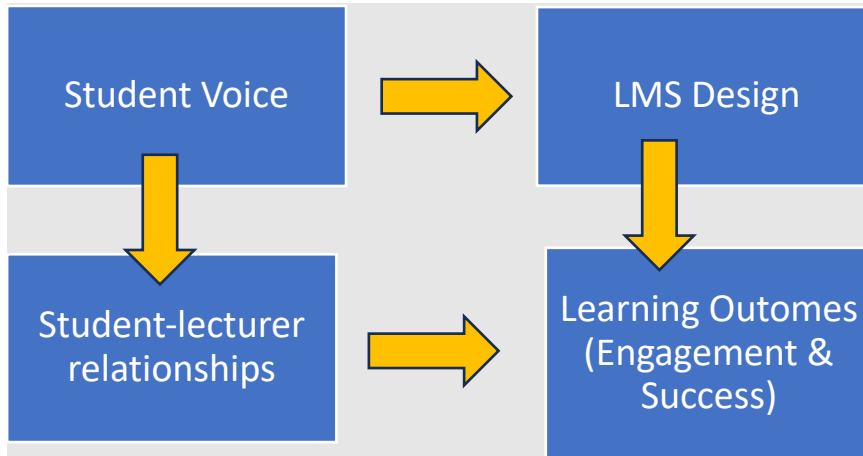


Figure 1: Using student voice to shape online learning

The conceptual framework in Figure 1 illustrates how student voice informs both the design of the Learning Management System (LMS) and the quality of lecturer–student relationships in online higher education contexts. These two dimensions interact to influence student engagement and learning success. The model highlights the centrality of student perspectives in shaping technology-mediated learning environments, particularly within large cohorts in a Foundation Phase mathematics module.

RESEARCH DESIGN METHODOLOGY

This study originated from a desire to better understand the needs and preferences of online students enrolled in a second-year Foundation Phase mathematics module at a private higher education institution in South Africa. A descriptive, mixed-methods design was used so that both quantitative and qualitative data could be collected, thus capturing broad trends in student demographics, access and preferences, as well as providing deeper insights into students' experiences.

Data was collected through a Microsoft Forms survey to ensure easy accessibility and anonymity. This choice of tool was decided by the ease of collecting and analysing data. The survey consisted of 22 questions. 20 of these were closed-ended questions related to demographics, access to resources, preferred communication methods, device use, preference of feedback format, reasons for selecting distance learning, and opinion of students' own mathematical ability, as well as exposure to AI. The two open-ended questions asked students to share their challenges, as well as how they would like to receive support for the module.

486 DL students who were registered for the second-year mathematics module were invited to voluntarily take part in this survey on the LMS, Canvas, through an announcement with the link to the survey. 246 took part, which is roughly 50% of the cohort.

The quantitative data from the closed-ended questions were exported and analysed in Excel, and the qualitative data from the open-ended questions was analysed using ATLAS.ti coding to identify themes and common patterns.

The study adhered to ethical research principles. Ethical clearance was obtained from the institution's research ethics committee before the commencement of the study. In addition, gate-keeper permission was secured from the institution to approach students enrolled in the module. Students were invited to participate via an announcement on the LMS and were informed that participation was voluntary and anonymous. Informed consent was obtained digitally before the survey could be accessed. No identifying information was collected, and responses were reported in aggregate or anonymised form.

FINDINGS AND DISCUSSION

The survey findings provided a rich profile of students enrolled in the second year Foundation Phase mathematics DL module. The findings are presented thematically, combining quantitative results with qualitative insights, and are interpreted in relation to existing literature and the study's conceptual framework.

Student demographics

As indicated in Figure 2 below, the cohort reflected a wide demographic spread, with most students aged 25 – 34. English and Afrikaans were dominant home languages, although multiple other languages were represented. The students were geographically distributed across all provinces, with Western Cape and Gauteng most represented, and few overseas students. The demographic profile reflects national trends in DL, where adult, multilingual, and geographically diverse students are able to access HE. The age and home language of the majority of students underscore the need for LMS platforms that are accessible and multilingual-friendly.

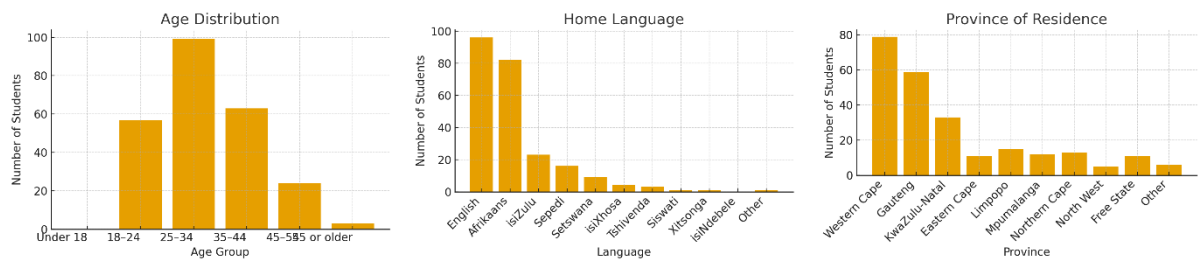


Figure 2: Student demographics

Reasons for choosing DL

As shown in Figure 3, 63% of the respondents chose DL because they were employed full-time. This is, arguably, one of the most important results to consider, as it means that students will be balancing their work lives and studies.

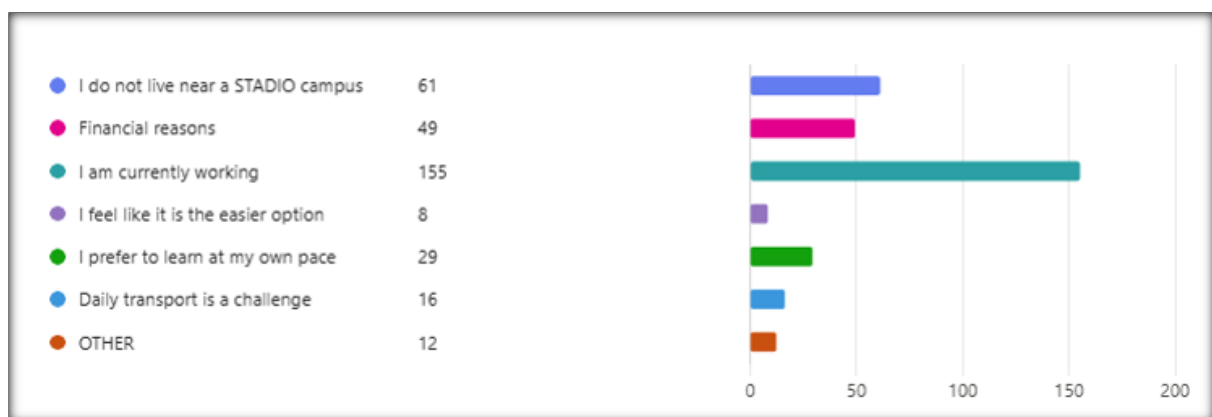


Figure 3: Reasons for choosing DL

This struggle to balance their work and study lives was apparent in their comments:

"It is just me sometimes having a struggle with work and school work balancing everything."

"Keeping up with studies, teaching, House Chores and my Son."

"I have a full time job as a [sic] assistant and is in the afternoon a manger of the preschool aftercare of the same school where i'm [sic] working . I work from 6:45-18:00 at night so when I come home i'm tired and don't always think stright [sic] when i need to study".

"I would say my work is my biggest challenge as I need to prioritize between work admin and my studies."

"Studying after hours after an 8hour day at work and trying to fit in family life."

"It's challenging working full time during the day and at night come home study till midnight , reading and trying to understand and get things done and out."

“To have enough time to balance my life between school and work and family time.”

Access to Technology and Resources

While most students reported using laptops (81%) as their primary study device, five students relied exclusively on mobile phones. Students made comments like, *“Not having my own laptop.”* For some students, even though they have their own laptops, the technology expectations of the degree are challenging:

“I sometimes struggle with the technology they want us to be able to use.”

“To upload storybooks or to put in pictures towards text.”

“Especially when I have to apload [sic] my work I struggle a bit.”

“Creating videos for assignments.”

“Not very clue up with a laptop.”

“Technology problems can create significant barriers online learning.”

“My biggest challenge is using my student portal since is my first time being online student.”

“The videos that I have to upload.”

These findings are in line with those of Maluleke and Maake (2025), who discuss how ccomputer-skills proficiency is essential for effective LMS use among students and educators.

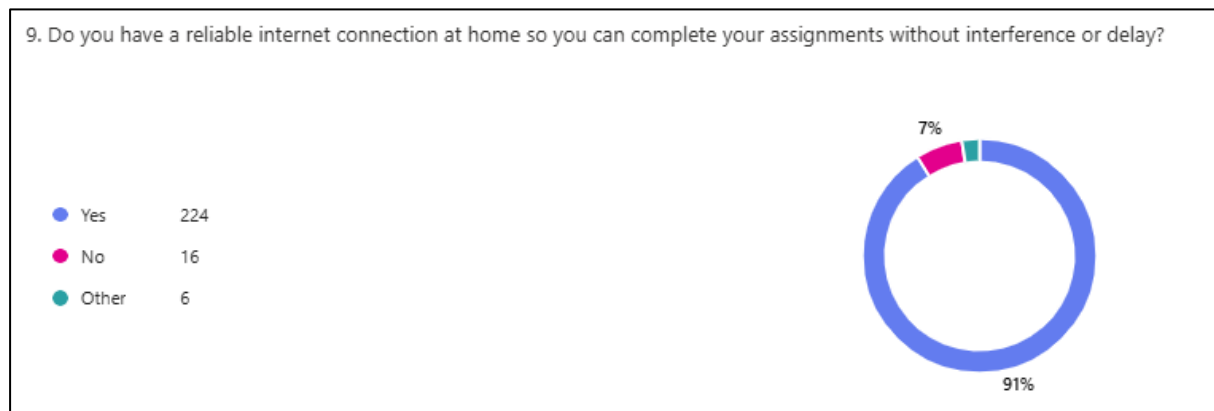


Figure 4: Internet connection.

Surprisingly, the majority of students (91%) indicated that they had stable internet access at home, as seen in Figure 4. However, there were several students who referred to network, data, loadshedding and internet connection as challenges which point to digital inequalities.

For any of the students experiencing difficulty with technology, internet connections or textbook access, the design of the LMS and availability of offline materials were critical to their success.

Communication Preferences

As seen in Figure 5 below, the overwhelming majority of students preferred weekly announcements on the LMS. Students consistently emphasised the importance of clear, regular, and concise communication. Many preferred short announcements delivered through the LMS while some valued peer-support channels such as WhatsApp groups.

A recurring theme was the desire for timely responses from lecturers. This was linked not only to academic clarity but also to feelings of connection and lecturer presence - a relational dimension that students viewed as central to their motivation and persistence in DL. Many students also included the understanding of assignments as a challenge. This is easily addressed on the LMS by scaffolding assignment information.

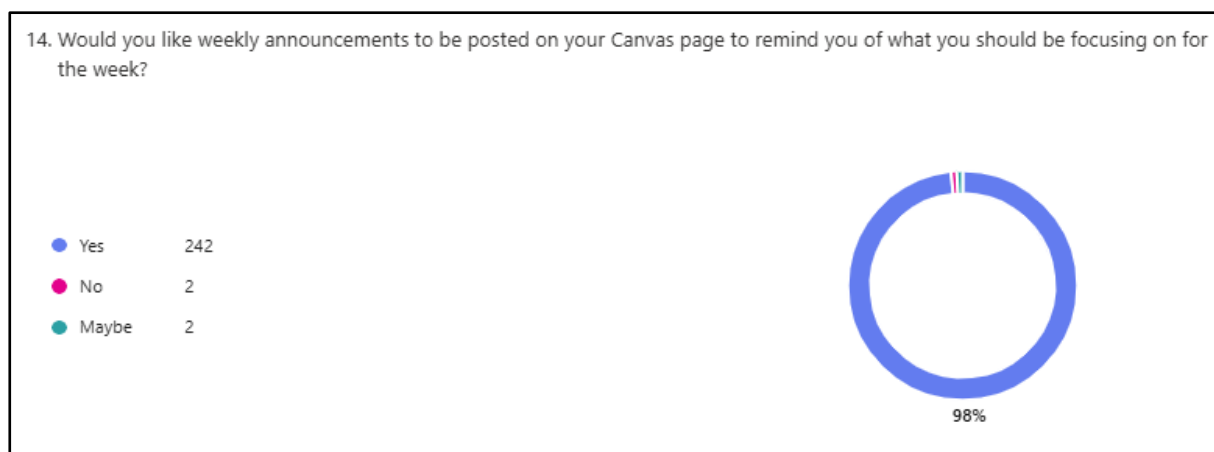


Figure 5: Regularity of Communication

It is apparent that the majority of students' challenges were personal, as opposed to institutional. This again highlights that our role as academics in HE is clearly not just academic.

These findings reinforce the conceptual framework (see Figure 1), which positions student voice as a critical driver of effective online learning design. While some challenges identified by students lay outside institutional control, their perspectives highlight areas where LMS design and lecturer presence can be enhanced to foster engagement and relational connectedness in large online cohorts. This again highlights that our role as academics in HE is clearly not just academic, and that we need to go beyond learner-centred assemblages (du Preez et al., 2025).

RECOMMENDATIONS

This study highlighted the need for practical as well as technology-based solutions. By using student voice, LMS design improvements can be implemented, which could improve clarity, navigation and mobile compatibility. It emphasises the importance of communication strategies, including regular announcements and humanising lecturer presence. Acknowledging external challenges and building flexible systems, we can improve student support.

The importance of understanding the needs and challenges of each separate cohort of students should be considered in DL policies.

CONCLUSIONS

This study demonstrates that student voice provides valuable insights into the lived realities of DL students and can play a pivotal role in shaping LMS design. While many of the challenges identified by students, such as balancing employment, family commitments, and study, lie outside institutional control, LMS design and lecturer presence can mitigate these barriers by fostering clearer communication, relational connection, and flexible access.

The contribution of this study lies in being among the first to systematically use student voice to inform LMS design in a South African private higher education context. It highlights the relational dimensions of technology use, showing that effective LMSs are not merely technical platforms but co-constructed spaces that reflect and respond to student needs.

The study is limited to a single module and a single semester, which restricts generalisability. Future research should adopt longitudinal designs to track the impact of LMS adaptations over time, as well as comparative studies across disciplines and institutions. Such research would deepen understanding of how student voice can drive more inclusive, relational, and context-sensitive online learning environments.

Future research could include longitudinal data on how changes in implementing and designing the LMS affected students.

“When a flower doesn’t bloom, you fix the environment in which it grows, not the flower.”—

Alexander den Heijer

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