International Journal of Studies in Psychology
E-ISSN: 2710-2327, P-ISSN: 2710-2319
Vol. 6, No. 1, pp. 39-45. https://doi.org/10.38140/ijspsy.v6i1.2446
GAERPSY Publishing, 2026

History of the article
Submitted 08 January 2026
Revised 17 January 2026
Accepted 19 January 2025
Published 30 January 2026

Exploring the influence of compulsory adoption of a learning management system on the students' mental well-being at a rural university in South Africa

[1]Oluwatoyin Ayodele Ajani, [2]Samantha Govender, and [3]Bongani Thulani Gamede
[1]Department of Curriculum/Education Studies, University of KwaZulu-Natal, South Africa
[2,3]Department of Educational Foundations and Management, University of Zululand, South Africa

***Abstract*—** The global adoption of technology in teaching and learning has significantly transformed higher education, with the use of various platforms for curriculum delivery influencing students' mental well-being in their learning experiences. This study explores how the mandatory adoption of a learning management system can influence the students' mental well-being at a rural university in South Africa. It adopts a qualitative, phenomenological design. Data were collected through extensive semi-structured interviews. Forty students were purposively selected from a rural university in South Africa. Data were analysed through thematic analysis. The results revealed that technostress, digital fatigue, and resilience could affect the students' mental well-being. The study further acknowledged perceived support sources and their absence within the online learning environment. The findings implied that technology implementation in educational institutions should be more empathetic, culturally responsive, and mindful. This study contributes to the creation of digitally equitable and psychologically supportive learning environments in the Global South.

Keywords: Digital divide, Mental well-being, Psychosocial support, Rural university, Technostress, Technology-mediated learning

To cite this article (APA): Ajani, O. A., Govender, S., & Gamede, B. T. (2026). Exploring the influence of compulsory adoption of a learning management system on the students' mental well-being at a rural university in South Africa. *International Journal of Studies in Psychology, 6*(1), 39-45. https://doi.org/10.38140/ijspsy.v6i1.2446

I. INTRODUCTION

THE swift integration of digital technologies into higher education, driven by the COVID-19 pandemic, has been suggested to improve learning and expand access to education (Bao, 2020). In South Africa, this shift has been evident, with universities quick to adopt Learning Management Systems (LMS) to maintain ongoing processes (Ajani et al., 2025; Mpungose, 2020). But the transition is very uneven. The case for technology-assisted learning in rural universities that support some of the poorest student groups in the country is opposite that of the persistent structural issues (Smith & Rahman, 2021). Such institutions frequently experience a pronounced digital divide, characterised by poor internet connectivity, limited power, and very few students having access to good devices, the problems that have been particularly evident during national load-shedding periods (Ajani, 2025; Khoza, 2024; Faloye & Ajayi, 2022).

As a result, the compulsory use of an LMS in these places is no longer just a part of teaching; it is an important aspect of social interaction (Maphalala & Adigun, 2020). Even though LMS platforms are meant to support education, their use in resource-poor contexts raises serious questions about their overall impact. It is increasingly accepted that EdTechs could be a double-edged sword, opening for more students while at the same time creating new forms of stress and exclusion (Selwyn, 2016; James et al., 2022). The infrastructure that was supposed to close the educational gap might worsen the inequalities that exist and create mental health problems that are unique to the situation.

The issue of mental health of university students is over and above the pandemic recovery; it is a global concern (Naidoo & Cartwright, 2022). In South Africa, students are under even greater pressure due to socio-economic conditions and academic demands. The situation can even get worse if the students have to deal with the problems of a digital learning environment while considering these factors, poor connectivity, high data costs, and gaps in digital skills, because these problems affect very negatively their concepts of competence, autonomy and relatedness, which are the main factors of psychological well-being (Ficapal Cusí et al., 2024; Pedler et al., 2022).

The existing literature about learning management systems has mostly focused on accessibility, acceptance, and the users' intention to behave, which are typically measured through adoption models like UTAUT, while the well-being of students is considered a secondary or implicit outcome (Abbad, 2020; Bervell & Umar, 2019; Xue et al., 2024). Even when global studies have begun to recognise technostress, digital fatigue, and psychological strain associated with heavy online learning, these studies tend to be conducted in well-off educational institutions and hardly ever look at the use of the system as a requirement in constrained environments (James et al., 2022; Ficapal Cusí et al., 2024). In the case of a rural university in South Africa, where digital involvement is determined by continuous infrastructure problems, expensive data, and socio-economic factors, the mental health related to forced LMS engagement is still not well theorized or researched (Faloye & Ajayi, 2022; Khoza, 2024; Naidoo & Cartwright, 2022). This research gap makes it difficult to examine the relationship between global stories of digital transformation and local realities of inequality, underscoring the need for context-sensitive qualitative research that highlights students' emotional and psychological experiences with technology-mediated learning in rural areas. This study thus aims to fill this gap by moving beyond technological metrics into the realm of human experience. It examines a rural South African university as a significant

instance of a low-resource context in the Global South (Adigun et al., 2024; Ajani, 2025; Alghamdi, 2022).

II. LITERATURE REVIEW

The global integration of digital technology into higher education was seen as innovative and positive, often suggesting it would benefit everyone (Almaiah et al., 2020a, 2020b; Alotumi, 2022; Ajani & Matiyenga, 2025; Selwyn, 2016). COVID-19 accelerated this trend: universities replaced face-to-face classes with emergency remote teaching and made Learning Management Systems (LMSs) central infrastructure (Bao, 2020; Bozkurt & Sharma, 2020). In the Global South, especially South Africa, this shift was promoted as providing free education, better teaching, and modernising courses (Smith & Rahman, 2021). Yet this optimism masks major differences across local contexts, especially in rural, under-resourced areas, where infrastructure does not align with digital visions from the Global North.

The use of LMSs by rural universities in the Ground South occurred amid persistent structural inequality, as reflected in a deep and multifaceted digital divide (Alotumi, 2022; Bayaga & du Plessis, 2024; Blignaut et al., 2022). This divide is characterised not only by the lack of devices but also by unreliable internet, unaffordable data costs, frequent power cuts due to load shedding, and a scarcity of suitable physical spaces for e-learning (Faloye & Ajayi, 2022; Khoza, 2024). These challenges are not minor technical issues; they are fundamental, systemic obstacles that reshape the learning process. For students, using the LMS requires daily negotiation and is marked by uncertainty, with access constantly at risk. This reality directly opposes the promise of digital education, seamless, universal access, and instead fosters ongoing dissatisfaction and exclusion (Ajani & Rathilal, 2025).

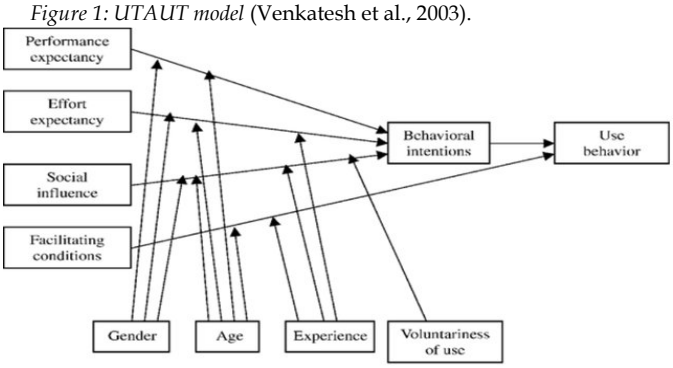
In this environment, the main issue becomes the psychological impact of required digital learning. Technostress, the stress of struggling with technological demands, offers a key perspective (Bervell & Umar, 2019). In education, this includes anxiety over connectivity failures, feelings of incompetence with unstable platforms, and cognitive overload from constant digital coursework (James et al., 2022). Digital fatigue, caused by prolonged screen time and blurred academic-personal boundaries, worsens this fatigue (Ficapal Cusí et al., 2024). These factors undermine self-efficacy, motivation, and mental health, making the LMS a possible source of ongoing psychosocial strain.

On the other hand, the literature portrays the digital world as a well-conceived space that could offer shelter, connection, and a sense of. A strong sense of belonging, the perception of being embraced, appreciated, and involved in an academic community, is a well-known predictor of student retention, engagement, and mental health (Pedler et al., 2022). Digital platforms can theoretically facilitate this through features like asynchronous discussion forums, prompt feedback mechanisms, and collaborative project spaces, potentially mitigating the isolation of remote learning (Mendoza & Venables, 2023; Zheng et al., 2020). The critical, underexplored question, however, is the extent to which an LMS, when implemented within a resource-constrained context characterised by access barriers, can fulfil this connective promise or whether its limitations might instead exacerbate feelings of alienation and disconnect (Mooney & Becker, 2021; Jones & Pimdee, 2017; Tang et al., 2023).

III. THEORETICAL FRAMEWORK

This study used the Unified Theory of Acceptance and Use of Technology (UTAUT) developed by Venkatesh et al. in 2003, as a theoretical foundation (Figure 1). The UTAUT believed that four key factors influence an individual's intention to use a system and their actual usage. These include the performance expectancy belief that using the system improves job or academic performance, Effort Expectancy (perceived ease of use), Social Influence (perception that important others support system use), and Facilitating Conditions (belief in organisational and technical support for system use). This model also considers how variables such as gender, age, experience, and context can influence these relationships.

Figure 1: UTAUT model (Venkatesh et al., 2003).



UTAUT has been widely used in quantitative research in Sub-Saharan Africa to predict LMS usage (Bervell & Umar, 2019; Xue, Rashid, & Ouyang, 2024), but its application here has shifted to a qualitative, in-depth, exploratory approach. The framework thus provides a strong structure for conducting the most important inquiry into the experiential dimensions of LMS use. For example, inquiring Performance Expectancy leads us not only to determine whether students think the LMS results in higher grades, but also whether it makes learning more enjoyable or makes students happier and healthier (Abbad, 2021; Ajani et al., 2025). The same goes for Effort Expectancy, which goes deeper than just measuring and classifying the use as easy or not, allowing us to get into the very details of the emotional and cognitive investments required to handle an unreliable system. As for Social Influence, it provides an opportunity to analyse the effects of relationships with fellow students and teachers in digital spaces (and about these) on one's inner mental and academic identity.

The UTAUT construct of Facilitating Conditions is crucial to the study and plays a pivotal role in it. In the case of a resource-poor environment, the perceived and rightly so, nonexistence of these conditions, dubbed the user experience, which is characterised by unstable electricity, poor Wi-Fi, and no technical support (Bayaga & du Plessis, 2024), becomes a major feature of the user experience (Bayaga & du Plessis, 2024). A qualitative study of this concept allows us to collate the impacts of infrastructural shortcomings at the macro level with their psychological consequences at the micro level, thereby tying together the critique of the system and the lived reality of individual experience. However, a drawback of UTAUT in its original form is that it focuses mainly on the user's intention to use the device, thereby overlooking the affective and psychosocial aspects that are very much present in the educational field and whose impact is amplified by the stakes involved.

To enhance the theoretical foundation of the investigation, this study situates the UTAUT model within a broader psychosocial framework by integrating the perspectives of Self-Determination Theory and resilience theory, thereby addressing student mental health issues that technology acceptance models cannot address sufficiently on their own. It is true that the UTAUT model still plays an important role in describing the relationship between performance expectancy, effort expectancy, social influence, and facilitating conditions as the factors affecting, to a certain degree, students' engagement with the LMS, but on the other hand, it is not able to explain how students feel and how their psychological needs are met in the case of forced usage (Venkatesh et al., 2003; Abbad, 2021).

Self-Determination Theory provides a supplementary perspective, focusing on autonomy, competence, and relatedness, which are the main psychological factors in students' well-being and affect their unstable access, technostress, and mediated interaction in online learning environments (Pedler et al., 2022; James et al., 2022). Besides, resilience theory contributes to understanding how students are able to cope with institutional constraints through building peer relations, using different informal technologies, and employing various coping strategies, and thus, their well-being is viewed not as an individual trait but as a process that is dependent on the social context and relations

(Folabit et al., 2025). Moreover, this integrative approach seems to be corroborated by qualitative research from other universities in Africa and the Global South, where the same duality of stress and adaptive agency generated by LMS use in resource-constrained contexts is reported, thereby challenging the techno-deterministic assumptions prevalent in much of the global literature (Mpungose, 2020; Blignaut et al., 2022; Mooney & Becker, 2021). The study, therefore, by integrating tech acceptance with mental health and resilience concepts, offers a more well-rounded, context-sensitive theoretical account of how the compulsory use of the LMS impacts psychological strain and students' ability to adapt in rural higher education settings.

To sum it up, the study takes an integrative theoretical approach, providing a more comprehensive and humanised analysis. It adds to UTAUT's focus on structuring the alternatives based on studies on student mental health and feelings of belonging, as well as on the psychology of learning in digital environments (Naidoo & Cartwright, 2022; Pedler et al., 2022; Folabit et al., 2025). The connection that is made between a downloading failure (a Facilitating Condition failure) and the feeling of anxiety and low self-worth it causes (a psychological outcome) is facilitated by this combined approach. It makes the research not only about system use but also about users' experience, thus placing student well-being not on a separate list of issues but as an integral impact area of sociotechnical educational design. The joint framework, therefore, provides for a thorough inquiry into how the LMS, as a socio-material participant, mediates between structural inequality and the flourishing of student psychosocial well-being in a rural university setting.

IV. OBJECTIVE OF THE STUDY

This study explores how the compulsory adoption of a Learning Management System influences students' mental well-being at a rural university in South Africa.

V. METHODS

Research approach

A qualitative phenomenological design was used in this research as it is configured to dive into the depth, significance, and intricacy of students' everyday lives, a situation where they have no choice but to use LMS, their mental well-being and spirituality interpreted (Merriam & Tisdell, 2016; Creswell & Poth, 2018).

Research design

This study employed a phenomenological research design, which aims to comprehend the fundamental nature of viewers' lived experiences as they unfold (Merriam & Tisdell, 2016). Since the research goal is to investigate the use of LMS from a subjective and emotional standpoint, this design was considered the best for establishing the basis, subtlety, and significance of the students' narratives (Creswell & Poth, 2018). Thus, the design provided a detailed and subtle analysis of students' emotional and psychological experiences with the compulsory use of LMS, enabling the capture of their interpretations, perceptions, and coping mechanisms. These factors are usually omitted from quantitative or adoption-centred studies, especially in limited-context learning environments (Creswell & Poth, 2018; Merriam & Tisdell, 2016; Braun & Clarke, 2006).

Participants

Forty undergraduate students from the faculties of Commerce, Arts and Law, Science, Agriculture and Engineering, Humanities and Social Sciences, and Education. The criteria specified that participants must have been active users of the university's official LMS (Moodle) for at least one academic year to speak from deep experience, not just from initial impressions. A variety of genders and years of study were considered to present the full spectrum of viewpoints in this study.

The researchers considered a sample size of 40 people sufficient, as data saturation occurred, meaning the interviews did not yield any additional themes or insights. This is a widely known criterion used to argue the sufficiency of qualitative research. Meanwhile, through the application of iterative NVivo-based coding, peer debriefing, and constant comparison to minimise interpretative bias, the analytic rigor and researcher reflexivity were significantly enhanced, rather than relying on the statistical assumption of inter-coder reliability (Braun & Clarke, 2006; Lincoln & Guba, 1985; Merriam & Tisdell, 2016; Nowell et al., 2017).

Data collection instruments

The principal Semi-structured interviews served as the primary data collection method. The interview guide used open-ended questions to allow themes to emerge while still covering key issues (Patton, 2015). The guide drew on key areas of the UTAUT framework and the well-being literature. These included LMS access and reliability (Facilitating Conditions), benefits and hindrances to learning (Performance Expectancy), ease or difficulty of use (Effort Expectancy), online peer and lecturer interactions (Social Influence), and the emotional and psychological impact of system use. Interviews were conducted in English, lasted 45-60 minutes, and were audio-recorded with participant consent.

Research site

The study was conducted at the University of Zululand, a provincial university in KwaZulu-Natal, South Africa, a very typical higher education institution in the Global South with limited resources. The University of Zululand is a public university based in a rural area in KwaZulu-Natal, South Africa. The university primarily serves first-generation students from historically disadvantaged and low-income communities. Being a comprehensive institution, it offers programs across almost all faculties, including Education, Humanities and Social Sciences, Commerce, Arts and Law, Science, Agriculture, and Engineering, thus playing an important role in widening access to higher education in the region. The university's area is semi-rural and characterised by poor digital infrastructure, unstable internet connections, and frequent power cuts due to national load shedding. These structural problems significantly affect students' academic lives, especially in technology-mediated learning. A major part of students depend on the university's Wi-Fi, shared devices, or mobile data to access online platforms, which makes their participation in the Learning Management System (LMS) uneven and precarious. Despite these problems, the university has made a formal decision to use an LMS as the mandatory platform for teaching, learning, communication, and assessment. Hence, the situation represents a Global South higher education context that is rural, with access and inequality issues and student mental well-being problems, in which the mandatory use of the LMS will be closely examined.

Data analysis

Analysis followed Braun and Clarke's (2006) six-phase method of reflexive thematic analysis. This included getting to know the data through listening and transcription, producing initial codes, identifying themes, examining themes, specifying and naming themes, and writing the report. The method is applied inductively, thereby allowing themes to arise from the data, though still being influenced by the concepts of UTAUT and student well-being. NVivo software was used to organise the data and conduct coding. To ensure the data would be reliable, several techniques were employed: prolonged engagement with the data, research team peer debriefing, and participant checking, in which preliminary interpretations were shared with a subset of participants to confirm their congruence with participants' experiences (Shenton, 2004; Lincoln & Guba, 1985).

Ethical considerations

The University of Zululand granted the ethical clearance. After the purpose, process, risks, and benefits of the study were explained, all participants provided written informed consent. They were guaranteed both confidentiality and anonymity; the pseudonyms are used throughout the report. The participants were informed of their right to withdraw at any time without penalty. The data are stored safely on devices protected by passwords and will be kept for 5 years before being securely deleted. By prolonged data engagement, reflexive thematic

analysis, peer debriefing, and participant checking, trustworthiness was secured and credibility, dependability, and confirmability were thus enhanced in accordance with the established qualitative research standards (Lincoln & Guba, 1985; Shenton, 2004; Braun & Clarke, 2006).

VI. RESULTS

Thematic results

Thematic analysis of qualitative interview data identified five main themes (Table 1) that, together, express the complex and often contradictory associations between LMS utilisation and student wellness within the restricted environment of a rural university. These themes suggest that the LMS serves not only as a teaching tool but also as a major psychosocial environment. In these interactions, among infrastructural shortcomings, pedagogical design, and student agency, mental states are shaped at the margins of acute distress and resilient adaptation. Each theme is described in detail below, using participant narratives and within the context of relevant scholarly discussions.

Table 1: Summary of themes and sub-themes

Major theme	Suggested sub-themes	Key literature
Infrastructural Precariousness as a Chronic Stressor	-Unreliable connectivity & load-shedding -Financial burden of data costs -Physical access barriers (shared devices, Wi-Fi spots)	Faloye & Ajayi (2022); Khoza (2024); Ajani & Rathilal (2025)
Mediated Social Sphere: Amplified Isolation vs. Facilitated Connection	-Lack of meaningful peer interaction -Lecturer–student transactional communication - Collaborative tool failures	Selwyn (2016); Pedler et al. (2022); Mendoza & Venables (2023)
Technostress and Erosion of Pedagogical Autonomy	- Navigation overload (inconsistent LMS layouts) - Notification anxiety (constant alertness) - Unclear feedback mechanisms (ambiguous assessment)	James et al. (2022); Bervell & Umar (2019)
Agentive Resilience and Informal Socio-Technical Networks	-Peer-led content sharing (e.g., WhatsApp) -Spatial Wi-Fi mapping strategies - Offline learning tactics	Folabit et al. (2025)
Episodic Flow States: Conditions for Positive Engagement	-Pedagogically engaging LMS use by lecturers -Interactive tools (self-assessment, simulations) - Personalised feedback	Zheng et al. (2020)

Infrastructural precariousness as a chronic stressor

The most significant psychological finding was the deep influence of unreliable digital infrastructures. This was an expression of the severe digital divide in South African higher education, a problem already highlighted in the literature (Faloye & Ajayi, 2022; Khoza, 2024). Participants found the cornerstone of their experience with the LMS not to be smooth access and use, but rather a constant state of anxiety and limited access. This aligns with and extends the UTAUT concept of Facilitating Conditions; their absence was not a neutral force but an active stressor that undermined the system's Performance Expectancy daily.

"Your academic planning is all about connectivity, not content. Acknowledging the connection issues and waking up at dawn just to submit your work, in hopes that the Wi-Fi will be stable, is not studying; it is an operation with lots of logistical hassles and high stakes. The anxiety isn't about grasping the material; it is about whether you will be able to demonstrate that mastery through the infrastructure" (Lindiwe, 3rd Year, Education)

"Load-shedding not only turns off the lights; it also makes your access to academia disappear. Watching a deadline on your phone lapse while you are in the dark is truly helpless of a particular kind. You are punished for things that are completely beyond your control" (Sipho (2nd Year, Commerce)

"The financial calculus is an unending process: this gigabyte of data for lecture notes or that airtime to call home. The LMS presupposes a situation of plentiful connectivity; my real world is of painful triage. This economic pressure is a constant mental load that never turns off" (Thandeka (4th Year, Science).

"The loading icon that is spinning at the crowded library is a sign of systemic failure. It is a symbol of your time, your chance, and your mental energy disappearing. This is not a minor inconvenience; it is a chronic decline in your ability to get engaged" (David, 1st Year, Arts).

Mediated social sphere: Amplified isolation versus facilitated connection

In line with objections to the transactional nature of digital education (Selwyn, 2016), the LMS proved to be a social instrument that could cut both ways. While it was the only critical asynchronous link to course logistics during the pandemic, it often did not support the meaningful interaction that is necessary for a sense of belonging (Pedler et al., 2022; Mendoza & Venables, 2023). This situation complicates the UTAUT Social Influence factor because the platform's design often curtails rich peer-to-peer and lecturer-to-learner exchanges that foster academic communal identity.

"The discussion forums are monologic spaces, lecturer posts, we consume. The spontaneous 'aha' moments and quick clarifications after a physical lecture are absent. The digital silence amplifies confusion and fosters intellectual isolation" (Nomsa, 2nd Year, Education).

"Collaborative tools on the LMS are theoretically sound but practically fractured. File version chaos and participant dropout due to connectivity issues breed interpersonal tension. The platform, meant to unite, often becomes a source of conflict, pushing collaboration back to external apps like WhatsApp" (James, 3rd Year, Commerce).

"Automated feedback, like a numeric grade with a brief 'see me' comment, is a form of disconnected assessment. It provides judgment without dialogue, increasing ambiguity rather than fostering growth. You feel assessed by an algorithm, not guided by a mentor" (Priya, 4th Year, Science).

"In a large first-year class, the LMS is the only 'face' of your peers. But this is a depersonalised façade. You are aware of a cohort, yet profoundly alone within it. The university scale, which can be inspiring on campus, becomes atomising online" (Bongani, 1st Year, Arts).

Technostress and erosion of pedagogical autonomy

The participants identified the LMS interface and its requirements as the primary source of their cognitive and emotional difficulties, and they provided a detailed qualitative account of technostress in the educational sphere (James et al., 2022; Bervell & Umar, 2019). This difficulty was experienced as an overall sense of lost independence, in which students felt controlled by the system's logic rather than empowered by it, thereby negatively influencing Effort Expectancy and intrinsic motivation.

"The inability to have a common structure among all module sites is mentally taxing. Each teacher's Moodle is a different path. The brainpower spent on 'searching the navigation' takes away the energy meant for real learning. The tool is the task now" (Zinhle, 3rd Year, Education).

"The combined calendar, which is considered assistance, is in fact a source of stressful monitoring. When notifications for many deadlines arrive at once, it does not feel like organising; it feels like an attack. You are no longer the one managing your learning; a digital scheduler is managing you" (Michael, 2nd Year, Commerce).

"Unclear submission mistakes are very discouraging. A message of failure without explanation sets off a chain of panic and self-doubt. Is it because of my knowledge, the format of my file, or the system's whim? The absence of clear feedback systems turns assessment into a highly stressful gamble" (Anathi, 4th Year, Science).

"I have 'notification anxiety', always worried that important information is in a tab that I overlooked. The LMS requires constant alertness. It no longer feels like a warehouse; it feels like a puzzle that I must solve every day just to be updated" (Rebecca, 1st Year, Arts).

Agentive resilience and the emergence of informal Socio-technical networks

Students not only demonstrated significant agency but also developed informal, adaptive networks that bypassed the official LMS to address the system's inadequacies. This result points out that

resilience is not a characteristic one has but rather a practice shared and situated in the field (Folabit et al., 2025). It demonstrates how users are continuously re-engineering their learning environments by adopting more accessible and reliable technologies, such as mobile messaging platforms.

"WhatsApp groups are a distributed survival network for us. When one person temporarily gets access, he/she download and alert the others. In fact, we have created a content delivery system among ourselves that compensates for the shortcomings of the institution" (Siyabonga, 3rd Year, Education).

"I did a personal ethnographic study of the campus Wi-Fi signals. My 'secret spot' behind the administration block is physical proof of my adaptability to the environment. Winning is not only mental but also spatial and technical" (Chloe, 2nd Year, Commerce).

"I detached my learning from real-time access. My method is 'download, disconnect, study.' This planned breakup is a coping mechanism to take away cognitive space from the anxiety of being always connected" (Kagiso, 4th Year, Science).

"Peer mentorship that evolves vertically among students residing in the same place is really our 'orientation.' Seniors pass on important tacit knowledge, such as which platforms professors use and how to avoid common mistakes. This unofficial curriculum often has more worth than the official one" (Lerato, 1st Year, Arts).

Episodic flow states: Conditions for positive engagement

The LMS was the creative tool that enabled participants to identify contingency moments in which, under strain, it facilitated a state of cognitive flow and positive engagement. Although these episodes were neither random nor frequent, they were consistently associated with three factors: the opening and trustworthy platform functionality, the pedagogically discouraging use of inviting interaction by lecturers, and the provision of valid, humanised feedback (Zheng et al., 2020).

"A history teacher turned the forum into a Socratic dialogue. He asked provocative questions and engaged in real-time back-and-forth with our replies. For that module, logging in was the intellectual thrill; the technology faded into the background of real debate." (Themba, 3rd Year, Education).

"Getting to know the self-assessment quiz tool was a game-changer. It transformed my relationship with the LMS from a passive recipient to an active learner. I used it to assess my understanding, thus creating a feedback loop that gave me control and made me feel competent." (Sarah, 2nd Year, Commerce).

"The embedded physics simulations proved their worth as educational tools the moment they were loaded. There was a moment of learning through experience when one changed the parameters and saw the results immediately. The Learning Management System changed its role from an interface to a virtual lab." (Dr. Patel, 4th Year, Science)

"The teacher's giving a personalised, positive feedback in a paragraph on an essay draft was a turning point. At that instant, the LMS was more than just a submission portal; it was also a means through which educational care and recognition were given, which made me feel very much 'seen'."(Maria, 1st Year, Arts).

VII. DISCUSSION

This study has highlighted the complex and often conflicting psychosocial dynamics arising from the forced adoption of a Learning Management System (LMS) at a rural South African university. Instead of focusing solely on adoption metrics and functional usability, this research opens the LMS's socio-technical environment, where structural inequalities, pedagogical design, and student agency interact to influence mental well-being in deep and complex ways. The themes that emerged from the study create a storyline that questions the assumptions of techno-optimists who see digital tools as straightforward links to educational equity; instead, they are seen as amplifiers of existing infrastructural and social fractures in low-resource contexts.

The main theme of Infrastructural Precariousness as a Chronic Stressor provides strong experiential validation for digital divide research in Southern Africa (Faloye & Ajayi, 2022; Khoza, 2024). However, it not only provides support for this literature but goes further by linking macro-level infrastructural failure expressly to micro-level psychological sequelae. The participants' reports of chronic anxiety, logistical exhaustion, and feelings of helplessness are not simply the consequences of using a flawed tool; rather, they are the direct psychological manifestations of a systemic failure in Facilitating Conditions, a core UTAUT construct (Venkatesh et al., 2003). This finding requires a new educational policy interpretation concerning digital infrastructure: it should be seen not as a technical support but as a primary determinant of student mental health and academic equity. When access is sporadic and uncertain, the whole idea of equitable digital education is fundamentally undermined.

On the other hand, the theme The Mediated Social Sphere: Amplified Isolation versus Facilitated Connection provides critical insights into the debate around belonging and community in digital learning (Pedler et al., 2022; Mendoza & Venables, 2023). The findings reveal that the platform's design, which is often used in a one-way, content-dissemination mode, fails to foster the relational dynamics necessary for a sense of academic community. This is in line with Selwyn's (2016) criticism of the transactional nature of much technology-enhanced learning, where interaction is systematised and stripped of its social richness. The resultant isolation experienced by students indicates a failure in the Social Influence dimension of UTAUT, not that social ties are lacking, but because the platform does not mediate or support them effectively. This suggests that fostering belonging online requires both pedagogical and technological designs to be diagonal, prioritising dialogue and the co-creation of knowledge rather than just content delivery.

The third theme, Technostress and the Erosion of Pedagogical Autonomy, provides a detailed, qualitative account of the cognitive and affective burdens associated with compulsory digital learning, aligning with broader research on technostress in educational environments (James et al., 2022). The results show how a poor user experience, characterised by inconsistent navigation, confusing processes, and an overload of notifications, actively undermines student autonomy and self-efficacy. This has a direct negative effect on Effort Expectancy; however, the result is more than just an inconvenience, as it creates a low-grade, chronic state of stress that reduces deep learning. The LMS functions as an impediment rather than a facilitator of education, imposing its own logic, discipline, and cognitive load on students, thereby alienating them from their own learning processes.

On the other hand, the theme of Agency Resilience and the Emergence of Informal Socio-Technical Networks offers a profound counter-narrative of student ingenuity. The students' activities in creating WhatsApp groups, mapping Wi-Fi signals, and devising decoupled learning strategies show how they have adaptively responded to the system's failure through sophisticated, bottom-up approaches. This aligns with the literature on student resilience as a collective, situated practice (Folabit et al., 2025). These informal networks thus form a parallel, student-engineered learning infrastructure that is frequently both more responsive and more reliable than the formal institutional system. This finding is fundamental, as it highlights that student success in such contexts is often achieved despite, not because of, the formal educational technology apparatus, and it also emphasises the importance of peer support and mobile-centric solutions in the Global South learning ecology.

Conversely, the paper elevates the UTAUT model by revealing that its underlying concepts are not merely neutral indicators of use in a resource-limited rural university setting but rather play a major role in psychological well-being. The total lack of Facilitating Conditions, such as stable electricity and internet, constitutes an infrastructural deficiency that becomes a chronic stressor, directly diminishing Performance Expectancy (Khoza, 2024; Venkatesh et al., 2003). Similarly, Effort Expectancy is viewed not only as ease of use but also as a measure of the cognitive and emotional labour required to use an untrustworthy system. This results in what is termed as navigation overload and notification anxiety, among other things (James et al., 2022). The more

the platform's design limits communication, the more Social Influence, which is essential for a sense of belonging, is weakened (Pedler et al., 2022; Mendoza & Venables, 2023). This emotionally experience-centred use of UTAUT differs from the prevailing approach in quantitative adoption studies in Sub-Saharan Africa, which, to a great extent, have considered well-being merely as an implied outcome rather than a key variable (Bervell & Umar, 2019; Xue et al., 2024). As a result, the research throws up a new policy scenario with reliable digital access being treated as a mental health necessity, the introduction of pedagogical training to alleviate tech stress and empower the learners, and the formal acknowledgment of the informal socio-technical networks driven by the students, like WhatsApp study groups, so that they are recognised as legitimate support systems within the institution. The necessity of such an empathetic, context-aware redesign of LMS implementation is to shift the system from a source of pressure to a learning environment that is both equitable and psychologically supportive of learners.

VIII. CONCLUSION

This qualitative investigation reveals the complex, sometimes conflicting psychosocial effects of mandatory LMS use at a rural South African university. It spotlights student perspectives and reveals that the LMS is not a neutral instructional tool. Instead, it acts as a significant socio-technical environment that shapes mental well-being. The findings show a dual reality: the LMS can bring chronic stress through technical uncertainty, technostress, and social isolation. Yet, under the right conditions, it can also provide support, build resilience, and offer positive experiences. The research provides two main benefits. Firstly, it extends the UTAUT model beyond adoption indicators by showing how its central factors, Facilitating Conditions, Effort Expectancy, Performance Expectancy, and Social Influence, directly influence psychological outcomes in a limited-resource context. Secondly, it disputes the techno-optimistic stories that are common in the Global North by showing that compulsory online learning can not only worsen existing inequalities but also create special mental health problems for students in the Global South. To alleviate these problems and leverage the potential of educational technology, the study's results suggest a radical change in how LMSs are introduced in comparable contexts. Universities have to transition from mere technical installations to empathetic, culturally sensitive EdTech design. This means: Considering dependable digital infrastructure, constant power, reasonably priced internet, and the availability of devices as an indispensable, irrefutable condition for students' well-being, and the fact that they will not be able to reach academic equity, will not be in place either. Giving the teaching staff the technological skills to use the LMS in ways that will lessen students' tech-related anxiety, promote their independence, and facilitate meaningful online interactions. Acknowledge the informal, student-led support networks, such as peer WhatsApp groups, that help students stay connected and supported. In the end, this study supports a user-centred methodology in educational technology, meaning that student welfare is the most critical indicator of success. University systems can reconfigure the LMS from a potential source of stress to a truly uplifting and empowering element of higher education in the Global South by viewing the issues through the lens of empathy, context, and fairness.

IX. CONFLICT OF INTEREST

There are no conflicts of interest in this article.

X. DATA AVAILABILITY STATEMENT

Data are available upon request.

REFERENCES

Abbad, M. M. M. (2021). Using the UTAUT model to understand students' usage of e learning systems in developing countries. *Education and Information Technologies, 26*(6), 7205–7224. https://doi.org/10.1007/s10639-021-10573-5

Adigun, O. T., Mpofu, N., & Maphalala, M. C. (2024). Fostering self-directed learning in blended learning environments: A constructivist perspective in higher education. *Higher Education Quarterly, 79*(1), e12572. https://doi.org/10.1111/hequ.12572

Adigun, O. T., Nzima, D. R., Maphalala, M. C., & Ndwandwe, N. D. (2022). COVID-19 and learners with disabilities: Towards divergent praxis in teacher preparation for equity and epistemic justice. *South African Journal of Higher Education, 36*(4), 225–242. https://doi.org/10.20853/36-4-5178

Ajani, O. A. (2025). Enhancing knowledge production through the management of technology and innovation in higher education: Challenges and opportunities. *Indonesian Journal of Innovation and Applied Sciences, 5*(2), 129–144. https://doi.org/10.47540/ijias.v5i2.1644

Ajani, O. A., & Matiyenga, T. C. (2025). Enhancing critical analysis and argumentation skills in university students through multimodal approaches: A comprehensive study. *International Journal of Educational Reform.* Advance online publication. https://doi.org/10.1177/10567879251326556

Ajani, O. A., & Rathilal, S. (2025). Exploring design thinking for innovation in higher education: A comprehensive review of varied influential factors. *Social Sciences and Education Research Review, 12*(1), 21–32. https://zenodo.org/records/15804504

Ajani, O. A., Gamede, B. T., & Govender, S. (2025). Cultural and ethical dimensions of learning management system adoption in rural universities: Exploring data privacy, algorithmic bias, and contextual realities. *Multidisciplinary Science Journal, 8*, 2026142. https://doi.org/10.31893/multiscience.2026142

Alghamdi, A. A. (2022). Digital transformation within Saudi education system: 2020 and beyond. *Education Review, 6*(4), 419–425.

Almaiah, M. A., Al Khasawneh, A., & Althunibat, A. (2020b). Exploring the critical challenges and factors influencing e learning system usage during the COVID 19 pandemic. *Education and Information Technologies, 25*, 5261–5280. https://doi.org/10.1007/s10639-020-10219-y

Almaiah, M. A., Alamri, M. M., & Al Rahmi, W. M. (2020a). Applying the DeLone and McLean information system success model to understand the factors affecting students' satisfaction with a learning management system in Saudi Arabia. *IEEE Access, 8*, 122295–122307. https://doi.org/10.1109/ACCESS.2020.3000000

Alotumi, M. (2022). Factors influencing graduate students' behavioural intention to use Google Classroom: A case study mixed methods research. *Education and Information Technologies, 27*(12), 10035–10063. https://doi.org/10.1007/s10639-022-11051-2

Bao, W. (2020). COVID-19 and online teaching in higher education: A case study of Peking University. *Human Behavior and Emerging Technologies, 2*(2), 113–115. https://doi.org/10.1002/hbe2.191

Bayaga, A., & du Plessis, A. (2024). Ramifications of the unified theory of acceptance and use of technology among developing countries' higher education staff. *Education and Information Technologies, 29*(12), 9689–9714. https://doi.org/10.1007/s10639-023-12194-6

Bervell, B., & Umar, I. N. (2019). A decade of learning management system acceptance and adoption research in Sub-Saharan African higher education: A systematic review from 2004 to 2018. *Education and Information Technologies, 24*(6), 3593–3627. https://doi.org/10.1007/s10639-019-09945-z

Blignaut, S., Blignaut, R. J., Chivhanga, S., Leendertz, V., Venter, I. M., & Renaud, K. (2022). Belonging, well-being, and stress with online learning during COVID-19. *South African Journal of Higher Education, 36*(6), 169–191. https://doi.org/10.20853/36-6-5525

Bozkurt, A., & Sharma, R. C. (2020). Emergency remote teaching during the coronavirus pandemic. *Asian Journal of Distance Education, 15*(1), i–vi.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Sage.

Creswell, J. W., & Plano Clark, V. L. (2017). *Designing and conducting mixed methods research* (3rd ed.). Sage.

Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). Sage.

Faloye, S. T., & Ajayi, N. (2022). Understanding the impact of the digital divide on South African students in higher educational institutions. *African Journal of Science, Technology, Innovation and Development, 14*(7), 1734–1744. https://doi.org/10.1080/20421338.2021.1983118

Ficapal Cusí, P., Torrent Sellens, J., Folgado Fernández, J. A., & Palos Sánchez, P. R. (2024). Sudden e learning: Exploring the role of user intention, enjoyment, and habit on university students' well-being. *Higher Education Quarterly, 78*(3), 1138–1161. https://doi.org/10.1111/hequ.12519

Folabit, N. L., Jita, L. C., & Jita, T. (2025). Impact of technology integration on students' sense of belonging and well-being: A systematic review. *International Journal of Evaluation and Research in Education*, *14*(2), 1075–1084.

James, T. L., Zhang, J., Li, H., Ziegelmayer, J. L., & Villacis Calderon, E. D. (2022). The moderating effect of technology overload on the ability of online learning to meet students' basic psychological needs. *Information Technology and People, 35*(4), 1364–1382. https://doi.org/10.1108/ITP-03-2021-0225

Jones, C., & Pimdee, P. (2017). Innovative ideas: Thailand 4.0 and the Fourth Industrial Revolution. *Asian International Journal of Social Sciences, 17*(1), 4–35.

Khoza, S. (2024). Navigating the dark: Understanding the impact of load shedding on learning management systems in South African universities. *International Journal of Research in Business and Social Science, 13*(2), 345–352. https://doi.org/10.20525/ijrbs.v13i2.3134

Lincoln, Y. S., & Guba, E. G. (1985). Ethics: The failure of positivist science. *Review of Higher Education, 12*(3), 221–240.

Maphalala, M. C., & Adigun, O. T. (2020). Academics' experience of implementing e learning in a South African higher education institution. *International Journal of Higher Education, 10*(1), 1–13. https://doi.org/10.5430/ijhe.v10n1p1

Mendoza, A., & Venables, A. (2023). Attributes of blended learning environments designed to foster a sense of belonging for higher education students. *Journal of Information Technology Education: Research, 22*, 129–156. https://doi.org/10.28945/5082

Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation* (4th ed.). Jossey-Bass.

Mooney, C., & Becker, B. A. (2021). Investigating the impact of the COVID-19 pandemic on computing students' sense of belonging. *ACM Inroads, 12*(2), 38–45. https://doi.org/10.1145/3463408

Mpungose, C. B. (2020). Emergent transition from face-to-face to online learning in a South African university in the context of the coronavirus pandemic. *Humanities and Social Sciences Communications, 7*(1), Article 113. https://doi.org/10.1057/s41599-020-00603-x

Naidoo, P., & Cartwright, D. (2022). Where to from here? Contemplating the impact of COVID-19 on South African students and student counselling services in higher education. *Journal of College Student Psychotherapy, 36*(4), 355–369. https://doi.org/10.1080/87568225.2020.1842279

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods, 16*(1), 1–13. https://doi.org/10.1177/1609406917733847

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed-method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research, 42*(5), 533–544. https://doi.org/10.1007/s10488-013-0528-y

Patton, M. Q. (2015). *Qualitative research & evaluation methods: Integrating theory and practice* (4th ed.). Sage Publications.

Pedler, M. L., Willis, R., & Nieuwoudt, J. E. (2022). A sense of belonging at university: Student retention, motivation and enjoyment. *Journal of Further and Higher Education, 46*(3), 397–408. https://doi.org/10.1080/0309877X.2021.1955844

Selwyn, N. (2016). *Is technology good for education?* Polity Press.

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information, 22*(2), 63–75. https://doi.org/10.3233/EFI-2004-22201

Smith, J., & Rahman, A. (2021). Implementation of cloud-based learning management systems in developing countries: Challenges and prospects. *Educational Technology Research and Development, 69*(1), 85–104. https://doi.org/10.1007/s11423-020-09885-x

Tang, C., Tsui, M. S. H., Chan, F. H. W., Wong, S. Y. S., & Wong, J. Y. H. (2023). Impact of online learning on sense of belonging among first-year clinical health students during COVID-19: Student and academic perspectives. *BMC Medical Education, 23*(1), Article 100. https://doi.org/10.1186/s12909-023-04061-2

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 425–478. https://doi.org/10.2307/30036540

Xue, L., Rashid, A. M., & Ouyang, S. (2024). The unified theory of acceptance and use of technology in higher education: A systematic review. *SAGE Open, 14*(1), 1–22. https://doi.org/10.1177/21582440241229570

Xue, L., Rashid, A. M., & Ouyang, S. (2024). The unified theory of acceptance and use of technology (UTAUT) in higher education: A systematic review. *SAGE Open, 14*(1). https://doi.org/10.1177/21582440241229570

Zheng, L., Zhao, Z., & McMahon, G. (2020). Technology facilitated learning in higher education: Dimensions of student staff engagement. *Computers and Education, 144*, 103714. https://doi.org/10.1016/j.compedu.2019.103714