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Technology Integration in teaching and learning in Zimbabwean Higher Education Institutions

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ABSTRACT

The integration of digital technologies into higher education has become vital in improving teaching quality, student engagement and graduate employability. Despite supportive national policies such as Zimbabwe's Education 5.0, technology in many universities remains underutilised for pedagogical transformation. In exploring the factors influencing the successful integration of technology into teaching and learning in higher education institutions in Zimbabwe, the study adopted the intepretivist paradigm, a qualitative research approach, as well as the case study design. Data were generated through semi-structured interviews with nine lecturers and focus group discussions with twelve undergraduate students. Data from interviews were analysed using thematic analysis, and initial coding was completed by label identification. Thematic analysis revealed that while both lecturers and students demonstrated generally positive attitudes towards digital technologies, effective integration was constrained by inadequate infrastructure, limited digital literacy, insufficient pedagogical training, high data costs, and inconsistent institutional support. Technology was largely confined to content delivery rather than interactive and student-centred learning. The study concludes that meaningful technology integration requires alignment between pedagogy, technology and content, supported by sustained professional development and institutional investment. The study also recommended that lecturers should integrate interactive and student-centred digital methods like simulations and collaborative tools rather than limiting them to content delivery. The study contributes context -specific insights into technology adoption challenges in Zimbabwean higher education.

Keywords: technology integration, TAM, TPACK, perceived usefulness, perceived ease of use

INTRODUCTION

Digital technologies have increasingly become vital in higher education systems globally (Alenezi et al., 2023). For instance, the COVID-19 epidemic had a major impact on Zimbabwe's educational system, which led the government to support e-learning and provide students with internet and Information Communications Technology ICT access (Bozkurt & Sharma, 2020; Elharake et al., 2023). Academic programmes are increasingly requiring the use of ICT (Nhongo & Siziba, 2022). This technology is altering the way that education is provided by giving different educational systems and institutions multiple opportunities. ICT facilitates collaborative and communication tasks, as well as teaching and learning. ICT integration in educational settings has several advantages and challenges (Foutsitzi & Caridakis, 2019).

Although some limitations may make it impossible to employ ICT in classrooms, it can still improve teaching and learning strategies (Andrade et al., 2021; Foutsitzi & Caridakis, 2019). Nherera & Mukora (2024) documented some of these challenges that negatively impacted the effectiveness of learning in a virtual setting, including the limitations of technological platforms, poor internet connections, low student-teacher engagement, and teachers' and students' inadequate understanding of the online learning system. This shows that pedagogical use of technology remains limited; hence, this study investigates factors influencing effective technology integration in teaching and learning within a Zimbabwean higher education context.

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Problem Statement

Despite supportive national policies and some investments in ICT infrastructures, notably education 5.0 and ICT policy, higher education institutions in Zimbabwe continue to underutilise technology as it is commonly utilised for routine administrative tasks rather than as a transformative and creative tool in teaching and learning. While existing studies have predominantly focused on infrastructure deficiencies, this study explores other variables that have a large bearing on the degree of ICT integration in higher education institutions in Zimbabwe.

Research Objectives

a) To identify technologies currently utilised by educators in their day-to-day practice
b) To assess the influence of lectures' and students' attitudes, perceptions and prior experiences on the utilisation of technology in teaching and learning
c) To ascertain the factors contributing to the underutilisation of technology in teaching and learning in higher and tertiary education institutions in Zimbabwe
d) To determine strategies and interventions that can be implemented to enhance the effective integration of technology in teaching and learning

LITERATURE REVIEW

Technology Integration in Higher Education

Technology integration in higher education has increasingly been recognised as a key driver of improved teaching and learning outcomes. Research indicates that incorporating technology into instructional activities helps students learn the fundamentals of computers (Tanik Önal, 2021). Their employment prospects are enhanced by their capacity to generate and modify data. However, Njiku et al. (2019) pointed out that a lack of digital skills and infrastructure makes certain academic institutions hesitant to alter their teaching and learning methodology. In Zimbabwean Universities, learning management systems such as Moodle, Google Classroom, and WhatsApp have been widely adopted, particularly following the COVID -19 pandemic, which accelerated the shift towards online and blended learning models (Chitanana, 2024). However, research suggests that technology use in various higher education institutions remains largely limited to basic functions like uploading notes rather than interactive and student-centred pedagogical practices (Munamati et al., 2023). The limited pedagogical application highlights the need to examine not only access to technology but also the conditions under which it is meaningfully integrated into teaching and learning.

Technological tools currently utilised in teaching and learning in higher education institutions

In Zimbabwe's higher education institutions, e-learning platforms, Learning Management Systems (LMS), and mobile learning are some of the most common technologies. Moodle has been widely used in Zimbabwe by establishments such as Great Zimbabwe University and Midlands State University (Nherera & Mukora, 2024). E-learning is transforming higher education because it is more adaptable, accessible, and in accordance with the needs of modern students (Yadav, 2023). Despite e-learning's many potential benefits, several barriers prevent its widespread use in Zimbabwe's higher education system. One major barrier is the lack of enough infrastructure (Chikuvadze et al., 2025). Particularly for those who reside in distant areas, many students lack reliable access to computers, smartphones, and the internet (Ntshwarang et al., 2021). Also, WhatsApp is one of the most widely utilised technologies in Zimbabwean universities, as it is accessible and reasonably priced (Munamati et al., 2023). However, disparities in device ownership remain a major problem.

Attitudes and perceptions of lecturers and students

Students' and lecturers' attitudes play a crucial role in determining the extent to which technology is adopted and utilised in higher education. Students tend to favour accessible and familiar platforms such as WhatsApp and Zoom, which are perceived as user-friendly and compatible with existing learning practices (Nherera & Mukora, 2024). While some students believe that technology diverts their attention from the lessons being taught by the teacher, others feel that it increases their motivation and level of engagement (Zhao, 2024). Conversely,

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lecturers' attitudes are often influenced by workload pressures, limited training and insufficient institutional support, which negatively affect their readiness to adopt innovative digital teaching strategies (Munamati et al., 2023).

Pedagogical competence and professional development

Effective technology integration requires lecturers to possess not only technical skills but also pedagogical competencies to align technology with instructional goals. Research highlighted that many lecturers lack adequate training in technology-enhanced pedagogy, resulting in underutilisation of available digital tools (Munamati et al.,2023). Many institutions still struggle with how to integrate technology into their teaching practices, and many teachers find it hard to adapt to new teaching methods (Marshall et al., 2024). There is a skills gap that may prevent both teachers and students (Ormilla & Ongan, 2024). To help users become proficient with e-learning technology, they suggested training (Nherera & Mukora, 2024). Also, the absence of continuous training and mentorship programs has been linked to reliance on traditional teaching methods, even where technological infrastructure exists (Maune, 2023). This gap that exists between access and pedagogical use underscores the importance of institutional investment in staff development programs to support sustainable technology integration.

Institutional and Infrastructure Barriers

Institutional and infrastructure challenges remain major constraints to effective technology integration in Zimbabwean higher education. For educational institutions to be IT-driven, they require the fundamental ICT infrastructure. According to Obidile (2023), computers, telecommunication systems, and multimedia systems, as well as projectors, whiteboards, satellite, broadband links, DVDs, and computers are expected to be included in every lecture classroom. Nevertheless, in certain universities, these facilities are insufficient, which hinders the successful incorporation of e-learning into the teaching and learning procedures (Obidile,2023). Additionally, institutional factors such as inadequate technical support, weak ICT policies and inconsistent implementation strategies contribute to the underutilisation of technology in teaching and learning (Dahiru, 2025). These barriers highlight the need for a coordinated institutional framework that supports both infrastructure development and pedagogical innovation.

Research gap

There is a notable lack of context-specific empirical research examining why available technologies remain underutilised for teaching and learning, particularly at the departmental level within state universities. Therefore, this study addresses this gap by examining the combined influence of human factors, institutional factors and pedagogical preparedness on technology integration in a Zimbabwean state university.

METHODOLOGY

The research adopted an interpretivist research philosophy because it is well-suited to understanding the complex and context-specific facets of technology integration in higher education. Lecturers and regular undergraduate students in the Management Sciences department at one state university made up the study's population.

The sample for this study consisted of all 12 lecturers and 12 students in the department of management sciences at one state university in Zimbabwe. Data were gathered through interviews and focus group discussions.

RESULTS AND DISCUSSION

The study achieved a satisfactory response rate, with data collected through semi-structured interviews with lecturers and focus group discussions with students in the Department of Management Sciences. All invited participants consented and completed the data collection process, resulting in 100% usable response rate, which enhanced the credibility of the findings. Both male and female participants were represented in the study, lecturer participants reported varying years of teaching experience. Interviewed 4 male lecturers and 5 female lecturers;

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at least 4 of the respondents had over 10 years of teaching experience, whilst 5 had less than 5 years. The study employed triangulation of data sources, interviews and focus groups, to ensure credibility and dependability.

Patterns of Technology Use in teaching and learning

Findings indicate that both lecturers and students utilise a range of digital tools, with Google Classroom, PowerPoint, mobile phones, projectors and WhatsApp emerging as the most commonly used technologies. Lecturers emphasised the role of these tools in facilitating access to learning materials and communication. One lecturer stated: *"I mainly use Google Classroom and PowerPoint because they make teaching easier and more interactive''* (**L2**).

Similarly, another lecturer explained how technology compensated for infrastructural limitations; *"Even when the projector is not available, I share the PowerPoint slides with students on Google Classroom so that learning continues''* (**L7**). Students corroborated these views by noting: *"We usually use our phones and laptops to access notes through Google Classroom*" (FG2). However, despite widespread access to basic tools, the findings show that technology use is largely limited to content delivery, with minimal integration of interactive or student-centred pedagogies.

Frequency of Technology Use

The frequency of technology use varied considerably among lecturers. Some reported regular use, while others indicated sporadic adoption due to infrastructural constraints. One lecturer noted: *"I use projectors and Google Classroom twice a month, depending on class size and content*" (**L1**). Whilst Students highlighted similar challenges, particularly connectivity and affordability issues:" *Sometimes we fail to use online platforms because the network is poor and data is expensive*" (**FG3**). Despite these challenges, students acknowledged the flexibility afforded by technology: *"Technology makes learning easy even when I am not on campus''* (**FG1**). This uneven frequency suggests that technology adoption remains situational rather than institutionalised.

Attitudes and Prior Experience with Technology

Overally, both students and lecturers expressed positive attitudes towards technology integration. Lecturers perceived technology as essential for managing large classes and improving efficiency. As one lecturer stated: *"It makes my work easier and helps me manage large classes*" (**L4**). Nevertheless, resistance was also evident, particularly among lecturers with limited digital skills: *"Some colleagues still fear using technology because they are not trained enough"* (**L8**). Prior experience emerged as a critical factor influencing confidence and effective use. Lecturers with sustained exposure to digital platforms reported greater competence: *"I have used Google Classroom for years, so it is now part of my teaching routine"* (**L5**). Conversely, less experienced users struggled: *"I find it difficult to navigate some of the platforms''* (**L9).** Students with prior exposure to online learning also adapted more easily: *"I used to learn online during COVID-19, so using technology is normal for me now''*(**FG3**).

Barriers to Effective Technology Integration

Participants identified several interconnected barriers contributing to the underutilisation of technology, including poor internet connectivity, high data costs, power outages, limited training and inadequate institutional support. One lecturer highlighted infrastructural challenges: "*Sometimes power cuts interrupt lessons and we cannot continue online sessions*'' (**L6).** Students echoed these concerns**:** "Data bundles are expensive, and sometimes the Wi-Fi is too slow to attend online lectures (**FG2**). Institutional policy gaps were also noted: "There are no clear policies to support technology use in all courses'' (**L7**).

In addition, according to the findings, institutional factors lead to underutilization of technology in teaching and learning, as stated by **L8: "***Institutional factors are interconnected; the institution can provide the best devices (infrastructure), but if the internet is slow and the training is poor, the tools will gather dust as a result, a lecturer will be frustrated.*'' These findings demonstrate that while attitudes toward technology are largely positive, structural and institutional constraints significantly limit effective and sustained integration. The results reveal

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that technology integration in the studied institution is present but shallow, characterised by reliance on basic tools for communication and content delivery. Whereas lecturers and students recognise the benefits of technology, its pedagogical potential remains underexploited due to infrastructural deficits, limited training and inconsistent institutional support. The findings align with the Technology Acceptance Model (TAM), as perceived usefulness and ease of use strongly influenced adoption, while technical barriers reduced motivation and frequency of use.

RECOMMENDATIONS

The study recommends that the institutions should equip lecturers with skills like data analysis, instructional design and technology integration for blended and online learning environments. The study recommends integration of technology with pedagogy. They should establish dedicated ICT support units to assist both lecturers and students in troubleshooting and training. The university may need to consider providing technological infrastructure, such as interactive white boards, projectors, and computers for lecturers and invest in solar systems and a solar plant to mitigate the challenges of power outages.

REFERENCE

1. Alenezi, M., Wardat, S., & Akour, M. (2023). The need of integrating digital education in higher education: Challenges and opportunities. *Sustainability*, *15*(6), 4782.
2. Andrade, H. L., Brookhart, S. M., & Yu, E. C. (2021). Classroom assessment as co-regulated learning: A systematic review. Frontiers in education,
3. Bozkurt, A., & Sharma, R. C. (2020). Emergency remote teaching in a time of global crisis due to CoronaVirus pandemic. *Asian journal of distance education*, *15*(1), i–vi.
4. Chikuvadze, P., Zuva, J., Mugijima, S., & Rusike, P. C. Indonesian Journal of Learning Education and Counseling.
5. Chitanana, L. (2024). The sustainability of blended learning in Zimbabwean state universities in the post-COVID-19 era. *E-Learning and Digital Media*, 20427530241277913.
6. Dahiru, M. (2025). Barriers to Adopting ICT-Based Teaching Methods in Nigerian Polytechnic Institutions. *Available at SSRN 5285586*.
7. Elharake, J. A., Akbar, F., Malik, A. A., Gilliam, W., & Omer, S. B. (2023). Mental health impact of COVID-19 among children and college students: A systematic review. *Child Psychiatry & Human Development*, *54*(3), 913–925.
8. Foutsitzi, S., & Caridakis, G. (2019). ICT in education: Benefits, challenges and new directions. 2019 10th international conference on information, intelligence, systems and applications (IISA),
9. Maune, A. (2023). Adoption and use of eLearning platforms by universities in developing countries: Evidence from Zimbabwe. *Cogent Education*, *10*(2), 2287905.
10. Munamati, J., Mushonga, R., & Munamati, S. (2023). Blended teaching and learning in Higher education institutions: Experiences of selected Universities in Zimbabwe. *The Dyke*, *17*(2), 1–20.
11. Nherera, C. M., & Mukora, F. N. (2024). Digitalisation of higher education in Zimbabwe: a challenging necessity and emerging solutions. *Journal of Comparative & International Higher Education*, *16*(2), 4.
12. Nhongo, R., & Siziba, L. (2022). Adopting virtual classes during the COVID-19 lockdown: Interrogating new approaches to teaching and the exclusion of learners in rural settings. *International Journal of Learning, Teaching and Educational Research, 21*(2), 18–33.
13. Njiku, J., Maniraho, J. F., & Mutarutinya, V. (2019). Understanding teachers' attitude towards computer technology integration in education: A review of literature. *Education and information technologies*, *24*(5), 3041–3052.
14. Ntshwarang, P. N., Malinga, T., & Losike-Sedimo, N. (2021). eLearning tools at the University of Botswana: Relevance and use under COVID-19 crisis. *Higher Education for the Future*, *8*(1), 142–154.
15. Obidile, J. I. (2023). Strategies for Improving the Utilization of E-Learning in the Teaching and Learning of Accounting. *Journal of Vocational Education Studies*, *6*(1), 111–124.
16. Ormilla, R. C. G., & Ongan, M. (2024). Navigating the shift: faculty preparedness for online teaching in the evolving global higher education landscape. *International Journal of Learning, Teaching and Educational Research*, *23*(1), 1–23.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue V, May 2026

17. Tanik Önal, N. (2021). Investigation of Technology Integration Knowledge of Science Teachers: A Case Study. *International Journal of Curriculum and Instruction*, *13*(1), 773–793.
18. Yadav, S. (2023). E-Learning in Education: Transforming Teaching-Learning in Twenty-First Century. *A Peer Reviewed International Refereed Journal*, *11*(1), 28–36.
19. Zhao, Y. (2024). Exploring the Role of Social Media Platforms in Facilitating Collaborative Learning among EFL Students: A Case Study Approach in Vocational Colleges. *International Journal of Instructional Cases*, *8*(1), 209–232.