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A teacher educator's experience in enhancing teaching and learning through digital literacy in a BEd undergraduate classroom

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Abstract

This paper explores a teacher educator's research journey to enhance digital literacy in a Bachelor of Education (BEd) programme at Stellenbosch University, using a qualitative action research approach. In response to increasing digitalisation, particularly in the post-COVID-19 era, the university implemented the Augmented Remote Teaching, Learning and Assessment (ARTLA) model in 2020, which blends online and in-person learning. Grounded in a critical emancipatory framework, the research investigates the teacher educator's engagement with digital knowledge and skills in order to improve teaching and learning. Central to this inquiry is the question: "How did I, as a teacher educator, set out to improve my teaching and learning through digital literacy in my BEd undergraduate classroom?" Data were collected through field notes, questionnaires, semi-structured interviews, and a focus group. Findings indicate that online teaching and learning fosters student engagement, although access disparities remain a challenge. Despite these barriers, the project improved learning outcomes and highlighted the value of collaboration, reflection, and professional development in advancing digital pedagogy.

Keywords: digital literacy, higher education, teacher educator, action research, Bachelor of Education classroom

Introduction

Digital literacy extends beyond technical proficiency; it involves critical engagement with digital content, online collaboration, and adaptability to evolving technologies (Yates et al., 2015). Recognising its growing significance in modern education, I embarked on a journey to integrate digital literacy into my teaching practices as a teacher educator in the Bachelor of Education (BEd) programme at Stellenbosch University.

A key motivation for this integration has been the accelerating global trends in educational technology, such as artificial intelligence (AI), adaptive learning platforms, and immersive digital environments, which continue to redefine how knowledge is accessed, constructed,

and shared. Teaching a diverse range of students from first-year Foundation and Senior Phase (Life Skills) students to third-year Research Methodology students, including master's and doctoral candidates, has compelled me to embrace digital technology not merely as a supplementary tool, but as an essential part of my educational experience and mission.

In response to the rapid shift towards digital education, Stellenbosch University adopted the Augmented Remote Teaching, Learning and Assessment (ARTLA) model in 2020, which blends in-person teaching with online learning to create flexible and inclusive academic experiences (Garrison & Akyol, 2013). Implementing ARTLA in my classroom required continuing adaptation, self-reflection, and student feedback to refine my pedagogical approach and align with the institution's broader digital transformation goals.

What is digital literacy?

According to Ribble (2015, p. 6), digital literacy refers to "the ability to use technology to communicate, solve problems, create new knowledge, and critically evaluate digital content." This broad definition emphasises not only technical skills but also critical thinking and the ability to engage with and produce information in digital formats. Jenkins (2009) argued that digital literacy is not just about using technology, but about making meaning and communicating effectively in the digital world. He stressed the importance of critical thinking, particularly in terms of evaluating digital media and understanding its implications for communication, culture, and society. In a more comprehensive sense, he suggested that digital literacy is a lifelong process of acquiring and applying skills, knowledge, and strategies to manage digital information and communication effectively. This view underscores the need for ongoing digital literacy development, particularly as new technologies and digital practices evolve.

Wahyuddin (2017) said that the development of digital competence is increasingly recognised as a key component of educational curricula, aiming to equip learners with the necessary tools to succeed in a digitalised world. Developing digital skills ensures that individuals can engage with digital environments responsibly and thoughtfully, ultimately enhancing their ability to contribute to and thrive in a digital society (Cheng et al., 2023). Thus, digital literacy involves both the practical skills to use technology, and the cognitive and evaluative skills needed to navigate and create within the digital landscape. It is a dynamic, evolving competency that is vital for participation in modern society.

Importance of digital literacy for lecturers in higher education

Digital literacy is critically important for lecturers within higher education institutions for several reasons that span teaching, research, and professional development. As technology increasingly permeates all aspects of higher education, lecturers must be digitally literate to effectively engage with students, enhance learning outcomes, and maintain relevance in an evolving academic landscape. Digital literacy allows lecturers to leverage a wide array of educational technologies that can significantly enhance teaching methods. As Johnson et al.

(2016) explained, digital tools provide opportunities for personalised learning experiences where students can engage with materials in diverse ways such as through videos, simulations, and online forums. Lecturers who are digitally literate can seamlessly integrate these tools into their teaching to cater for different learning styles and facilitate deeper engagement with the content.

Digital literacy helps lecturers access and curate a vast number of academic resources that can enrich their teaching and enhance learning. As Hockly (2018) noted, lecturers who are digitally literate can discover, evaluate, and integrate high-quality digital content from online databases, journals, open educational resources, and other digital archives. This allows them to offer students a more comprehensive and diverse array of materials that extend beyond traditional textbooks.

In today's academic environment, communication often takes place through digital platforms, including email, virtual classrooms, and social media. Garrison and Akyol (2013) highlighted the importance of digital literacy in fostering collaborative learning environments, where both lecturers and students can interact, share ideas, and engage in discussions outside of the classroom. Lecturers need digital literacy to effectively manage these online communications, ensuring that they can communicate clearly, facilitate discussions, and provide timely feedback. Digital literacy also involves the ability to critically evaluate information, a skill that is especially important in research contexts. Leu et al. (2017) argued that digital literacy enables lecturers to critically analyse and assess the credibility and quality of information found online, which is crucial for both their own research and guiding students in their academic inquiries. Lecturers need to be able to distinguish reliable academic sources from misinformation, ensuring that their own work and the work they guide students through is based on credible evidence.

Digital literacy is vital for a lecturer's own professional growth. Engaging with emerging technologies can help lecturers remain up to date and relevant in their field and improve their pedagogical practices. According to Selwyn (2016), digital literacy supports the professionalisation of teaching, where lecturers can use online platforms for self-improvement, access peer-reviewed publications, participate in online academic communities, and attend webinars or virtual conferences. Being digitally literate ensures that lecturers can remain current in their practice and adapt to new technological developments. Digital literacy provides lecturers with the tools necessary to design flexible learning environments that can accommodate diverse student needs. For instance, the use of learning management systems (LMS) like Moodle or Blackboard allows for asynchronous learning, where students can access materials and participate in activities at their own pace. This flexibility can be particularly important for non-traditional students or those with a range of different learning needs. As Anderson (2008) pointed out, digital literacy enhances access to education, making learning more inclusive and accessible.

Higher education institutions are increasingly adopting digital pedagogies, which blend face-to-face instruction with digital tools. Being digitally literate allows lecturers to experiment with these pedagogies, including flipped classrooms, blended learning, and MOOCs (massive

open online courses). As Laurillard (2012) stated, digital literacy is a key enabler for adopting new pedagogical approaches, allowing lecturers to effectively manage hybrid or fully online courses, while ensuring that teaching remains engaging and pedagogically sound.

The interconnectedness of the global academic community is another factor that underscores the need for digital literacy in higher education institutions. Lecturers can engage in international collaborations, participate in global research networks, and even teach students from different parts of the world through digital platforms. Kaufman and Sohlberg (2021) emphasised that digital literacy fosters global competencies, enabling lecturers to teach and collaborate across borders, share research findings globally, and enhance the diversity of their students' learning experiences.

Thus, digital literacy is essential for lecturers in higher education institutions because it enables them to enrich teaching and enhance learning, engage in critical research practices, communicate effectively, and contribute to the continuing development of their profession. In a rapidly changing educational environment, digital literacy is no longer optional but a necessary competency for ensuring that lecturers can meet the challenges and opportunities presented by technology, enhance their pedagogical effectiveness, and support student success. The main research question guiding this study was: "How did I, as a teacher educator, set out to improve my teaching and student learning through advancing digital literacy in my BEd undergraduate classroom?"

Contextual background

The coronavirus pandemic sent shockwaves around the world, leading to a public health emergency that killed thousands and plunged the global economy into what the International Monetary Fund warned could be the sharpest economic downturn since the Great Depression (Hall, 2020). In that context, the slow pace of change in academic institutions globally was lamentable, with centuries-old, lecture-based approaches to teaching, entrenched institutional biases, and outmoded classrooms. However, COVID-19 became a catalyst for educational institutions worldwide, to search for innovative solutions in a relatively short period of time.

The rapid spread of COVID-19 demonstrated the importance of building resilience to face various threats, from pandemic diseases to extremist violence to climate insecurity and, yes, even rapid technological change. The pandemic was also an opportunity to remind humanity of the skills lecturers as well as students need in this unpredictable world—such as informed decision making, creative problem solving and, perhaps above all, adaptability.

It is with that understanding that I conducted this research project to find ways to enhance my digital and online skills to improve the teaching and learning in my BEd undergraduate classroom. In response to the rapid shift towards digital education, the University adopted the ARTLA model in 2020. This model blends in-person teaching with online learning to create flexible and inclusive academic experiences (Garrison, 2017). Blended learning has been shown to enhance not only student autonomy but also interactive engagement (Means et al., 2010), yet its success depends on an educator's ability to design engaging digital content and

assessments (Picciano, 2009). Implementing ARTLA in my classroom required continual adaptation, self-reflection, and student feedback to refine my pedagogical approach.

Embarking on the transition from traditional digital methods necessitated considerable introspection and growth on my part. Early on, my efforts to re-curriculate my courses were marked by a process of trial and error, revealing the dynamic nature of teaching in a digitised world. Resistance to change, particularly among students comfortable with conventional methods of instruction, was palpable. However, the COVID-19 pandemic proved to be a pivotal juncture; online teaching transitioned from being merely an adaptation to becoming a foundational element of the learning experience.

Utilising platforms like SUNLearn (https://learn.sun.ac.za/) for discussions, readings, and assessments illuminated the need for resourcefulness in my teaching strategy. I began to view challenges not merely as barriers to be overcome, but as opportunities for innovation, aligning with the course emphasis on organisational agility as a critical component of digital transformation. Adopting digital leadership principles fostered an environment in which both my students and I could engage in iterative learning processes, creating a classroom culture that was shared, resilient, and adaptive. As a teacher-researcher, my journey through the digital transformation landscape in higher education has been both challenging and enlightening. In this paper, I specifically focus on my research journey (2023–2024) as a teacher educator who attempted to use a number of digital skills to enhance online teaching and learning in a BEd undergraduate programme.

Methodology

As a teacher-researcher, I adopted the strategy of action research to evaluate and enhance my digital teaching methods. Action research follows a cyclical process of planning, acting, observing, and reflecting, allowing for continual pedagogical refinement (McNiff, 2002). An action research study entails a participatory approach consisting of a spiral of self-reflective cycles (Esau, 2013). This approach aligned with my goal of improving digital literacy instruction and addressing challenges faced by students. To assess the effectiveness of my digital teaching interventions, I collected data through multiple qualitative methods such as keeping a reflective personal journal, sharing questionnaires with students, and conducting semi-structured interviews as well as a focus group discussion.

By utilising my reflective journal, I documented my experiences, challenges, and progress in implementing digital tools in my classroom. The student questionnaires captured students' perceptions of online learning, engagement levels, and accessibility challenges. Conducting the semi-structured interviews with students provided me with in-depth insights into their digital learning experiences. In the focus group discussion, a group of students participated in a collaborative dialogue about the effectiveness of digital tools and pedagogical strategies.

Data analysis

In analysing the data, I utilised Braun and Clarke's (2006) thematic analysis approach. Initially I familiarised myself by reviewing my reflective journal covering the length of this digital project (2022, 2023, and 2024) in detail. Although this Funding for Innovation in Teaching and Learning project was registered for 2023 and 2024, I had made field notes in my reflective journal since going online for teaching during the COVID-19 pandemic.

In analysing my data, I first familiarised myself with the data, engaging with my field notes in my journal, interview transcripts, and student feedback. I then generated initial codes that identified key themes related to digital pedagogy, engagement, and challenges. Once I had clearly identified the themes, I organised the data into broader themes such as digital accessibility, pedagogical innovation, and student support. After in-depth reviewing and refining of the themes, I proceeded to write up the narrative on my digital teaching practices.

Making the research work

The objective of this action research study was to investigate and understand my experiences and the realities of teaching and learning in a digital age. I first had to receive ethical clearance from the university to sanction my action research—a procedure that took some patience. I was convinced that understanding the affordances of augmented and remote teaching in undergraduate programmes would not only advance the professional development of pre-service online teaching and learning, but it would also inform programme renewal activities and my own teaching and learning practices for the future. I have come to believe online teaching—whether integrated with face-to-face teaching or not—is here to stay. The project was therefore intended to analyse the efficacy of module renewal activities on student development and learning, namely, the affordances of online teaching to support the professional development of pre-service online teaching and learning.

This digital literacy project, initiated in 2023 and continued in 2024, followed an action research design. The action research process was all about engaging in a credible plan, then actioning it along with sound critical observation, followed by deep reflection on emergent findings. During my intervention, I made pertinent observations that I experienced during my interaction with my first-year Religious Studies Life Skills students. During the implementation phase, I engaged in a series of activities in my lessons, which I introduced to the students. Initially, I thought I was overextending myself, but my interaction with colleagues gave me the necessary confidence to continue. Below, I outline the four activities I engaged in with my class of 298 students, namely, setting up a chatbot, introduction of a flipped classroom, exposure to interactive digital workshops, and gamified learning experiences.

Pilot chatbot for undergraduate students

This activity was planned with the faculty manager of Engineering, whom I met at a digital transformation workshop held at Stellenbosch University under the guidance of Stellenbosch

Business School Professor Martin Butler. The objective was to enhance student engagement and support through an AI-powered chatbot, providing immediate assistance with frequently asked questions, academic support, and access to resources.

As part of the initiative to improve digital literacy and student interaction with online resources, I was ably assisted by my engineering colleague to design and launch a pilot chatbot for first-year undergraduate students. The chatbot was integrated into the university's LMS, SUNLearn, to assist students in navigating the course material, submitting assignments and answering general queries related to first-year academic life. The chatbot was programmed with responses related to common course content, deadlines, and institutional resources such as the library, IT support, and tutoring services. By using natural language processing, the chatbot aimed to respond to student inquiries in a conversational manner, providing an engaging, accessible, and immediate means of assistance. This chatbot initiative was introduced on a limited basis because I had to interact regularly with my engineering colleague and it remains a digital development in progress.

Introduction of flipped classrooms

The objective in introducing the flipped classroom was to shift the traditional teaching model and foster active learning by providing students with instructional content outside of class, and utilising class time for deeper engagement and problem-solving activities. To enhance both student engagement and digital literacy, I introduced a flipped classroom model for my first-year course. In this model, students were given access to pre-recorded lectures, interactive videos, and online readings via the SUNLearn platform before attending face-to-face classes. These materials were designed to present key concepts in an accessible, engaging format, encouraging students to familiarise themselves with the content ahead of time. Class time was then repurposed for collaborative activities such as group discussions and problem-solving tasks. Students used online discussion forums to explore the topics of the various religions in more depth, with the lecturer (me) serving as a facilitator of learning rather than a traditional teacher.

Interactive digital workshops for skill development

The objective in this activity was to provide students with the digital tools and skills necessary for achieving academic success in higher education including in research, collaboration, and communication. As part of the digital literacy enhancement initiative, I organised a series of interactive lessons for first-year students, focusing on the essential academic skills needed in a digital world. These lessons were held online and supplemented with asynchronous teaching and learning; they covered assignment research topics such as drafting a religious education policy for a school.

One of the lessons exposed them to the methods of effective online research. Here, I taught students how to evaluate online sources critically and use academic databases efficiently. I also had a special lesson on digital communication. During these lessons, I helped students learn to communicate professionally via email and online group platforms. I also had a lesson

where I invited my IT colleague to introduce the students to cloud-based collaborative tools such as Google Drive for group projects and peer-feedback activities. The lessons were designed to be hands-on, with students actively participating in tasks such as writing a research proposal using online databases, collaborating on a group project through cloud-based tools, and practising professional email etiquette.

Gamified learning experiences

The objective was to increase student motivation and engagement through gamification of certain course elements, leveraging the power of game mechanics to enhance learning. Incorporating gamification techniques into the learning experience was a key strategy I employed to enhance digital literacy in my undergraduate classroom. I designed a series of interactive online quizzes and challenge-based learning activities that students could complete as part of their coursework. These activities were integrated into SUNLearn and linked directly to the course content, encouraging students to apply their knowledge in fun and interactive ways. For example, students participated in a "Digital Literacy Quest," where they navigated through a series of Religious Studies Life Skills tasks such as evaluating online articles for credibility, completing a citation quiz, and solving collaborative puzzles to unlock content in the course.

How did I improve my online teaching and learning skills in the process?

As a lecturer engaged in implementing these digital initiatives, my own digital literacy grew significantly throughout the process. Below, I outline how my involvement in the various activities contributed to the improvement of my own digital literacy.

Developing and managing the chatbot: Enhancing technical and analytical skills

Under the guidance of my engineering IT colleague, we designed and managed the pilot chatbot for the first-year undergraduate students. In the process, I developed a deeper understanding of AI and natural language processing technologies. This process required me to learn how to create, test, and refine a chatbot to ensure it provided accurate and timely responses to students. Managing the chatbot also exposed me to the back end of LMS like SUNLearn, where I learned to integrate and manage technological solutions. I became more comfortable working with data analytics tools to track user interactions, assess the chatbot's effectiveness, and iterate on improvements. This experience not only improved my technical digital literacy, but also made me more comfortable with AI-based tools and how they can be applied to enhance teaching and learning.

Flipped classroom implementation: Learning new pedagogical models

The introduction of flipped classrooms required me to explore various digital tools for content delivery such as video recording software and interactive online discussion platforms.

I became more proficient in creating digital learning content, which directly enhanced my teaching methodologies. I also gained experience in creating interactive lesson plans that leveraged both asynchronous and synchronous learning models. The shift in my pedagogical approach helped me become more adaptable in using digital platforms to facilitate deeper student engagement, rather than relying solely on traditional lecture methods. Engaging within the flipped classrooms strengthened my ability to design and manage online and hybrid courses, thus improving my skills in digital pedagogy. This, however, remains a work in progress.

Running interactive digital workshops: Mastering collaborative tools

Organising and facilitating workshops on digital tools required me to familiarise myself with a wide range of collaborative technologies such as Google Drive and other digital research databases. Once again, the assistance of my IT colleague needs to be mentioned and acknowledged. As we helped students learn how to use these tools, I also became more adept at using them in my own academic and professional work. I learned to utilise cloud-based platforms for content creation, feedback, and collaboration with students, which enhanced my ability to guide students in remote or hybrid settings more effectively. I gained a deeper understanding of how to leverage digital tools for collaboration, critical thinking, and problem-solving in my own teaching practice.

Gamified learning integration: Adapting game mechanics to education

The incorporation of gamification into my course required me to explore game mechanics (e.g. points and leader boards) and apply them to my educational context. This process improved my skills in digital content creation, particularly in interactive quizzes and challenge-based activities. I also became familiar with the use of LMS to integrate gamified elements, which require you to learn more about the technical features of these platforms (e.g. setting up quizzes and creating custom gamified content). This was done with the guidance and assistance of one of my master's students. Her research was on the implementation of gamification within a secondary school classroom. The patience with which she assisted and guided me was invaluable. I improved my digital literacy by learning how to integrate digital games and engagement strategies into education, enhancing both student motivation and my own understanding of digital tools in education.

Online teaching and learning is a continual process of adaptation

Through this continual adaptation and learning, I was embracing technological change and improving my digital skills by communicating through digital platforms. Throughout this process, I demonstrated a proactive approach to technological change by experimenting with and adopting new tools and techniques to enhance my teaching. From video editing and course design to learning analytics and cloud-based collaboration, each phase of my action research project required me to step out of my comfort zone and learn new technologies. The iterative process of evaluating and improving the tools and strategies I implemented meant I was constantly updating my skills and practices based on feedback from students and

outcomes from the lessons. I gained confidence in my ability to use emerging technologies effectively and to adapt my teaching practices, and thus, continually building up my own digital literacy.

Throughout this process, I became proficient in using digital platforms for communication with students. Whether through email, online forums, virtual classrooms, or collaborative tools, I had to hone my skills in professional, clear, and timely digital communication. My ability to engage students in meaningful discussions, provide feedback, and offer guidance in an online environment greatly improved as I learned to adapt my communication style for digital platforms. Thus, I significantly improved my ability to communicate and facilitate learning in digital environments, a key aspect of digital literacy for educators.

Findings and discussion

To analyse the qualitative data collected through my reflective journal (field notes), student questionnaires, semi-structured interviews, and the focus group discussion held in the final term of 2024, I employed Braun and Clarke's (2006) thematic analysis approach. This method allowed for a systematic identification and interpretation of the key themes that emerged from my digital teaching and learning project. The steps guiding my data analysis process are described below.

Step 1 was familiarisation with the data. The first phase involved an in-depth engagement with the collected data. I transcribed the semi-structured interviews and the focus group discussion (7 October, 2024) verbatim, ensuring that no critical insights were lost. My reflective journal and student questionnaire responses were systematically reviewed to gain an initial understanding of recurring patterns. This process enabled me to immerse myself in the data, identifying preliminary ideas and notable observations regarding students' digital learning experiences. To manage and organise the data efficiently, I utilised qualitative data analysis software (NVivo) with the help of my colleague, which facilitated the categorisation of key concepts.

Step 2 was the generating of initial codes. Codes were developed using an inductive approach, allowing themes to emerge naturally from the data, while also taking into account existing theoretical frameworks on digital pedagogy. Some of the frequently occurring initial codes included:

- Digital accessibility, which made references to challenges with internet connectivity, device availability, and LMS navigation.
- Engagement and interaction regarding student reflections on how digital tools influenced participation and collaboration.
- Pedagogical innovation, referring to flipped classrooms, gamification, and interactive activities.
- Student support needs and concerns regarding digital literacy skills, online communication, and academic guidance.

Each code was carefully reviewed to ensure consistency and relevance to the research objectives.

Step 3 was the identification of themes within the digital project. After coding the data, I grouped related codes into broader themes that captured significant patterns in students' experiences with digital learning. The following key themes emerged:

- Digital accessibility and equity: Many students highlighted disparities in access to reliable internet, personal devices, and institutional digital resources. These barriers influenced their engagement levels and overall learning experience.
- Pedagogical innovation and student engagement: The integration of flipped classrooms, gamified learning experiences, and interactive digital sessions was widely perceived as beneficial. Students appreciated the flexibility of pre-recorded lectures and the interactive nature of in-class activities.
- Digital literacy and support structures: A recurring concern was the varying levels of digital literacy among students. Some found the transition to online learning intuitive, while others struggled with using digital platforms effectively. There were requests for additional training and support in student responses. Also, the digital divide was fairly evident amongst students. This digital divide does not just signify those who have access to the internet and those who do not. The gap also encompassed several other discrepancies including the quality of digital infrastructure in rural communities, the speed of connectivity in remote areas, and the training and skills required to navigate such technology.

My deliberations and discussions on the project made it evident that my teaching practices had evolved. My reflections as an educator demonstrated a transformation in my own digital competencies, from managing an AI-powered chatbot to leveraging collaborative online tools for enhancing student engagement. To ensure the robustness of my analysis, I reviewed and refined the identified themes through iterative engagement with the data. Themes were cross-checked with the current literature on digital pedagogy, ensuring alignment with established theories and frameworks. This step also involved peer discussions with colleagues to enhance the validity of theme interpretation and mitigate potential researcher bias.

The final step involved synthesising the findings into a structured narrative that critically engaged with the research question: "How did I as a teacher educator set out to improve my digital and online skills in my BEd undergraduate programme?" The discussion contextualised students' experiences within broader debates on digital learning, multimodal engagement, and equity in higher education. Findings were supported by direct student quotes and reflective excerpts, providing depth and authenticity to the analysis.

Many students encountered challenges in accessing digital learning as a result of technological constraints. One student noted:

> Sometimes, I couldn't participate in live sessions because of network issues at home. It made me feel like I was always behind my classmates.

Similarly, another expressed frustration over limited device access:

> Having to share a device with my siblings meant I couldn't always access the learning materials on time, which was frustrating.

Others found it difficult to navigate the digital environment, as one student pointed out:

> I found it difficult to navigate the LMS at first because I wasn't used to online platforms.

These experiences highlight the ongoing digital divide that affects student participation and engagement. Despite these barriers, innovative digital pedagogies enhanced student engagement. The implementation of a flipped classroom model provided flexibility, as one student reflected:

> The flipped classroom approach really helped because I could go over the material at my own pace before attending the live discussions.

Interactive tools also played a significant role in increasing engagement, as one student remarked:

> Using interactive tools like quizzes and discussion boards made learning more engaging. It felt more like a conversation rather than just a lecture.

Furthermore, gamification proved to be an effective strategy, with one student stating:

> Gamification made the learning process fun, and I found myself participating more actively than I would have in a traditional classroom setting.

These reflections demonstrate how digital methodologies can create more participatory and stimulating learning environments. A key insight from the study was the need for additional digital literacy support. One student admitted:

> I struggled in the beginning because I had never used some of these digital tools before. A few tutorials or workshops at the start would have helped.

The process of developing digital confidence was gradual, as another student explained:

> The more I used digital platforms, the more confident I became, but it took time. I think more support is needed for students who aren't familiar with these technologies.

Peer support was also instrumental in easing the transition, with a student highlighting:

> Having peer support groups helped a lot. Whenever I got stuck, I could ask classmates, and that made the transition easier.

These accounts underscore the importance of structured support systems in fostering digital competence among students.

Limitations

While the study yielded valuable insights, certain limitations must also be acknowledged. The study had limited generalisability. Given that this research was conducted within a specific cohort of first-year undergraduate students, the findings may not be fully generalisable to other disciplines or institutions. This study was limited to my first-year Life Skills students who, although they numbered 298, were not all actively involved. The self-reported data that reflected the student perceptions captured through questionnaires and interviews may be influenced by personal biases or recall limitations. There were also technological constraints because institutional and student access to digital tools varied, affecting the uniformity of engagement with digital teaching interventions. The rapid advancement of digital teaching technologies means that findings reflect a specific period (2023–2024) and may require reassessment in future educational contexts.

Despite these limitations, this research provides valuable contributions to understanding the role of digital interventions in enhancing online teaching and learning in undergraduate programmes. The thematic analysis underscores the importance of continual adaptation, institutional support, and innovative pedagogical strategies to foster an inclusive and effective digital learning environment.

Conclusion

In the process of implementing digital initiatives to improve student performance, I significantly enhanced my own digital literacy, becoming more proficient in using educational technologies, developing digital content, and integrating interactive and collaborative tools into my teaching practice. My engagement with emerging trends such as AI, flipped classrooms, gamification, and digital literacy workshops positioned me as a more adaptable educator, capable of evolving alongside technological advancements to meet the needs of contemporary students.

Beyond improving my own competencies, this experience provided invaluable insights into how digital tools can be leveraged to enhance student engagement, accessibility, and collaboration. The transition from traditional to digital pedagogical practices represents more than a methodological shift; it reflects a broader paradigm change in higher education. While digitalisation presents challenges, such as technological barriers and inequitable access, it also holds immense potential to create more dynamic and inclusive learning environments. As a teacher educator at Stellenbosch University, my commitment extends beyond mere adaptation; it is a continuing pursuit of refining and innovating pedagogical strategies to foster meaningful learning experiences. Moving forward, sustained collaboration among educators, institutions, and policymakers is essential to bridge the digital divide and ensure that digital education remains equitable, engaging, and transformative.

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