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GenAI-powered tools for digitalising curricula: A critical AI literacy appraisal

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Keywords

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GenAI-powered tools;
higher education;
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Abstract

The concept of digitalised curricula for the Fourth Industrial Revolution (4IR) is an exciting and evolving topic. Moving into the 4IR, the focus is on integrating advanced technologies like artificial intelligence (AI), machine learning (ML), robotics, and the Internet of Things (IoT) into higher education (HE) to create more personalised, efficient, and adaptive student learning experiences. 4IR has changed the pedagogical narratives from personalised learning to AI examinations in HE. This qualitative study explores the experiences of academics harnessing to digitalise curricula who participated in the online AI literacy training sessions on Generative AI (GenAI) tools at an open distance e-learning university (ODEL). Semi-structured online interviews were used to examine the views of participants. A purposive sampling of eight academics was interviewed on Microsoft Teams as a virtual platform. The transcribed data were uploaded and analysed using the computerised qualitative data software NVivo 14.0, and themes were identified. Findings reported that academics used GenAI-powered tools to create educational content for individual learning styles and paces for any course. Furthermore, virtual and augmented reality can create immersive learning environments for active student participation. Moreover, offering online learning options to accommodate diverse student needs was highlighted. To digitalise curricula, academics must be reskilled with AI literacy and other professional development sessions in critical thinking, problem-solving, and digital literacy to prepare students for future teaching professions. Participants facilitate collaboration through digital platforms (Moodle LMS), allowing students to work in team-based learning sessions. Finally, participants expressed concerns about the digital divide, data privacy, and ethics of using AI in digitalised curricula.

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Introduction

Artificial intelligence (AI) has significantly transformed our lives, from using chatbots to socially connecting with family and friends to advancing online banking activities or online shopping (Ahmed et al., 2024; Popenici et al., 2023; Van Wyk, 2025). Moreover, AI has significantly changed the operations of businesses, governments, and the higher education sector (Ilieva, 2023; Khawaja et al., 2023). Since the release of various AI-powered tools, profound transformations have exponentially impacted operations in higher education. Therefore, given the latter, the Fourth Industrial Revolution (4IR) brought an exciting and evolving focus on integrating advanced technologies like AI, machine learning (ML), robotics, and the Internet of Things (IoT) into the higher education (HE) sector. Rudolph et al. (2025, p 14) debunked this myth by critiquing recent developments in AI-powered tools as 'disruptive game-changers', leading to significant advances and improvements in academia. However, higher education institutions (HEIs) have been in "crisis for decades, shaped by funding cuts, market-driven reforms and increasing corporatisation of universities", and AI-powered tools are "disruptive game-changers" in this crisis.

HE staff have an opportunity to integrate AI to create more personalised, efficient, and adaptive student learning experiences (Almatrafi et al., 2024; Alqahtani & Wafula, 2025). Given this opportunity, 4IR has changed the pedagogical narratives from personalised learning to AI proctoring examinations in HEIs, ensuring ethical and quality assurance issues are adhered to; integrating Generative Artificial Intelligence (GenAI) into the educational curriculum is a transformative shift in pedagogical approaches across multiple disciplines (Chan, 2023; Van Wyk, 2025). Since tech companies have published large language models (LLMs), it has become powerful tools for reshaping educational practices by enhancing personalised learning experiences (Popenici et al., 2023; Rudolph et al., 2025). Therefore, integrating GenAI into curricula challenges lecturers and students to be skilled in using GenAI-powered tools (Joseph et al., 2024; Sevnarayan & Maphoto, 2024). Furthermore, developing digital literacy competencies is essential for lecturers and students to navigate the complexities of GenAI integration in curricula.

The two game-changers, the COVID-19 pandemic and the launch of LLMs, such as ChatGPT and similar chatbots, have impacted academia significantly. Moreover, the most profound "game-changer" was the release of ChatGPT, which has shifted, reshaped, and disrupted how academics traditionally teach. This sentiment is supported by Kolade et al. (2024), who concur that

ChatGPT is a disruptive game changer that further complicates and exacerbates the intractable challenge of essay milling, but also potentially offers new and promising pathways to learning and assessment (p. 2).

Given the latter, Rudolph et al. (2023) asked whether AI is a "personal digital assistant or job killer", and responded as follows:

The developments in the generative AI space are progressing at a dizzying speed, teachers can benefit from using generative AI... if they know how to use generative AI in a critically informed way, substantial productivity gains are possible (p. 9).

Academics have praised the benefits of ChatGPT and similar AI conversational tools but also expressed concerns about ethical considerations, plagiarism, data privacy, and the protection of personal information. This prompted the management of XYZ University to take advantage of the benefits of GenAI-powered tools and implement awareness sessions on the ethical use of GenAI-powered tools. Studies reported that universities had planned continuous professional development (CPD) training sessions, organised webinars, online discussion sessions, and off-campus training to increase awareness of AI literacy and to train academics in AI-generated tools for teaching and learning (Limongi & Marcolin, 2024; Valenzuela, 2025). Based on these initiatives, some academics employed what they had learned during the CPD sessions, but others remain reluctant to integrate AI technologies into teaching spaces.

Before writing this paper, I was a college facilitator of in-house CPD training sessions on AI literacy for college academics. This movement accelerated all efforts by the college to empower academics with knowledge and skills in using GenAI-powered tools and machine learning. Over the past three years, the college has organised several AI webinars, module writing sessions, and ethics and AI literacy training to empower academics and students with AI-generated tools for online learning communities. Moreover, studies reported that critical AI literacy is the ability to understand, apply, and critically evaluate the purpose of AI technologies, focusing on their ethical, social, and practical implications to achieve learning objectives (Huang et al., 2024; Ng et al., 2021; Velander et al., 2024). Rudolph et al. (2025, p. 18) argue that AI-powered tools "increasingly influence academia... [but] educators and students require the skills to discern between authentic human insight and algorithmically generated output." In response to this urgent appeal, it is expected that academics who have gained AI literacy skills through the college's Digitalisation Project will utilise their newly acquired knowledge and skills in their respective courses. The assumption is that they were trained to integrate AI technologies into online learning community spaces. The latter resulted in an investigation of academics to determine if they applied what they had learned to integrate AI technologies in their respective courses. The primary objective is to explore academics' views on integrating GenAI-powered tools into digitalised curricula to enhance learning outcomes and engagement in online learning communities. Based on the aim, specific research questions are stated:

- What are the experiences and perceptions of academics regarding their AI literacy training with GenAI-powered tools for digitalising curricula?

- What are the concerns among academics regarding integrating GenAI-powered tools into digitalised curricula?

Context of the study

This study was conducted at the teacher education college, one of the ten colleges at an open distance e-learning university (ODEL). In 2019, the University of South Africa implemented the ten catalytic niche areas: Fourth Industrial Revolution (4IR) and Digitalisation; Student support and co-curricular activities; Marine Studies; Aviation and Aeronautical Studies; Health Studies and Medicine; Automotive; Energy, Space Study and Square Kilometre Array; Feminist, Womanist and Bosadi Theorisations. Another essential matter that impacted the university and the college was the National Artificial Intelligence (NAI) Policy Framework, which was also launched nationally to accelerate the implementation of AI policy and guidelines of HEs (Department of Communications and Digital Technologies, 2024). The teacher education college focused on (4IR) and digitalisation at the university where the research is conducted.

Since then, the college has organised several webinars, online discussion sessions, and off-campus training sessions to increase awareness of AI literacy and provide practical training sessions on applying AI-generated tools in the modules. The AI literacy sessions were held in the ten departments throughout the year. The catalytic niche areas and AI Policy Framework accelerated the implementation of GenAI-powered tools in the teacher education college. The college's online webinars were focused on awareness of the ethical use of AI-generated tools for online pedagogy. It emerged and has been approved by the AI policy and guidelines. As part of the ongoing awareness and application of GenAI-powered tools for teaching and learning, assessment and support, the college established a flagship project, the Digitalisation Project, which identified specific modules as part of the catalytic niche area.

Based on the university and college strategic objectives and operational plan (2023-2030), academics were trained to use and apply the gained AI literacy skills in their respective courses. The university had approved AI-generated tools such as Grammarly (writing assistance in paraphrasing), Turnitin (detecting plagiarism) and CoPilot (generated text/context) for digitalised curricula and online pedagogy. The college management mandated that the authors of this paper conduct oversight visits to verify whether academics applied what they learned about AI literacy, ethics, and tools in their online courses. Moreover, academics in the context of this study were exposed to and capacitated with AI literacy, tools and technological skills. The assumption is that they will successfully integrate AI technologies into online learning community spaces. The latter resulted in an investigation of academics using GenAI-powered tools for online learning and teaching.

Theorising an online learning community (OLC) space

Ke and Hoadley define an online learning community (OLC) as "a developed activity system in which a group of learners, unified by a common cause and empowered by a supportive virtual environment, engage in collaborative learning within an atmosphere of trust and commitment" (2009, p. 3).

Studies have reported that OLCs have become essential to modern educational frameworks, particularly in online and blended learning environments (He, 2022; Jin et al., 2010; Kear et al., 2014). The theoretical grounding of OLCs is rooted in various educational and psychological theories that emphasise the importance of social interaction, community building, and collaborative learning (Lambropoulos, 2007). In this case, this synthesis explores the characteristics of OLCs, their theoretical foundations, and their implications for educational practice at an ODeL university.

The argument is that the core of OLCs is their participation in this study, which is related to active social online presence. Therefore, the degree to which participants (students and academics) feel socially and emotionally connected online is a component of a successful OLC. According to He (2022), social presence fosters engagement and interaction among online learners, enhancing their learning experiences. This aligns with the OLC, which posits that effective online learning occurs through the interplay of social, cognitive, and teaching presence (Chuang et al., 2016). The OLC framework underscores the necessity of creating a supportive community where learners can collaborate and engage meaningfully with course content and each other online.

Furthermore, the characteristics of OLCs are multifaceted. Jin et al. (2010) believe that thriving OLCs are characterised by a clear purpose, technological support, and established norms and policies. Concerning this single case, participants and lecturers facilitate a structured online environment (Moodle LMS) conducive to learning and collaboration. Furthermore, Chuang et al. (2016) emphasise that OLCs require participants to be socially and emotionally engaged to create a sense of community and cohesion, vital for successful collaborative learning activities. On the other hand, Kear et al. (2014) expressed concerns about low online presence but suggested that personal profiles can solve this concern. This will increase online engagement, often facilitated through various online tools and platforms, enabling community interaction, discussion, and resource sharing.

Another critical characteristic of OLCs is their adaptability to diverse learner needs and contexts, which is crucial. Research by Chinyamurindi et al. (2017) indicates that the usability of an online learning community significantly influences student engagement and interaction. This is particularly relevant in varied contexts, such as urban and rural settings, where learners may face unique challenges related to technology access, infrastructure, and learning styles. Therefore, the design and functionality of OLCs must be tailored to meet the specific needs of learners, particularly in varied contexts such as urban and rural settings (Lambropoulos, 2007). The

perceived effectiveness of an OLC is closely linked to its design, which should consider the unique challenges faced by different student populations.

Moreover, the role of peer support in OLCs cannot be overstated. Tang et al. advocate (2021) for strategies that encourage peer-to-peer interaction and teamwork, essential for building a collaborative learning environment. Such interactions enhance motivation and foster a sense of belonging among participants, which is crucial for their overall learning experience. Establishing a supportive community can increase engagement and improve learning outcomes as students feel more connected and invested in their educational journey.

The theoretical underpinnings of OLCs also draw from constructivist principles, which emphasise the importance of active participation and knowledge construction through social interaction. Wang et al. (2013) note that self-regulated learning strategies are essential for success in online environments, highlighting the need for learners to take an active role in their education. This aligns with the notion that OLCs provide a platform for collaborative knowledge construction, where learners can share insights, challenge each other's ideas, and co-create understanding.

In conclusion, OLCs emphasise social presence, collaborative engagement, and adaptability to learner needs. Grounded in theories such as the Community of Inquiry framework and constructivist principles, OLCs facilitate meaningful interactions that enhance the learning experience. As educational institutions continue to embrace online and blended learning models, understanding the dynamics and characteristics of OLCs will be crucial for designing effective learning environments that foster community, collaboration, and engagement.

Integrating GenAI-powered tools to digitalise curricula

Integrating GenAI-powered tools like CoPilot, Gemini, and ChatGPT into HEIs is rapidly transforming the educational landscape. This necessitates critically examining the implications for curriculum design, teaching methodologies, and student engagement.

According to Sauder (2024), GenAI can facilitate case-based learning for medical students by providing automated scoring, teaching assistance, and quick access to information, thereby streamlining the educational process. In addition, Cervantes et al. (2024)'s work underscores the growing recognition of GenAI's capacity to revolutionise pedagogical approaches and advance knowledge discovery in the medical field. This convergence of perspectives suggests a promising future for GenAI in healthcare education, with the potential to enhance learning experiences, personalise instruction, and accelerate research progress. Cervantes et al. (2024)'s work underscores the growing recognition of GenAI's capacity to revolutionise pedagogical approaches, particularly through its ability to generate case scenarios and create content tailored to individual learning needs (Cervantes et al., 2024).

Anderson (2024) highlights a critical challenge in integrating GenAI-powered tools into education. Academics often lack clear policies regarding GenAI tools, leading to concerns about model trustworthiness and ethical issues (Sevnarayan & Maphoto, 2024). Barrett & Pack (2023) highlight a similar critical concern: the lack of clear academic policies and guidelines regarding the acceptable use of GenAI-powered tools. This ambiguity raises concerns about model trustworthiness, ethical implications, and student adherence to academic integrity standards. The need for structured frameworks that guide the ethical and effective use of GenAI in educational settings is essential to mitigate risks associated with over-reliance on these technologies (Anderson, 2024; Barrett & Pack, 2023).

Moreover, the generational gap between students and lecturers presents additional challenges. Chan (2023) highlights that Gen Z students are more inclined to adopt GenAI-powered tools than their Gen X and millennial academics, suggesting that academics must adapt their teaching strategies to engage these digital natives effectively. This generational divide necessitates reevaluating pedagogical approaches to ensure that curricula remain relevant and engaging for all students, regardless of technological proficiency (Barrett & Pack, 2023).

The role of lecturers in this evolving landscape is critical. Ravarini (2024) proposes a conceptual framework that positions academics as creators and designers in integrating GenAI, emphasising the importance of collaborative co-creation and adaptive design in curriculum development. This framework encourages academics to leverage GenAI as a facilitative agent, enhancing the learning experience while maintaining their role as guides in the educational process (Ravarini, 2024). By fostering an environment of collaboration between academics and GenAI, institutions can create more dynamic and responsive curricula that meet the diverse needs of students.

Melash et al. (2020) argue that digital competencies should be incorporated into CPD training programmes to prepare future academics for the demands of a digitalised educational landscape. This sentiment is supported by Siddiq (2018), who emphasises the need for national curricula to reflect the competencies required for 21st-century education, including digital literacy. By embedding digital literacy within curricula, educational institutions can ensure that students and lecturers can utilise GenAI-powered tools effectively and ethically.

In addition to digital literacy, the ethical implications of GenAI use in education warrant careful consideration. Vallis (2023) discusses the importance of collaborative sensemaking with GenAI, advocating for reflective practices that enhance academics' understanding of the technology's implications. This approach encourages academics to engage with GenAI critically, fostering a culture of ethical awareness and responsible use within educational settings (Vallis, 2023). As the education landscape evolves, lecturers must remain vigilant about the ethical dimensions of GenAI integration, ensuring that student welfare and academic integrity are upheld.

The potential for GenAI to enhance educational outcomes is further supported by the findings of Ilieva (2023), who explores the transformative potential of AI chatbots in blended learning environments. Moreover, integrating intelligent GenAI conversational tools can facilitate interactive learning experiences, allowing students to engage with course material innovatively (Ilieva, 2023). This aligns with the broader digitalisation trend in curricula, as highlighted by Delcker (2022), who notes the increasing emphasis on digital content across vocational education. Incorporating GenAI-powered tools into curricula can thus enhance the overall educational experience, promote engagement, and improve students' learning outcomes.

Despite the promising potential of GenAI, challenges remain in its implementation. Brown et al. (2020) highlight the disparity between students' digital literacy levels and their ability to apply these skills in clinical settings, indicating a need for curricula that bridge this gap. This finding underscores the importance of practical training and real-world applications of digital skills within educational programmes, ensuring that students are adequately prepared for the demands of their future careers (Brown et al., 2020; Delcker, 2022).

The rapid advancement of GenAI necessitates ongoing professional development for lecturers to integrate these technologies into their teaching practices effectively. The authors argue that academics need continuous training to stay abreast of the latest developments in GenAI and acquire the necessary skills to leverage these tools effectively. Furthermore, the professional development programmes should equip academics with the tools and strategies needed to navigate the complexities of GenAI, fostering a culture of innovation and adaptability within educational institutions (Walczak & Cellary, 2023).

In conclusion, digitalising curricula through integrating GenAI-powered tools presents opportunities and challenges for HEIs. By embracing the potential of GenAI to enhance personalised learning experiences, academics can create more dynamic and responsive curricula that meet the diverse needs of students. However, this integration must be accompanied by a commitment to ethical practices, digital literacy development, and ongoing professional development for academics. As the educational landscape continues to evolve, institutions must remain proactive in adapting their curricula to harness the transformative potential of GenAI while addressing the challenges accompanying its implementation.

Digital divide, data privacy and ethical issues of GenAI tools
Integrating AI technologies has become increasingly pervasive in the rapidly evolving HEIs, transforming how students learn and engage with course materials. As academic institutions strive to adapt to the demands of the 21st century, concerns surrounding the digital divide, data privacy, and the ethical implications of using GenAI in digitalised curricula have emerged as critical issues that warrant in-depth examination. (Anderson & Rivera-Vargas, 2020).

The digital divide highlights the disparities in access to technologies and the internet, which can significantly impact

education equity (Gorski, 2005; Memon & Memon, 2025). Efforts to bridge this divide aim to ensure all students have equal access to digital resources like laptops and data for a digitalised curriculum (Afzal et al., 2023; Damarin, 2000). The increasing digitalisation of higher education institutions (HEIs), while offering expanded access to learning resources through digital learning spaces (Bygstad et al., 2022; Hamadi & El-Den, 2024), presents significant challenges. Concerns persist regarding exacerbating the digital divide, potentially further marginalising students with limited access to technology or digital literacy skills (Ahuja, 2023). This is particularly relevant in South Africa, where historical and socioeconomic disparities have contributed to a significant digital divide. Many South African students, particularly those from disadvantaged backgrounds or remote areas, may lack access to hardware, software, and reliable internet connectivity, limiting their ability to fully engage with the digital learning environment (Naidoo & Naranjee, 2023). Bridging this divide is a paramount challenge that must be addressed to ensure that all students, regardless of their socioeconomic status or geographical location, can benefit from the advancements in digital education.

Studies reported that data privacy and ethical concerns remain significant for HEIs when digitalising curricula (Ismail, 2025; Marshall et al., 2022; Vaza et al., 2024). Findings from these studies revealed that alongside the promise of digital transformation, there are growing concerns about the ethical implications of data collection and usage in digitalised curricula. The ubiquity of data breaches and the potential for misuse or unauthorised access to sensitive student information raise significant privacy concerns. HEIs must navigate a delicate balance between leveraging data for personalised learning and safeguarding the privacy rights of students (Van Wyk, 2024; Sevnarayan & Maphoto, 2024). Furthermore, using GenAI-powered tools in digitalised curricula in educational settings introduces additional ethical considerations (Akgun & Greenhow, 2022). Moreover, the dense nature of AI algorithms, often called the 'black box' problem, can lead to concerns about the transparency and accountability of these systems, potentially perpetuating unfair or harmful applications (Van Wyk, 2025).

Studies revealed that the ethical risks associated with GenAI-powered tools in HEIs have attracted the attention of governments, organisations, and academics worldwide, prompting in-depth reflections on the relationship between humans and technology (Akgun & Greenhow, 2022; Nguyen et al., 2023; Popenici, 2023). As GenAI-powered applications continue to permeate the educational landscape, policymakers, academics, and researchers must collaborate to develop robust ethical frameworks and regulatory guidelines to ensure that digital technology integration aligns with education's core values: accessibility, inclusivity, and the holistic development of learners.

Methodology

As part of the facilitation team of the college's Digitalisation Project, an invitation was sent to 104 academics trained in GenAI-powered tools and AI literacy. The sample consisted of eight academics who consented to participate in this

study. After receiving the signed consent applications, the date and time of the interview sessions were provided. Only the eight academics in the CPD training on AI literacy were selected. This qualitative approach used semi-structured online interviews to examine participants' views. Pseudonyms were used and coded to protect the identity of participants (males were Sam, Seth, Tebogo, Thabiso; females were Lisa, Sarah, June, Zandile). Before the interview sessions, participants were informed about their right to withdraw from the study if they felt uncomfortable at any stage of the project. The semi-structured interviews were conducted on Microsoft Teams as a virtual platform. The recordings and transcriptions were downloaded. The data presentation and analysis were designed in two stages. First, all the data sets (transcripts and recorded videos) were coded in the NVivo 14.0 system, uploaded into the computerised qualitative data software, and themes were identified. The data analysis used the NVivo 14.0 computerised qualitative software to create themes associated with the coded participants' extracts.

The following procedures were based on qualitative computerised software:

- The *project name* was created (digitalised curricula for online community);
- Uploaded *participants' codes* (gender, pseudonyms) and data sets of each case (extracts);
- Displayed preliminary results, made adjustments, and ran a *final version* of the qualitative software for generating themes;
- Downloaded *themes* linked to extracts, interpreting the results of participants' extracts; and
- Verified and compared the *original extracts of participants* linked to each theme for reporting.

Second, the verification was undertaken with participants who received the original transcripts (verbatim) and the themes generated by NVivo's qualitative computerised software. Each participant verified the original transcripts and compared them with the generated themes. After acceptance of the data sets, participants signed to validate the transcribed data and themes generated by NVivo (participant validation).

Findings

Findings reported that academics used GenAI-powered tools to create educational content for individual learning styles and paces for any course.

GenAI-powered tools are 'disruptive game-changers' that have reshaped the academic landscape

Participants were positive about how AI is reshaping the academic landscape. Furthermore, virtual and augmented reality can create immersive learning environments for active student participation.

For sure, GenAI has emerged as a powerful tool, a game-changer to reshape our educational practices by enhancing personalised learning experiences for students. There is no turning back; AI is the norm and is here to stay. We need to adapt to it or become redundant (Sarah).

Some opine that academics must create awareness in their respective modules of how best and appropriately students can use the tools. According to the participants, some students are miles ahead and, therefore, create dialogue for the ethical use of AI tools.

I agree! AI is not just a tool; it is reshaping the landscape of our subjects, and in my case, that is science. Instead of playing AI 'police,' I must empower my students to become AI-literate as science thinkers who understand and use AI responsibly (Seth).

Another participant said:

Yes! The AI revolution is unfolding all around us, and it's happening fast. The real choice isn't whether to engage with it but how we engage with it (Thabiso).

Empowered with AI literacy to increase academic competence

Participants agreed that CPD training on AI literacy was valuable for their respective courses. The AI literacy skills acquired during the project helped participants design practical tasks and assessments, providing them with guidance and support. Some were positive about the training, which most of them preferred.

Most of the sessions were informative and practical—they helped me apply what I had learned during the college training as a visible learner. The activities were appropriate for most of the six sessions (Sam).

Participants indicated that the sessions were well planned, the content was appropriate, and the sessions' facilitators and venues were excellent.

I like how the training sessions were planned; they were very practical in my module. The venue was conducive. There are no internet connectivity issues. The two facilitators were excellent and knowledgeable about AI literacy, and most of the tools we were exposed to provided motivation for me to implement what I had learned and apply my modules (Lisa).

AI literacy created confidence in integrating GenAI to digitalise curricula

The participants expressed gratitude for CPD training, as it enhanced their confidence in experiencing the benefits of integrating GenAI-powered tools in their respective modules.

I was sceptical about the benefits of GenAI-powered tools for online teaching. I am more confident about applying GenAI-powered tools in my online course. I spent more time planning and preparing for my online classes, but GenAI-powered tools like CoPilot have helped generate specific content for some of my learning units since the training (June).

Many felt that students had already used AI tools, and academics were lagging in using GenAI-powered tools for teaching and learning.

The revolution is already here. Our students already use AI—some ethically, others without guidance, simply because their lecturers are not equipped to show the way. The choice is not whether to join the AI revolution but whether we will help shape it or watch from the sidelines (Tebogo).

AI has profoundly changed how traditional examinations become authentic assessments

Participants believed GenAI has profoundly changed how traditional examinations turn into authentic assessments. Moreover, offering online learning options to accommodate diverse student needs was highlighted. To digitalise curricula, academics must be reskilled with AI literacy and other professional development sessions in critical thinking, problem-solving, and digital literacy to prepare students for future teaching professions. Participants facilitate collaboration through digital platforms (Moodle LMS), allowing students to work in team-based learning sessions.

After the AI literacy training, I had to rethink the type of assessment tasks, projects and future examinations for my courses. I changed all my previous tasks and decided to change the current type of examination to continuous assessment. I will complete the requirement changes in my tutorial letter 2026. My view is to move beyond traditional assessments and toward more authentic assessments. As said, AI literacy gave me the skills to change my assignments or project-based learning tasks (Zandile).

AI policy and providing guidelines for the ethical use of AI tools

Participants mentioned they were exposed to submitting inputs in the AI policy and guidelines. Over the past three years, staff and students were exposed to and aware of the module sites of AI policy and guidelines related to teaching and learning and academic integrity; now that we are exposed and empowered to use the AI policy and the guidelines, ignorance will not be tolerated in the university. This participant said:

Staff and students were widely informed of the approved AI policy and guidelines. These guidelines provided clarity on what GenAI-powered tools are allowed... We can use Grammarly, Copilot, Turnitin, and the Invigilator app. There is no excuse for ignorance. Consequential management will be applied if staff and students breach AI policy protocols (Lisa).

Most importantly, participants agreed that GenAI can be used, but that there needs to be an inculcation of a sense of ethically responsible use of generated AI tools. Participants expressed concerns about the digital divide, data privacy, and ethics of using AI in digitalised curricula.

Participants opined that we were capacitated of the approval and use of AI tools ethically:

For us, the ethical use of AI by students is a huge issue we must address. Students need guidance on how to use AI effectively and teach responsible usage—I informed my students about the ethical use of approved GenAI-powered tools (Sam).

On the other hand, this participant raised valid concerns about some of her students from rural communities and low socioeconomic status, which may impact accessibility and the lack of resources. Zandile echoed concerns:

My concerns are about the digital divide, data privacy, and the ethical implications of using GenAI in writing assignments and digitalising the content in my course. Students exploited these AI tools, and some cheated in assignments (Zandile).

Importance of creating awareness and empowering students to use AI-generated tools

Since ChatGPT was launched, many other GenAI-powered tools have flooded the public domain. These GenAI-powered tools are here to stay, and even better ones will emerge. Participants mentioned that these tools can generate subject content, detect plagiarism, design presentations, and support students' paraphrasing work. Participants felt they only had control of those GenAI-powered tools (Grammarly, CoPilot and Turnitin) approved by the university as stipulated in the AI policy and guidelines. If those GenAI-powered tools are allowed, they will be responsible for creating awareness and empowering students with AI literacy in their respective modules or subjects.

You cannot stop your students; they are using it. Whether you like it or not. I empowered and encouraged my students and colleagues to harness the possibilities of these tools. Used the generated content to enhance critical thinking (evaluate/assess) about the generated text/content for relevance for context, reflective thinking (reimagining/rethink), and problem-solving skills (June).

Some participants said they still need more training in these AI tools. They indicated that follow-up sessions to revitalise and refresh how some GenAI-powered tools operate can further strengthen their knowledge and skills.

The “cat and mouse” approach to AI detection is obsolete. As lecturers, we face a pivotal moment that demands a fundamental mindset shift (Sarah).

Concerns about the digital divide and the ethics of AI

Some participants expressed concerns about the lack of access to technologies:

For my students, the “digital divide” is about the gap between students with access to modern technologies. By the way, those without...could not access my module content and information; they became students-at-risk (Sam).

One participant’s research focuses on social justice and the digital divide. According to the participant, a lack of online presence is related to poor internet connectivity issues. This had an impact on his rural students. Located in rural areas, students could sometimes not be online because of missing learning opportunities.

In 2024, we experienced several challenges with electricity issues by Eskom (South African Electricity Supply Commission), which impacted my students in rural areas. Often, there is a lack of access to high-speed internet compared to urban areas (Sarah).

A concern raised by participants was that students are using AI tools unethically. A participant was extremely worried about the unethical practices used by students to risk the credibility of assessments:

Recently, I read a newspaper article in University World News that stated that about 92% of university students use AI to write assignments and examinations. We face a silent threat to our assessments and qualifications because AI-powered tools spread like wildfire, and traditional anti-cheating methods fail to keep up (Tebogo).

Protection of private information (data privacy) when using AI tools

During the interviews, participants agreed that data privacy is vital to protect our information. In 2013, the South African government introduced the Protection of Personal Information Act (POPIA Act 4 of 2013) to protect our personal information from unauthorised persons. Hence, the university had to comply with this act and update its

policy and guidelines.

Yes, we had the POPIA Act to protect data privacy... but still, you received “fake emails”, unidentified calls, and “spam” daily.. on your mobile phone or emails. I am worried that university officials used your information for personal gain or leaked information to unauthorised people (Seth).

GenAI-powered tools generated data that is biased and shows stereotyping.

For most participants, the ethics of using GenAI-powered tools constitutes a significant challenge, as do issues related to moral implications and potential risks associated with AI tools. Other issues participants highlighted were the biases of AI tools, which could portray discrimination, sensitive information and stereotyping information generated by AI tools.

There are always moral and ethical issues when using AI tools. I read an article on the biases of AI tools. This opened my mind about stereotyping and misinformation (Sam).

Discussion

The findings of this study revealed that the experiences and perceptions of academics regarding their training with the integration of GenAI-powered tools for digitalising curricula were very positive. The CPD training empowered them with AI literacy knowledge and skills to increase academic competence in using GenAI-powered tools in the course. Academics could apply AI literacy knowledge and skills to increase their modules’ social presence in OLCs. Therefore, the degree to which students and academics engage socially and emotionally as connected in online discussion forums is a component of a successful OLC (He, 2022). The digital transformation of HEIs has given rise to “digital learning spaces” where students can access educational resources virtually anywhere (Bygstad et al., 2022; Hamadi & El-Den, 2024).

The participants felt empowered that AI literacy was vital, which created confidence in integrating GenAI-powered tools to digitalise curricula to achieve learning outcomes and engagement in online learning communities. The ability of GenAI to generate case scenarios and create content tailored to individual learning needs can significantly enhance the learning experience, allowing academics to focus on more complex instructional tasks (Sauder, 2024; Cervantes et al., 2024). Participants said the CPD training created a paradigm shift and reshaped the academic landscape. Moreover, the generational gap between students and lecturers presents additional challenges. However, the successful training sessions related to AI literacy and tools empowered participants to guide and support students who are more inclined to adopt GenAI-powered tools and pedagogical innovative strategies to engage this digital-native population effectively (Barrett & Pack, 2023; Chan, 2023).

The findings of this study concurred with the role (participants) academics should play and that CPD initiatives to empower them were important for successfully integrating GenAI-powered tools in redesigning the content for their modules. Ravarini (2024) proposes a conceptual framework that positions lecturers as creators and designers in integrating GenAI, emphasising the importance of collaborative co-creation and adaptive design in curriculum development. As part of the CPD for this study, it argues that digital competencies should be incorporated into teacher training programs to prepare future academics for the demands of a digitalised educational landscape (Melash et al., 2020; Siddiq, 2018). It is argued that the digitalised curricula should be revised to reflect the competencies required for a 21st-century education, including AI and digital literacy skills. Participants mentioned that digital literacy became vital for student teachers in some learning units. However, the ethical implications of GenAI use in modules require careful consideration when implementing digital literacy. This approach encourages lecturers to engage with GenAI critically, fostering a culture of ethical awareness and responsible use within educational settings (Vallis, 2023). As the education landscape evolves, lecturers must remain vigilant about the ethical dimensions of GenAI integration, ensuring that student welfare and academic integrity are upheld.

Finally, participants raised concerns about the digital divide, data privacy, and discrimination regarding integrating AI into digitalised curricula. As academic institutions strive to adapt to the demands of the 21st century, concerns surrounding the digital divide, data privacy, and the ethical implications of using GenAI in digitalised curricula have emerged as critical issues that warrant in-depth examination (Anderson & Rivera-Vargas, 2020). Furthermore, one social justice issue, the digital divide, emerged during this rapidly changing environment, highlighting disparities in the socioeconomic student profiles to access AI technologies and the internet, which can significantly impact education equity (Gorski, 2005; Memon & Memon, 2025). Studies reported that more efforts are needed to bridge this divide and ensure all students have equal access to digital resources like laptops and data for a digitalised curriculum (Afzal et al., 2023; Damarin, 2000). However, this increased accessibility is not without its challenges, as the digital divide continues to be a significant barrier to equitable education (Ahuja, 2023). Many South African students, particularly those from disadvantaged backgrounds or remote areas, may lack access to hardware, software (tools of trade), and reliable internet connectivity, limiting their ability to fully engage (online presence) with the digital learning environment (Naidoo & Naranjee, 2023).

Implications

From a human capacity-building perspective, participants were empowered in AI literacy to develop curricula in their courses. They integrated GenAI-powered tools into their coursework, which led to confidence and motivation. Most participants embraced GenAI's potential to enhance personalised learning experiences. Therefore, they experienced the potential of GenAI-powered tools to

create more dynamic and responsive curricula that meet the diverse needs of students. However, as many raised concerns about GenAI, this integration must be accompanied by a commitment to ethical practices, digital literacy development, and academic professional development. Practically, participants agreed that the training, webinars, and online discussion forums had empowered them with AI literacy skills. However, Rudolph et al. (2025, p. 18) justified that "critical AI literacy must be at the forefront of higher education curricula as digital technologies reshaped not only how knowledge is created and disseminated but also how it is critically appraised". As the higher education landscape continues to evolve, universities must remain proactive in adapting and digitalising curricula to harness the transformative potential of GenAI while addressing the challenges accompanying its implementation.

From a policy perspective, integrating GenAI-powered tools into digitalised curricula in HEIs would have numerous social, practical, and ethical consequences that must then be carefully regarded and addressed in AI policy and guidelines. Students or academics are not guaranteed to adhere to AI policy or guidelines. Socially, AI can either bridge or exacerbate existing educational inequalities, digital divide, and stereotyping, depending on how it is implemented. It is feasible that AI can enhance operational efficiency and personalise learning, but it requires significant investment in infrastructure, training, and integration.

In this study, the example of CPD training is only one aspect of empowering staff practically in using AI literacy. However, other initiatives can be employed to enhance AI literacy and digital proficiency in HEIs. Consequently, AI must be deployed with a commitment to fairness, transparency, and data privacy, ensuring that students' rights are protected and that AI systems are used responsibly. HEIs must navigate these complex challenges to ensure that AI enhances rather than undermines the objectives of higher education, paving the way for a more equitable, efficient, and ethically sound future.

Conclusion

This paper has argued that the experiences and perceptions of academics regarding their AI literacy skills training to integrate GenAI-powered tools as game-changers for digitalising curricula were very positive and successful. The study found that the CPD training empowered participants with AI literacy knowledge and skills to increase academic competence by effectively using GenAI-powered tools in the course. The CPD training integrated GenAI-powered tools to empower academics to write effective prompts to create meaningful, personalised learning content for specific learning units. A second significant finding was that participants felt empowered in AI literacy, which is vital, and this created confidence in integrating GenAI to digitalise curricula to achieve learning outcomes and engagement in online learning communities. The participant's ability to use GenAI-powered tools to generate case scenarios and create content tailored to individual learning needs significantly enhanced their learning experience during the practical sessions. However, participants raised concerns about

the digital divide, data privacy, ethics and discrimination regarding integrating AI into digitalised curricula.

The current qualitative study only examined a small convenience sample of academics who participated in the CPD training on AI literacy to digitise curricula. This limitation needs further investigation by a larger sample of academics regarding the benefits and challenges of integrating GenAI-powered tools in teaching and learning. It would be interesting to assess the concerns raised by the participants in a larger sample of those who received CPD training in AI literacy. Therefore, undergraduate students must be included in similar studies about the awareness and use of GenAI-powered tools in teaching and learning.

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