Research Square

Preprints are preliminary reports that have not undergone peer review.
They should not be considered conclusive, used to inform clinical practice,
or referenced by the media as validated information.

AI-Enabled Pedagogy: Enhancing Teaching Practice and Student Learning With Genai in Distance Education

Zuleika Suliman

esulimz1@Unisa.ac.za

University of South Africa

Kershnee Sevnarayan

University of South Africa

Thuthukani Msomi

University of South Africa

Research Article

Keywords: Generative Artificial Intelligence, Distance Education, AI-Enabled Pedagogy, Teaching Practice, Student Learning

Posted Date: November 17th, 2026

DOI: https://doi.org/10.21203/rs.3.rs-11148502/v1

License: This work is licensed under a Creative Commons Attribution 4.0 International License.
Read Full License

Additional Declarations: No competing interests reported.

AI-ENABLED PEDAGOGY: ENHANCING TEACHING PRACTICE AND STUDENT LEARNING WITH GENAI IN DISTANCE EDUCATION

Corresponding Author: Ms. Zuleika, Suliman; (University of South Africa), South Africa, Pretoria, esulimz1@unisa.ac.za, https://orcid.org/0009-0009-6038-9621

Prof. Kershnee Sevnarayan; (University of South Africa), South Africa, Pretoria, esevark@unisa.ac.za, https://orcid.org/0000-0002-2446-8885

Mr. Thuthukani V. Msomi; (University of South Africa), South Africa, Pretoria, msomitv@unisa.ac.za, https://orcid.org/0009-0006-2871-2327

Abstract:

This article explores the innovative potential of generative artificial intelligence in distance education and focuses on its application to enhance teaching practice and student learning. The concept of AI-enabled pedagogy is introduced, where lecturers utilise generative artificial intelligence tools to create personalised, adaptive, and immersive learning experiences. A case study of a distance education module illustrates the effective integration of generative artificial intelligence in teaching practices and highlights its benefits in the automation of repetitive tasks, provision of synchronous feedback, and the facilitation of collaborative learning. The article also examines the challenges and limitations of implementing generative artificial intelligence in distance education which include concerns related to academic integrity, bias, and digital literacy. The findings of this study include perspectives into the potential of generative artificial intelligence to transform teaching and learning in distance education. The article provides implications for lecturers, policymakers, and researchers, and highlights future directions for research on GAI in distance education.

Keywords: Generative Artificial Intelligence, Distance Education, AI-Enabled Pedagogy, Teaching Practice, Student Learning.

IN REVIEW

INTRODUCTION

Remote learning has expanded in recent years and provides enhanced accessibility and flexibility for students. However, this growth also presents significant challenges for teaching and learning strategies. Zou et al. (2025) argue that traditional approaches, often characterised by static content and one-way communication, are increasingly inadequate to promote productive engagement and meaningful learning outcomes. Poor teaching practices further weaken Distance Education (DE) and leads to low motivation, high dropout rates, and poor academic performance and makes the need for effective teaching methods especially urgent (Maphoto et al., 2024; Rovai, 2002; Xu et al., 2025).

Traditional teaching approaches have long been critiqued for their limitations. Xu et al. (2024) note that lecture-based methods, common in online environments, may not support detailed learning or address the diverse needs of students. The lack of in-person interaction and immediate feedback can also intensify feelings of isolation among distance students (Kearns & Mancilla, 2014). These challenges highlight the need for innovative pedagogical strategies that can provide stronger support and support active learning in DE contexts. Recent developments in generative artificial intelligence (GAI) provide solutions to these long-standing issues. GAI enables personalised, adaptable, and interactive learning experiences (Bozkurt, 2023), with the potential to transform teaching and learning practices in open and distance learning environments (Maphoto et al., 2024; Zawacki-Richter, 2019). This study therefore examines how GAI-enabled pedagogy can enhance teaching strategies and student learning in DE that focuses on how lecturers may adopt and facilitate GAI-supported practices.

The increasing importance of remote learning is closely tied to growing labour demands, technological advancements, and the current need for flexible educational options. DE plays an important role to broaden access to higher education, especially for students in remote regions or those balancing employment and caregiving responsibilities. The University of S (US), used here as a pseudonym, exemplifies how DE can reach and support diverse student populations across South Africa. Research confirms DE's capacity to promote equitable access to quality education (Akintolu et al., 2024; Allen & Seaman, 2017). In the South African context specifically, DE has been shown to address national educational needs effectively, with US contributing significantly to this context (Gezani, 2024; Pitsoe, 2025). The introduction of

GAI marks a further change in the development of DE. GAI systems generate new text, images, and video based on patterns within large datasets (Pitsoe, 2025) and provide powerful opportunities for personalised and interactive learning. However, realising this potential requires lecturers to rethink their teaching approaches. Fawns (2019) argues that traditional methods.
reliant on static materials, are insufficient for a digital era that demands creativity, critical thinking, and active engagement. For GAI to be used effectively, lecturers must integrate it through pedagogically sound strategies that support student-centred learning.

The integration of GAI into DE also raises important questions about the role of lecturers, the development of learning materials, and the need for ongoing professional development. Chiu et al. (2025) emphasises that lecturers require new digital and pedagogical competencies to adopt GAI confidently and ethically. Without such skills, lecturers risk relying on outdated practices that fail to engage students or support diverse learning needs. Nikolopoulou (2025) further indicates the potential of GAI to support intelligent tutoring systems, automated evaluation, personalised learning materials, and feedback, tools that can substantially improve the quality of distance teaching if used effectively. Despite these opportunities, significant barriers remain. Many lecturers struggle to adapt to emerging pedagogies and to integrate advanced technologies into their practice (Imran et al., 2024; Maphoto et al., 2024). As of 2025, the adoption of GAI in DE is still limited by concerns around workload, ethical risks, and the perceived threat of job displacement (Chiuet al., 2025; Feng & Law, 2021). A lack of clear institutional policies and regulatory frameworks further complicates implementation. Lecturers worry that GAI may increase administrative tasks or lead to redundancy, particularly among those unfamiliar with the technology (Altukhi & Pradhan, 2025; Zawacki-Richter, 2019). These uncertainties fuel resistance and anxiety, directly hindering effective GAI integration.

This reluctance has direct consequences for students. In DE contexts, students depend heavily on individualised support and timely feedback. When lecturers are hesitant or unable to use GAI tools, opportunities to improve student motivation, engagement, and performance are lost (Kearns & Mancilla, 2014; Sevnarayan, 2024). This gap demonstrates the need for research that identifies the benefits, challenges, and best practices for GAI integration in DE, as well as institutional strategies to support lecturer readiness. The SWOT analysis in Figure 1 highlights GAI in DE by outlining its strengths to enhance learning, weaknesses related to lecturer

IN REVIEW

adaptation, opportunities for pedagogical innovation, and threats arising from policy and support gaps.

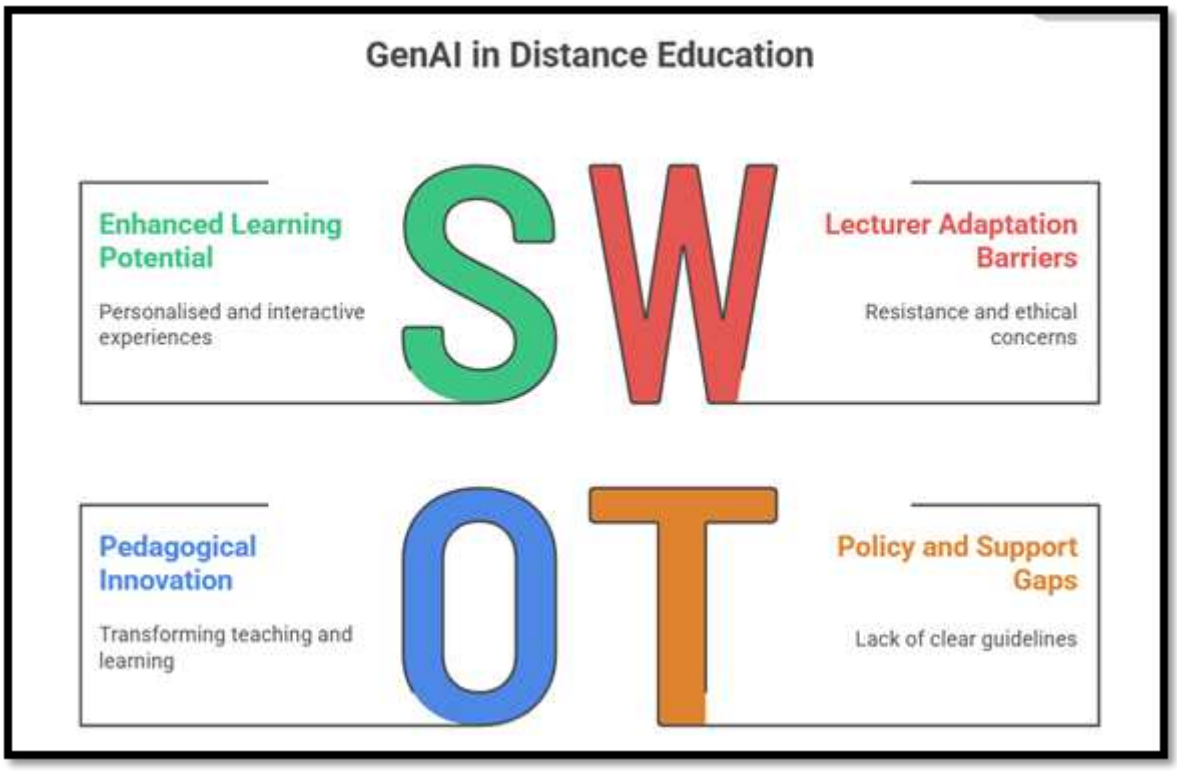


Figure 1. SWOT analysis that highlights the opportunities and challenges associated with GenAI integration in distance education.

The widespread adoption of remote learning since the COVID-19 pandemic has intensified the need for innovative and effective teaching strategies in DE (Imran et al., 2024; Maphoto et al., 2024). Although DE continues to expand worldwide, many lecturers face difficulties in adapting to new pedagogies and technologies. GAI represents one of the most significant yet challenging innovations in this field. While its potential benefits include enhanced personalisation, improved engagement, and increased efficiency, multiple concerns slow its adoption. These include fears about workload intensification, ethical implications, and job security (Chiu qet al., 2025; Feng & Law, 2021). The absence of practical institutional policies further reinforces uncertainty and resistance (Altukhi & Pradhan, 2025; Zawacki-Richter, 2019). As a result, lecturers may avoid or underutilise tools that could substantially enhance teaching and learning. Given that DE students rely heavily on timely feedback and personalised support, the limited use of GAI risks diminishing educational quality and exacerbating existing challenges (Kearns & Mancilla, 2014; Sevnarayan, 2024). Therefore, research is urgently

needed to explore effective, ethical approaches to GAI integration and to identify strategies that can empower lecturers to adopt GAI-based pedagogies confidently and competently.

The following research questions were used to inform the study:

1. How do lecturers perceive the potential of GAI to enhance teaching and learning in their ENG2266 module, and what are the key factors influencing their willingness to adopt GAI in their practice?

2. In what ways do students experience and interact with GAI in their ENG2266 module, and how does this impact their engagement and motivation?

3. What AI design features and functionalities on the ENG2266 site support or hinder effective teaching and learning, and how do these features impact the user experience?

LITERATURE REVIEW

Lecturer Perceptions and Use of GAI

Lecturer responses to the use of GAI in DE vary widely, ranging from enthusiastic adoption to cautious scepticism. These attitudes often reflect differences in digital competence, institutional preparedness, and pedagogical alignment. Kim et al. (2025) examined both faculty and student perceptions of GAI in higher education, revealing generally positive attitudes toward its potential to support teaching and learning. Their findings show that while faculty valued GAI for tasks such as streamlining administrative work and enhancing feedback processes, they remained cautious about issues of academic integrity and the potential for student misuse. The study concludes that successful GAI adoption in higher education depends on ongoing professional development, ethical awareness, and clear institutional policies that guide its pedagogical implementation. Almisad and Aleidan (2025)'s survey of more than 1,000 faculty members revealed that while most recognised GAI's pedagogical potential, only 18% felt confident integrating it into assessment. This reveals a persistent gap between perceived usefulness and actual implementation. Among students, Sallam et al. (2024) reported widespread ChatGPT use in UAE universities, with 85% indicating prior engagement. Their

IN REVIEW

TAME-ChatGPT model demonstrated that perceived usefulness, ease of use, and social influence strongly predicted adoption, whereas risk perception and anxiety reduced willingness to engage. These findings highlight that students readily adopt GAI tools when they are accessible, beneficial, and low-risk. However, broader studies warn of concerning systemic issues. Likewise, Selwyn (2024) cautions that growing enthusiasm for digital technologies, that includes emerging GAI systems, often overshadows the need for ethically grounded and pedagogically coherent integration. Based on a digital degrowth perspective, Selwyn (2024) argues that educational technologies should prioritise sustainability, intentionality, and meaningful learning rather than unchecked adoption driven by novelty or market pressures. His analysis reinforces the importance of critically evaluating GAI tools to ensure they genuinely enhance teaching and learning rather than reproducing inequities or unnecessary technological dependence.

Msekelwa (2022) examined the effectiveness of digital technologies in supporting teaching and learning within UNISA's Open Distance Learning (ODL) environment. The study found that while technology offers significant potential to enhance communication, accessibility and student engagement, its impact is undermined by persistent infrastructural challenges, uneven digital skills, and limited interaction between lecturers and students. Overall, the findings highlight the need for more robust technological support systems and targeted capacity-building to strengthen the effectiveness of online teaching in South African ODL contexts. Furthermore, much of the existing literature remains centred on Global North institutions and therefore fails to account for the socio-economic inequalities, linguistic diversity, and infrastructural limitations that redefine teaching and learning in under-resourced, multilingual DE contexts. Against this backdrop, the present study addresses a critical gap by examining South African lecturers' perceptions and adoption of GAI in DE. It provides context-specific perspectives into the affordances and constraints of GAI in high-enrolment, resource-limited contexts that contribute to a more globally inclusive understanding of GAI's role in contemporary DE.

Student Experiences and Outcomes with GAI

Research on student interaction with generative AI (GAI) has grown rapidly, with studies increasingly examining its effects on engagement, academic performance, and self-regulated learning (SRL). For example, Pan et al. (2025) found that AI-enhanced feedback significantly

improved EFL students' strategy use, motivation, and sustained engagement in reading tasks. Students also use GAI tools for academic support: Kasneci et al. (2023) report that higher-education students commonly employ large language models to summarise texts, generate explanations, and draft written content, viewing them as cognitive scaffolds that compensate for limited instructional support. Similarly, Cotton et al. (2023) observed that students regard GAI tools as "study companions" that help close feedback gaps in large or asynchronous learning environments. Despite these benefits, uncertainty about responsible and ethical use remains widespread; Lee and Moore (2024) found that students often lack clarity about academic integrity expectations when using GAI for coursework. In addition, Hu and Chan (2025) caution that while GAI can support students facing linguistic or conceptual difficulties, over-reliance may impede the development of independent critical-thinking skills. Collectively, these findings illustrate GAI's capacity to promote learner autonomy, personalised support, and interaction in higher-education language learning, while highlighting the need for guidance on ethical and balanced use. Nguyen and Truong (2025) conducted a systematic review examining emerging trends in the use of generative AI in education across multiple disciplines and global contexts. Their analysis shows that GAI tools consistently support personalised learning, automate routine academic tasks, and enhance student engagement, yet evidence of their long-term impact on higher-order skills remains limited. The authors emphasise the need for more context-sensitive, ethically informed, and pedagogically grounded implementations of GAI, particularly in technology-mediated learning environments.

GAI Design Features and Functionalities in Educational Platforms

The functionality and pedagogical design of AI-enhanced learning platforms play a central role to guide how students engage with GAI tools. Recent reviews highlight that adaptive feedback, personalised content pathways, predictive analytics, and automated support mechanisms are transforming digital learning environments. Hariyanto et al. (2025) emphasise that adaptive learning systems underpinned by GAI techniques significantly enhance personalised learning by dynamically adjusting tasks, feedback, and difficulty levels to meet student needs. Complementing this, Altukhi and Pradhan (2025) argue that explainability and transparency are essential design principles for trustworthy GAI systems, noting that opaque GAI decision-making processes limit user confidence and hinder pedagogical adoption. A global systematic review by Luo et al. (2025) synthesised 63 studies and found that GAI-based learning tools consistently improved knowledge acquisition and motivation, although evidence of long-term

IN REVIEW

skill development remains limited, especially in under-resourced and DE contexts. Within the South African higher education context, these concerns are echoed by Pramjeeth (2024), whose study of academics revealed persistent challenges related to data privacy, equality, accessibility, and responsible tool use. Although lecturers recognise GAI's potential to improve feedback quality and support workload management, confidence in applying it effectively remains uneven. Collectively, these studies illustrate that while GAI provides significant opportunities to personalise learning and enhance engagement, effective and ethical integration requires transparent system design, careful pedagogical alignment, and targeted capacity-building initiatives, particularly in DE environments characterised by diverse student needs and uneven technological access.

THEORETICAL FRAMEWORK

The Community of Inquiry (CoI) framework, developed by Garrison (2011), is the theoretical foundation for this article and posits that meaningful learning experiences emerge from the interrelationship of three core presences; cognitive presence, teaching presence, and social presence. It becomes imperative to interrogate how each presence is redefined when mediated not only by digital platforms but also by intelligent systems which are capable of generating content, simulating dialogue, and providing feedback. Cognitive presence refers to students' abilities to construct meaning through reflection and discourse. In the era of GAI, this raises important questions about the depth and authenticity of cognitive engagement. Teaching presence encompasses the design, facilitation, and direction of learning experiences. GAI may introduce new dimensions to this presence in automating instructional tasks such as content creation, assessment generation, and feedback provision. However, the change toward AI-enabled pedagogy necessitates a rethinking of lecturer roles and responsibilities. Social presence relates to the extent to which students feel connected and engaged in a learning community (Garrison et al., 2010; Garrisson, 2011).

CoI enables a critical analysis of how GAI tools influence each dimension of learning and to what extent they support or hinder meaningful educational engagement. For instance, the framework allows researchers to interrogate whether AI-generated content truly supports cognitive processing or merely facilitates surface-level comprehension, as suggested by student feedback and indicates that some responses were perceived as overly generic or lacking

contextual relevance. The CoI framework not only helps contextualise the empirical findings but also elevates the study's contribution as it provides a theoretically grounded, critically reflective approach to understand the affordances and constraints of AI-enabled pedagogy in DE.

METHODOLOGY

This section outlines the research approach, paradigm, design, sampling procedures, data-collection methods and data-analysis strategies used to examine the integration of GAI-enabled pedagogy in the ENG2266 module at a DE institution. The ENG2266 module, which is provided by the Department of English Studies at a DE institution is the specific subject of this study. A sizable and varied student body attends a DE institution, and many of them depend on the Moodle Learning Management System (LMS) to access module materials, communicate with peers and lecturers, and turn in assignments. The examination of how AI-enabled pedagogy can improve teaching methods and student learning outcomes in a distance learning environment is made possible by the incorporation of GAI into this context.

Research Approach and Paradigm

The present study adopts a qualitative research approach situated within an interpretivist paradigm, which seeks to understand how individuals make meaning of their experiences within a specific social and educational context. Qualitative research is particularly suited to studies that explore perceptions, interpretations, and lived experiences, as it allows the researcher to examine phenomena in depth rather than measure variables numerically (Creswell, 2013; Denzin & Lincon, 2018). Furthermore, "qualitative researchers study things in their natural settings, attempting to make sense of or interpret phenomena in terms of the meanings people bring to them."

(Denzin & Lincoln, 2018, p. 10) Within an interpretive design, reality is understood as socially constructed, context-dependent, and guided by participants' meanings, a perspective that aligns with the study's aim of exploring how lecturers and students experience and interpret the integration of GAI in a DE context. "The interpretive research paradigm...places a primary emphasis on the investigation of subjective meanings and the realm of human experiences."

IN REVIEW

(Al-Ababneh, 2020, p. 77). As such, an interpretive qualitative approach is more appropriate here because the goal is not to test hypotheses or quantify attitudes, but to understand how and why participants ascribe meaning to GAI within a South African DE context. The interpretive paradigm therefore allows the researcher to prioritise depth over breadth and to remain responsive to the nuances, contradictions, and complexities that emerged through participants' narratives (Ngulube, 2015; Shensul, 2012).

Research Design

The current study intentionally adopts a qualitative case study design to explore the integration of GAI within a specific DE module. The purpose of this study is not to combine datasets but to generate rich, contextualised understandings of participants' experiences, something far better served through qualitative inquiry. As Creswell (2013, p. 97) explains, "a case study is an in-depth exploration of a bounded system, drawing on multiple sources of information to develop a detailed understanding of a real-life situation." Case study research therefore enables an in-depth examination of a bounded system that allows the researcher to investigate a contemporary educational phenomenon within its authentic context (Creswell, 2013). In this study, the "case" is the ENG2266 module at a South African DE institution, where GAI has been intentionally integrated into the teaching and learning environment.

Population and Sampling

The population for this qualitative case study comprises all students enrolled in the ENG2266 module and the lecturers responsible for teaching it. The module serves approximately 1600 second-year education students at a South African DE institution. This student cohort is linguistically diverse that consists of both Home Language (HL) and First Additional Language (FAL) English speakers and reflects the broader multilingual and multicultural profile of DE students in the Global South. In addition, the English Department has a population of 50 lecturers, although only a subset is directly involved in teaching the ENG2266 module. Given the study's interpretive qualitative orientation, a purposive sampling technique was employed to ensure the selection of participants who could provide the richest and most relevant perspectives into the integration of GAI within this module. Purposive sampling is appropriate for qualitative case studies because it allows the researcher to select participants based on their knowledge, experience, and direct engagement with the phenomenon under investigation.

Palinkas et al., (2015, p. 534) argues that, “purposive sampling is widely used in qualitative research for the identification and selection of information-rich cases related to the phenomenon of interest.” Therefore, this approach ensures that the sample reflects the diversity of the DE learning contextdes variation in linguistic background, technological proficiency, and exposure to GAI tools.

A purposive sample of 10 lecturers involved in teaching ENG2266 and 50 students enrolled in the module was therefore selected. The lecturers were chosen because of their direct role in designing, delivering and mediating GAI-enabled teaching and learning activities. The student sample included individuals from both HL and FAL groups to capture a wide range of experiences, given the study’s focus on the accessibility, usability and pedagogical relevance of GAI in a multilingual DE environment. This sampling strategy supports the study’s objective of generating contextually grounded perspectives into how GAI guides teaching presence, cognitive engagement and student motivation within a high-enrolment DE module.

Instruments

Online surveys were designed and administered via the Moodle LMS to collect quantitative data on students’ and lecturers’ perceptions and experiences regarding the integration of GAI tools in the ENG2266 module. The survey will include items on usability, effectiveness and perceived benefits of GAI to enhance teaching and learning. Semi-structured interviews were conducted with students and lecturers to gather qualitative data. These interviews will explore participants’ in-depth experiences, challenges and benefits associated with the use of GAI in teaching and learning. Finally, in response to RQ3, which investigates the design features, user experience, and pedagogical affordances of GAI within the module, the researchers conducted systematic observations of the ENG2266 Moodle site. Observational data allowed the researcher to interpret how GAI tools operated within real instructional contexts and how these features linked to, or diverged from, principles of effective teaching presence, cognitive engagement, and usability.

Data Analysis

Qualitative analysis of the lecturer emails, student evaluation responses, and Moodle site observations was conducted using manual thematic analysis that allowed the researcher to

IN REVIEW

identify patterns of meaning across the dataset. The analysis followed a systematic interpretive process in which the researcher read, coded, compared, and refined segments of data to develop coherent themes. This approach is well suited to case study research, as it enables the integration of multiple qualitative data sources while preserving the depth and contextual richness of participants' experiences.

FINDINGS

Lecturers' Perceptions and Adoption of GAI

This section presents findings related to Research Question 1, "How do lecturers perceive the potential of GAI to enhance teaching and learning in their ENG2266 module and what are the key factors influencing their willingness to adopt GAI in their practice?" The analysis draws on qualitative data collected from three lecturers in the module whose perspectives were gathered through open-ended interviews. Their responses reveal a diverse view of GAI's role in higher education. The findings are organised into two interrelated themes:

The Perceived Potential of GAI to Enhance Teaching and Learning

All three lecturers expressed a belief in the innovative potential of GAI to support student learning and improve pedagogical efficiency. They highlighted several ways in which GAI tools such as ChatGPT, Meta AI and Copilot could be used to enhance accessibility, personalise teaching and support diverse students in a DE context. A recurring theme was the idea that GAI enables students to learn at their own pace and receive instant support which is important in a DE context where synchronous interaction is limited:

> Students can use GAI to summarise their notes, their lectures, and to understand what is expected of them… it acts as a tool that is available to students around the clock, which is something we as distance education lecturers are not able to do for our students (L1).

> It provides explanations, summaries, and alternative interpretations of difficult subjects… [and] can reduce language barriers like translating content or transforming text into other formats such as audio or visual summaries (L3).

These statements indicate that lecturers in the module see GAI not only as a supplemental resource but also as a democratising force in education, especially for students who speak English as an additional language and who may struggle with comprehension in traditional text-heavy modules. Lecturers also described how they actively included GAI in their teaching practices to streamline tasks and enrich the learning experience. L1 noted that, "We have used AI to create PowerPoints out of students' study guides, students have been asked to use AI to generate feedback on their assessment responses and to learn from it… We have also used GAI to come up with authentic texts for our students in their contexts". L2 stated, "GAI is one of the latest technological tools that we can teach in education and [it is] what the students are aware of… we are thus able to meet the students on the ground level." These accounts suggest that lecturers are not merely passive observers of GAI but active co-creators of AI-enhanced pedagogy, where they use the technology to produce instructional materials, provide formative feedback, and design interactive activities that resonate with digital-native students.

Moreover, the lecturers emphasised that GAI could serve as a bridge between theory and practice, especially in a module focused on preparing future teachers:

> Many have found its use very engaging and motivating and they have mentioned that they have learned a lot and will be emulating our style in their teaching one day when they are employed. We are their role models, and we have had such great feedback from our students when it comes to our use of GAI on our site (L1).

The lecturer's acceptance of GAI reflects its broader vision as a pedagogical model; not just for delivering content, but for demonstrating responsible and creative uses of GAI to future lecturers.

Barriers, Risks, and Conditions for Effective Adoption

While all three lecturers acknowledged the benefits of GAI, they also expressed concerns about its integration with regards to academic integrity, over-reliance, and the need for institutional support and guidance. These concerns influenced their cautious and conditional approach to the adoption of GAI technologies. One issue raised by all lecturers was the risk of misuse and over-dependence among students who might use GAI to generate answers without engaging with the material:

IN REVIEW

> Because of GAI's ease and accessibility, students may just copy and paste generated responses and send them off as their own… the responses appear to be flawless but in fact, on closer inspection, it is not what we are looking for (L1).

> Students' answers are similar. This shows that students have not engaged with the study material or the assignment and thus no learning has taken place (L2).

Lecturers reported that they take proactive steps to mitigate these risks, which include explicit instruction on appropriate use, repeated emphasis on critical engagement, and the introduction of an GAI self-disclosure template:

> We have shown them through explicit guidance what our expectations are… Students also had to complete an AI self-disclosure which definitely minimised risks a lot (L1).

> We teach the responsible use of GAI. We do not make the use of GAI taboo. Instead, we teach them how to use it in a productive manner and thus the students enjoy the module and are much more productive (L2).

These strategies highlight a proactive response to AI-related challenges and frames GAI not as a threat, but as a pedagogical challenge which requires careful scaffolding. Despite their enthusiasm for GAI, all three lecturers expressed frustration with the lack of institutional clarity and policy direction regarding GAI use:

> We definitely need a voice from the university regarding its stance on AI generation… Currently, we see lots of seminars, bootcamps, webinars, and workshops on how AI can be used in our teaching and students' learning but thus far, we have not had any guidelines; for example, if students can use GAI or not (L1).

> There is a lot of technical and pedagogical support for lecturers, but we hardly see our lecturers using these skills on their students. Most simply ignore AI and move on with traditional teaching and learning styles (L3).

This ambiguity creates a fragmented implementation of understanding where individual lecturers must explore ethical and practical questions without consistent institutional backing.

L1 argued, “I do think that the university should have a strong stance, even though their stance is implied, we need more guidance from them.” Lecturers argued that without formal guidelines, many lecturers remain hesitant or resistant to adoption, which is often due to fear of job displacement or misuse. L1 further stated, “We really need to move away from this fear-based mentality that AI is going to take away our jobs.” Another major concern was the digital literacy gap amongst both students and lecturers. While students may be familiar with GAI tools, lecturers stressed the importance of guiding them toward responsible, informed use:

> We need to role model the behaviour they should exhibit when they go to schools and encounter these issues with their learners. As lecturers, it starts with us (L1).

> Students are using GAI regardless, so instead of no steps being taken and then GAI being used in the wrong manner, institutions need to accommodate the growing needs of the student in a world that is moving more towards the digital (L2).

Lecturers further pointed to broader ethical implications, which include algorithmic bias, data privacy, and the potential for reinforcing superficial understanding. L3 stated, “GAI technologies run the risk of producing biased or inaccurate results, which, if left unsupervised, could influence students to use unethical or inaccurate teaching methods.” This suggests that while lecturers see value in GAI, they also understand the need for interrogation of its outputs.

Students’ Experiences and Engagement with GAI

This section presents a critical exploration of 50 students’ experiences with GAI in the ENG2266 module and drew from qualitative feedback across multiple open-ended prompts. The findings are organised under three key themes: students’ experiences with GAI, engagement with module materials, and their motivation to learn.

Students’ Experiences with GAI in The Module

Students’ encounters with GAI were marked by a spectrum of responses which ranged from excitement and curiosity to confusion and ambivalence. Many students approached the tools with optimism and appreciated their speed and accessibility, “It’s fast, efficient and effective to use, you don’t wait long for a response, and I believe it’s reliable” (S13, S15, S20). However,

IN REVIEW

not all students found the experience straightforward. Some described confusion or discomfort, particularly when GAI did not behave as expected. For example, some students noted, “It looked nice but it’s tricky” (S7) and “At first, I was afraid to open AI tools” (S10, S12). These statements point to a digital literacy gap among students which suggests that familiarity with technology does not equate to fluency with GAI. This raises important questions about the assumption of digital nativism, which is a common but problematic belief in educational technology circles that younger generations inherently understand and benefit from digital tools.

More critically, some students noted limitations in the depth and adaptability of GAI responses. S19 argued that GAI is “Sometimes too general in responses”. S22 also mentioned that “It just introduces different sections instead of actually helping me understand the material” (S22). This reflects a recurring discourse in GAI-enabled pedagogy that while GAI excels at surface-level explanations and summarisation, it struggles with contextual understanding, conceptual scaffolding, and higher-order thinking. Students who required more cognitive engagement often found the tools insufficiently responsive to their needs.

Importantly, several students provided creative suggestions that reflect an emerging student-led vision for GAI integration:

> Maybe adding a feature where more examples are generated to create a clearer picture for explanations and text-to-speech options for auditory learners like myself (S34).

> Voice recognition, examples, interactive activities, and progress monitoring are possible future additions (S37).

These proposals indicate that students are not passive recipients of GAI tools but active co-creators where they envision GAI not as a static resource, but as a partner in learning which should transform to meet diverse cognitive, affective, and sensory needs.

Engagement with Module Materials

Many students reported that access to GAI tools encouraged them to revisit and explore module materials more efficiently.

> Just knowing that the avatars are there kind of pushed me to go back to the materials and think about them more. It felt like having someone to bounce ideas off, even if it was virtual (S46).

> Tutor Pro kept me actively interested as it provided individualised and interactive learning help, which did indeed boost my engagement. (S50).

However, these benefits were not universally experienced. Several students emphasised that the impact of GAI on engagement depended heavily on personal learning preferences. For example, S5 noted, "I still prefer reading things on my own." S8 similarly said, "Some of the voices are very robotic and tends to annoy me, so I would turn the sound off and read the subtitles." These findings highlight a critical issue. Although GAI tools may enhance engagement for some students, they may alienate or overwhelm others; especially those who require text-based, self-paced, or reflective modes of learning. This suggests that learning style diversity remains underacknowledged in current GAI implementations.

Moreover, one student raised an equity concern, "What happens to students who may not have access to the materials which support the avatars?" (S34). This underlines the need for inclusive design practices that consider both technological access and learning diversity. It also highlights the risk of technological determinism, the idea that better tools automatically lead to better outcomes, without attention to social, economic, and cultural context. Interestingly, students explored innovative ways to use GAI tools beyond their intended functions:

> I used it to test me on unit 1, and I was quite impressed by the way it phrased the questions, analysed my responses, corrected it and offered me feedback" (S6).

> It can be a great support when I'm busy with teaching other learners (I am a teacher), and it can give students extra practice or feedback (S33).

Such uses suggest that students are not only adapting to GAI but they also utilise it as a learning companion rather than a mere helper. This shift has significant implications for how we conceptualise student agencies in GAI-enhanced contexts.

IN REVIEW

Motivation to Learn

One of the most consistent findings across students' responses was the positive impact of GAI on motivation, especially among those who felt isolated or overwhelmed in the distance learning environment. S46 noted, "Having the GAI on the module site encourages me to engage more frequently with the module content because I know there's immediate help if I get stuck." Another student, S29 stated, "It made me feel more confident to go through the module materials because I know help is just a click away." For many, the constant availability of support reduced anxiety and encouraged persistence, especially during late-night study sessions or weekends when human support was unavailable. Consequently, not all students experienced the same level of motivational gain. Some linked their engagement and motivation directly to how useful they found the tool:

> The site has so much information. I enjoy using the AI chatbot in the module. I use it to test myself and ask it questions for content I do not understand. I like the virtual teaching avatars, they make the learning journey in this module so much more fun. I am also enjoying all the videos and especially how open our lecturers are with AI. (S14).

> Still not sure how I feel about it yet (S30).

> I will say it was very strange at first, but it is getting better. The lecturers are very supportive of us and I am learning about how to use it the right way (S13).

The students' responses suggest that motivation is conditional on perceived relevance and responsiveness; students are not automatically motivated by GAI integration; they must see value in it. It also indicates a need for adaptive GAI systems that can adjust their tone, pace, and depth based on user feedback and learning trajectory. Several students reflected on how their experiences with GAI might influence their future roles as future teachers:

> I would definitely use this AI-powered tool to benefit my learners! This module was so motivating and inspiring, you guys did an excellent job in using AI. This is the first module where I can say that its use was done so well. I know how to use it ethically, responsibly and creatively and i can teach my learners in class to do the same (S44).

> I would use similar tools to support learners with grammar, writing tips, and revision activities. I loved the avatars throughout the site, they are so interactive and i am sure my learners will enjoy this in schools (S17).

These responses indicate that students see GAI not just as a learning aid but as a professional development tool which does prepare them to teach in increasingly digitised contexts. Yet, this view is not unproblematic as it assumes a smooth transition from students to lecturers, without fully addressing how GAI might alter pedagogical values, classroom dynamics, or assessment practices. Notably, one student provided a cautious but insightful perspective:

> I would only recommend it for other modules if it becomes more than just an introduction tool and actually teaches content in a way that supports different learning styles. Our study guide was broken down into understandable notes in the presentations and the videos you created with AI. I am a visual learner, so this has helped me a lot. I especially liked the AI bot as well. It was very practical, and my skills have sharpened from its use (S10).

This statement encapsulates a central critique running through much of the data. While GAI tools provide functional benefits, they appear to fall short in delivering cognitive scaffolding or adaptive instruction, which are two essential components of effective teaching.

GAI Design Features and Functionalities in Educational Platforms

The integration of GAI into the ENG2266 module represents a deliberate attempt to innovate pedagogical practices within a DE framework. The Moodle site has been carefully designed using a tile-based format to enhance useability, accessibility and student engagement. This section introduces and critically explores eight key design features and functionalities (Figures 2–9), which illustrate how GAI tools are used to support teaching and learning. Upon entering the ENG2266 Moodle site, students are greeted by an AI-generated welcome video that provides an overview of the module's objectives, content structure, and learning outcomes. Figure 2 shows the video, and below, an AI-powered avatar appears, that speaks directly to students about expectations, assessment timelines, and available support structures.

Each paragraph should be neither too long nor too short. Unnecessary abbreviations should be eliminated, and necessary ones should be explained in clear terms at first mention. Metric equivalents for all non-metric units should be provided.

IN REVIEW

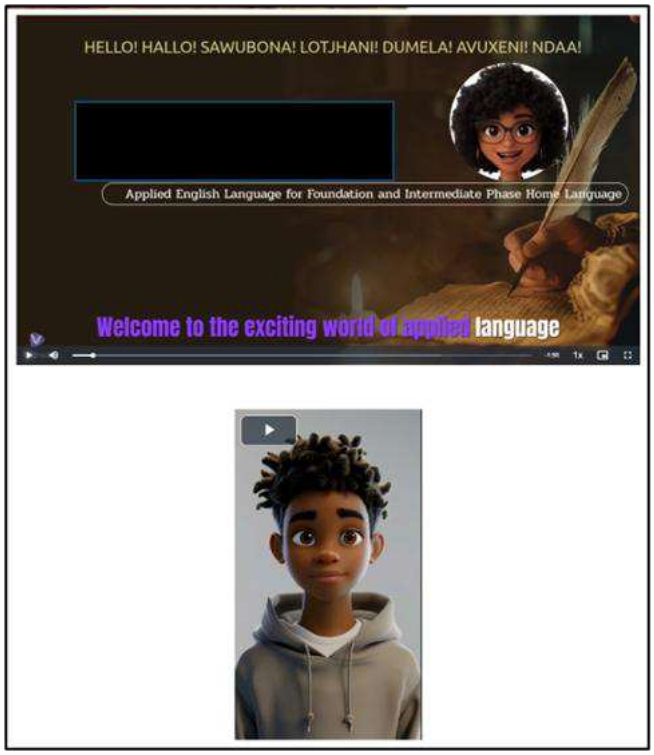


Figure 2. GAI videos and virtual teaching assistants

Importantly, the avatars are intentionally diverse, which represent various races, genders, and accents, to reflect the multicultural composition of the student body. This inclusivity was noted positively by several students, "I was surprised but once I got to understand then I realised that it would make learning easier" (S4). However, not all students found this feature to be intuitive or beneficial. S8 lamented, "Some of the voices are very robotic and tends to annoy me, so I would turn the sound off and read the subtitles." This suggests that while the videos, Avatars serve as an important orientation tool, its design must change to improve accessibility and user experience, particularly for auditory students or those with low digital literacy.



Figure 3. Assessment resources incorporating GAI-generated multimedia alongside study materials, podcasts, and student support resources

Students interacted with the avatars feature differently: S2 mentioned, "It made studying feel less stressful because I know I'm not alone when I need help." S22 argued, "It just introduces different sections instead of actually helping me understand the material." While it appears that many students appreciated the personalised nature of the avatars, others felt that the interactions were superficial or lacked depth. Some students suggested enhancements such as, "If it could provide more personalised feedback based on my progress, that would make a difference" (S21). This indicates that while the avatar improves accessibility and immediacy, it currently lacks the cognitive responsiveness needed to scaffold learning tasks effectively. Lecturers utilised ChatGPT slide builder and other GAI tools to generate simplified PowerPoint presentations for each unit of the study guide. Figure 4 below shows an example on one slide which breaks down concepts, includes examples, and provides short activities with answers.

Each tile in the module opens to reveal a dedicated avatars, as shown in Figure 3 below, designed to guide students through specific units or assessments. These avatars introduce content, provide guidance and scaffolding aligned with lecturer input.

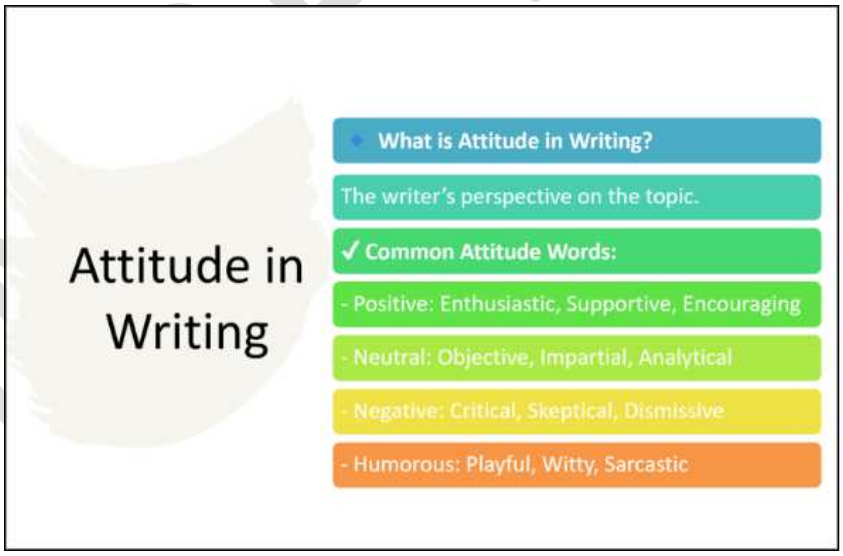


Figure 4. PowerPoint presentations created using GAI to support teaching and learning.

As one student added, "the notes in the presentations are very helpful. I am working single mother, and this saves me a lot of time!" (S47) Another student noted, "I wish I could ask the lecturer a question from this presentation. If it could be automated that way" (S31). These responses suggest that while AI-generated materials can be effective for supplemental learning,

they must be paired with original lecturer input to ensure academic rigour and conceptual depth. To further support comprehension, lecturers created short instructional videos (approximately 3 minutes) using Vidnoz. Figure 5 below shows an animated character who explains key concepts and provides visual reinforcement of textual material.

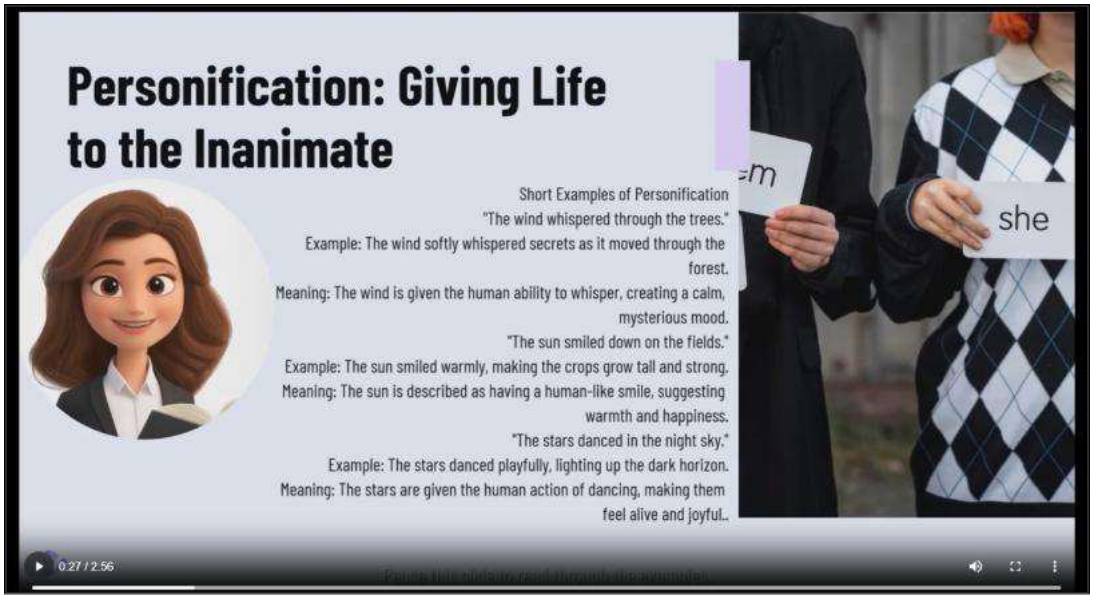


Figure 5. GAI-generated videos used to enhance teaching and support student learning.

Students generally praised the clarity and brevity of these videos. S4 said, “The videos are clear, short and insightful on each content and even provide examples to enhance understanding” (S4). Yet, concerns emerged around voice quality and over-simplification, S22 noted, “Some of the accents are distracting or not too understandable during the first listen”. This highlights a challenge in AI-driven instruction where multimodal delivery should be both inclusive and cognitively appropriate to avoid alienating students. The module makes use of an AI chatbot, trained on the full module content, and allows students to ask questions, receive explanations, and generate practice quizzes. It supports multiple languages and adaptive learning levels which aim to support diverse linguistic and proficiency needs.

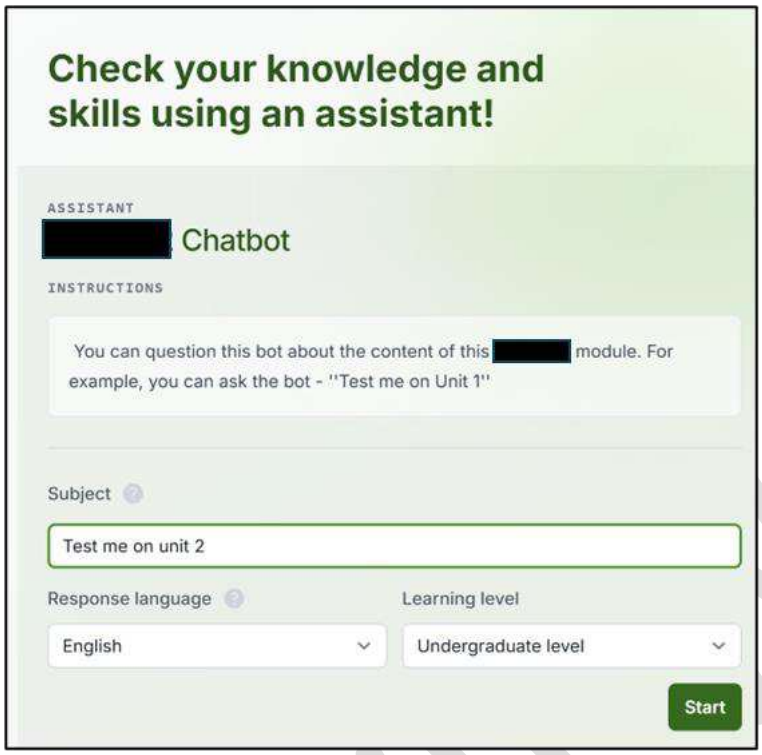
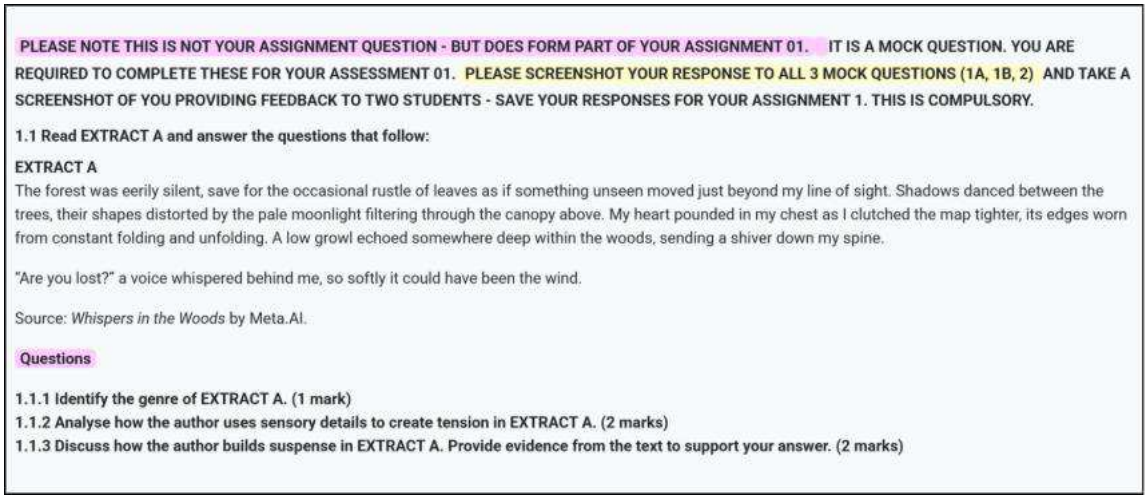


Figure 6. ENG2622 AI chatbot designed to provide students with interactive learning and academic support.

Students reported mixed experiences regarding the AI chatbot demonstrated in Figure 5 above. S2 mentioned, "It made me feel more confident to go through the course materials because I knew help was just a click away" (S2). However, S8 warned, "It could give inaccurate information as AI isn't perfect." Despite its utility to provide just-in-time support, the chatbot's possible limitations in accuracy remain a barrier to engaged learning. One student provided a balanced view, "Although I prefer the old method… I would have to say more as AI is the future, so we ought to learn to use AI and keep up with technology and understand concepts clearly at the same time" (S9). This reflects a cautious optimism among students who 23ustomiza GAI's potential but remain sceptical of its current capabilities.

The lecturers in ENG2266 used Meta AI and other platforms to create practice texts and mock assessments, as shown in Figure 7 below, where students were provided opportunities to test their knowledge and refine their writing skills. This functionality allowed for quick content generation and 23ustomization.

IN REVIEW



PLEASE NOTE THIS IS NOT YOUR ASSIGNMENT QUESTION - BUT DOES FORM PART OF YOUR ASSIGNMENT 01. IT IS A MOCK QUESTION. YOU ARE REQUIRED TO COMPLETE THESE FOR YOUR ASSESSMENT 01. PLEASE SCREENSHOT YOUR RESPONSE TO ALL 3 MOCK QUESTIONS (1A, 1B, 2) AND TAKE A SCREENSHOT OF YOU PROVIDING FEEDBACK TO TWO STUDENTS - SAVE YOUR RESPONSES FOR YOUR ASSIGNMENT 1. THIS IS COMPULSORY.

1.1 Read EXTRACT A and answer the questions that follow:

EXTRACT A

The forest was eerily silent, save for the occasional rustle of leaves as if something unseen moved just beyond my line of sight. Shadows danced between the trees, their shapes distorted by the pale moonlight filtering through the canopy above. My heart pounded in my chest as I clutched the map tighter, its edges worn from constant folding and unfolding. A low growl echoed somewhere deep within the woods, sending a shiver down my spine.

"Are you lost?" a voice whispered behind me, so softly it could have been the wind.

Source: *Whispers in the Woods* by Meta.AI.

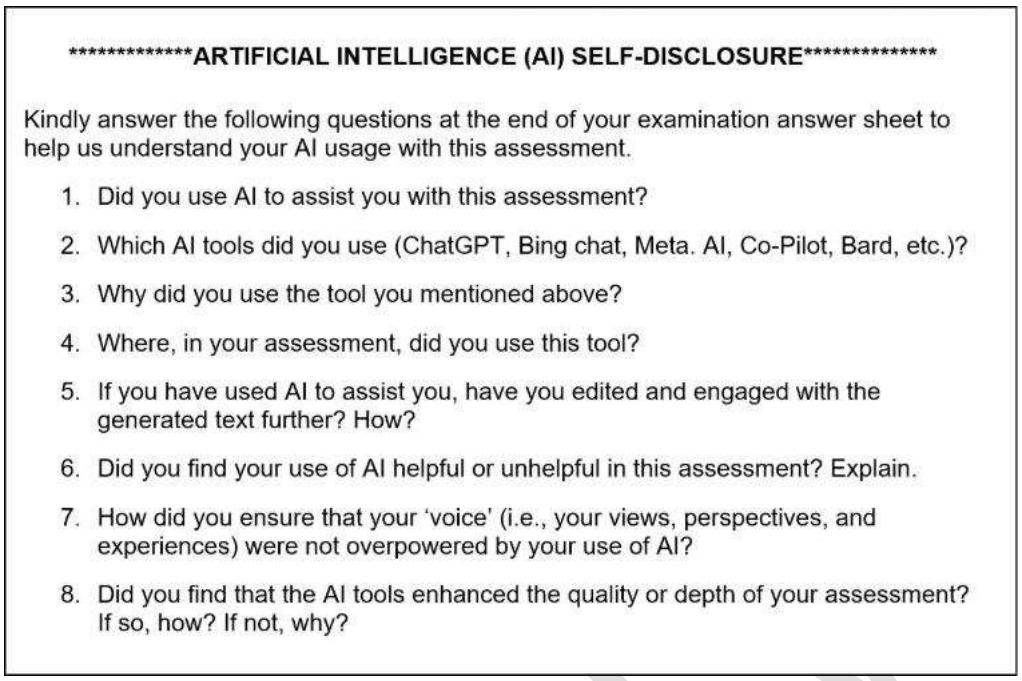
Questions

1.1.1 Identify the genre of EXTRACT A. (1 mark)
1.1.2 Analyse how the author uses sensory details to create tension in EXTRACT A. (2 marks)
1.1.3 Discuss how the author builds suspense in EXTRACT A. Provide evidence from the text to support your answer. (2 marks)

Figure 7. Learning texts and assessments created using GAI to support teaching and learning.

Lecturers welcomed the ease and speed of the use of GAI to create these mock assessments. L1 said, "Something that would have taken me 2 hours to do was done in under 10 minutes. Of course, I had to read and fact check and edit to make sure what I am testing is in line with the learning outcomes of the module". L2, however, noted, "As much as it is easy to generate quick texts for our students, we need to be careful of over-reliance and always make sure we check for bias, cultural insensitivity, and make sure it is beneficial for students". This dissonance emphasises the need for clear ethical guidelines and pedagogical insight when lecturers use GAI-generated content for assessment. After completing each assignment, students are required to submit an AI-self disclosure template, as shown in Figure 8, which indicates whether and how they used GAI tools in their work.

After completing each assignment, students are required to submit an AI-self disclosure template, as shown in Figure 8, which indicates whether and how they used GAI tools in their work.



**********ARTIFICIAL INTELLIGENCE (AI) SELF-DISCLOSURE**********

Kindly answer the following questions at the end of your examination answer sheet to help us understand your AI usage with this assessment.

1. Did you use AI to assist you with this assessment?
2. Which AI tools did you use (ChatGPT, Bing chat, Meta. AI, Co-Pilot, Bard, etc.)?
3. Why did you use the tool you mentioned above?
4. Where, in your assessment, did you use this tool?
5. If you have used AI to assist you, have you edited and engaged with the generated text further? How?
6. Did you find your use of AI helpful or unhelpful in this assessment? Explain.
7. How did you ensure that your 'voice' (i.e., your views, perspectives, and experiences) were not overpowered by your use of AI?
8. Did you find that the AI tools enhanced the quality or depth of your assessment? If so, how? If not, why?

Figure 8. AI self-disclosure questions designed to promote transparency and reflection on students' use of AI in assessment.

This disclosure statement assists the markers to understand how students have used GAI in their formative and summative assessments. From observation of recordings, lecturers also hosted many live stream sessions and explained their expectations regarding GAI use, which included permitted applications like editing and idea generation. Students responded positively to this approach, "I feel free to use GAI in this module. If only other modules could do this too. We feel heard and we feel included when lecturers like you give us the freedom to express ourselves" *(S11)*. Nonetheless, two students voiced hesitation and noted that they felt uncomfortable declaring GAI use because they were afraid markers would penalise them (S9, S12). This illustrates the importance of setting clear boundaries and expectations for students, where lecturers ensure that students understand the responsible and ethical use of GAI in academic contexts.

Discussion

The findings demonstrate that GAI is regarded simultaneously as a promising pedagogical innovation and a potential source of risk within DE systems. This tension reflects the broader global pattern identified in the literature, GAI enhances learning possibilities, but its use is constrained by ethical uncertainty, uneven access, and concerns about academic integrity

IN REVIEW

(Kasneci et al., 2023; Cotton et al., 2023). Lecturers in this study valued GAI to extend student support in high-enrolment DE contexts where timely interaction is difficult. Students similarly described GAI as motivating and empowering and this links to studies that show GAI tools can scaffold comprehension, summarisation, and idea generation (Chan & Hu, 2023; Pan et al., 2025). Yet both groups expressed uncertainty around responsible use that echoes calls for stronger ethical guidance and institutional clarity (Lee et al., 2024; Pramjeeth, 2024). The study affirms that successful GAI integration requires more than individual experimentation, it demands context-responsive pedagogical governance, ethical literacy, and targeted institutional support, conditions that are critical in multilingual and resource-constrained DE contexts.

Lecturers' interpretations of GAI reveal both appreciation of its pedagogical potential and awareness of systemic limitations. They indicated GAI's ability to mediate content, automate aspects of feedback, and enhance instructional availability to support literature that identifies GAI as a tool for personalised learning and reduced cognitive load (Kasneci et al., 2023; Bozkurt, 2023). However, the findings also show that these affordances are insufficient to transform teaching presence on their own. CoI framework emphasises that teaching presence relies on deliberate design, facilitation, and direction (Garrison et al., 2010). This study corroborates that lecturers' adoption remains tentative in the absence of institutional scaffolding, clear policies, and GAI-specific training, GAI use (Pramjeeth, 2024). Such constraints challenge technologically deterministic assumptions in Global North literature, which often presume that innovation naturally enhances teaching practice (Fawns, 2019). The findings therefore contribute a Global South perspective, GAI can extend teaching presence in DE, but only when embedded within supportive institutional ecosystems that cultivate ethical readiness, professional competence, and structural clarity.

Student engagement with GAI complicates linear narratives of empowerment or dependency. Many students used GAI as a reflective learning companion, consistent with evidence that scaffolded interaction can improve SRL and comprehension (Pan et al., 2025). Others, however, described confusion, over-reliance, or shallow engagement that mirror concerns that GAI may encourage shortcuts rather than detailed inquiry (Cotton et al., 2023). According to the CoI framework, cognitive presence emerges not from technology itself but from guided meaning-making (Garrison et al., 2010). Our findings reflect this, students who used GAI to revisit materials, clarify concepts, or generate explanations demonstrated stronger engagement

yet those that encounter generic or decontextualised outputs reported weaker cognitive depth (Chan & Hu, 2023). Furthermore, in high-enrolment DE contexts with limited lecturer immediacy, students often experienced GAI as a form of "relational support," that echoes earlier work on the value of timely feedback and presence in online learning (Kearns & Mancilla, 2014). Yet this study also problematises GAI-mediated social presence by questioning whether simulated interactions risk masking systemic gaps in staffing, access, and responsiveness, issues disproportionately felt in Global South institutions.

The analysis of platform features shows that GAI's educational value depends less on novelty and more on how well its design relates with cognitive, teaching, and social presence. Elements such as adaptive feedback, multimodal explanations, and conversational agents resonate with principles identified in recent GAI design research (Luo et al., 2025; Hariyanto et al., 2025). However, students' critiques reveal persistent issues, generic responses, limited contextual relevance, and opaque decision-making processes. These findings support Altukhi and Pradhan's (2025) argument that explainability and transparency are essential for trust and effective learning.

The current study's results also challenge Global North-centric assumptions about universal accessibility. In multilingual, resource-variable contexts, GAI designs that fail to account for linguistic diversity, infrastructural inequity, or cultural nuance risk amplifying existing disparities (Pramjeeth, 2024; Selwyn, 2024). A significant contribution of this study is its identification of an emerging "self-disclosure mechanism" within GAI interactions. students felt more confident when the system explained its limitations, rationale, or uncertainty. This kind of transparency is rarely operationalised in current frameworks but proved pedagogically meaningful in our context. Thus, the study advances the field by showing that responsible GAI integration requires culturally adaptive, ethically grounded, and context-sensitive design architectures, what we describe as design justice in GAI-mediated DE.

Conclusion, Implications and Recommendations

As opposed to much of the existing literature dominated by Global North perspectives, this research illuminates the unique affordances and constraints of GAI adoption in a high-enrolment, multilingual and resource-constrained context in the Global South. The concept of 'GAI-enabled pedagogy' is substantiated through concrete examples of how lecturers creatively utilised GAI tools for content creation, automated feedback, personalised learning

IN REVIEW

and enhanced accessibility. Importantly, the study reveals the multifaceted, often contradictory perceptions of both lecturers and students. Although participants recognised GAI's innovative potential for increased engagement, motivation and student support, they grappled with concerns regarding academic integrity, over-reliance, superficial learning, algorithmic bias, and the critical lack of institutional policy and support. The findings emphasise that the success of GAI in DE is not just a technological issue but hinges fundamentally on pedagogical intent, ethical scaffolding, and contextual readiness.

The implications for DE highlights GAI's potential to partially address challenges such as limited tutor presence, large class sizes, and varied student needs to provide scalable, on-demand support. However, it also cautions that without thoughtful integration, GAI might exacerbate existing inequalities or lead to surface-level learning which emphasises the need for pedagogical frameworks and inclusive design. For GAI in education, the findings imply a significant design imperative. Current GAI tools, while functional, often lack the depth, adaptability, and cultural sensitivity required for effective cognitive scaffolding. Developers and lecturers should collaborate to create GAI systems that are not just responsive, but genuinely interactive, and capable of adjusting to diverse learning styles and linguistic needs, and transparent about their limitations. The study also reveals the ethical ambiguities surrounding GAI use, which suggests an urgent need for GAI platforms designed with built-in mechanisms for critical engagement. For lecturers, the implications are profound. They must transition from traditional content deliverers to designers and facilitators of GAI-enhanced learning experiences, which requires new competencies in GAI literacy, critical evaluation of GAI outputs, and ethical guidance. The research highlights the urgent need for institutional support, clear policies, and professional development to empower lecturers to adopt GAI confidently and effectively, and to move beyond fear and hesitation. For students, the study indicates that GAI can act as a motivational tool and a 'study companion' which creates a sense of connection and immediate assistance. However, it also places a new responsibility on them to develop critical digital literacies to use, evaluate, and ethically use these tools. The findings suggest that students are not passive recipients but active co-creators of their GAI-enhanced learning context.

Based on the study's findings, several practical and context-specific recommendations emerge for replication and further development:

- Universities, particularly those engaged in ODeL, should urgently develop and disseminate clear, comprehensive institutional policies regarding the ethical and pedagogical use of GAI. Concurrently, mandatory, ongoing professional development programs should be implemented for lecturers, which focuses on GAI literacy, critical evaluation of GAI outputs, ethical integration strategies, and practical skills for using specific GAI tools within pedagogical frameworks.
- Develop and pilot a structured 'GAI-enabled pedagogy framework' for distance education modules. This framework should provide practical guidelines for lecturers on how to integrate GAI tools into the CoI model, and to ensure that cognitive, teaching, and social presence are enhanced rather than undermined. It should include templates for GAI-enhanced activities, strategies for scaffolding critical engagement with GAI outputs, and methods for the use of GAI self-disclosure effectively, as demonstrated in the ENG2266 module.
- Integrate explicit modules or workshops on 'Critical GAI literacy' into the curriculum for distance learning students. This should cover understanding how GAI works, evaluating the reliability and potential biases of AI-generated content, practicing ethical use (including proper attribution and avoiding plagiarism), and developing strategies to use GAI as a learning scaffold.
- Educational technology developers and institutions should collaborate using an iterative design process and use direct feedback from both lecturers and students (as suggested by students' creative ideas in the findings) to refine GAI features. Specific areas for improvement, based on the study, include enhancing the naturalness and clarity of avatar voices, increasing the cognitive depth and personalisation of avatar and chatbot interactions that ensure multimodal accessibility, and improving the accuracy and contextual relevance of GAI-generated content. Regular user experience evaluations should be conducted.
- Encourage lecturers to adopt small-scale action research methodologies (as implicitly used in this study) to experiment with GAI integration within their own modules. This involves identifying specific teaching/learning challenges, implementing an GAI-based solution, observing its impact (using methods like those in this study such as lecturer reflections, student feedback, platform analysis) that reflect critically and refine the approach.

IN REVIEW

REFERENCES

Akintolu, M., Mitwally, M. A., & Letseka, M. (2024). South African Open Distance Elearning Student: The Types, Effectiveness, and Preference of Feedback Support. West African Journal of Open and Flexible Learning, 12(2), 89-112.

Al-Ababneh, M. M. (2020). Linking ontology, epistemology and research methodology. Science & Philosophy, 8(1), 75–91.

Allen, I. E., & Seaman, J. (2017). Distance education enrollment report 2017. Babson Survey Research Group.

Almisad, B., & Aleidan, A. (2025). Faculty perspectives on generative artificial intelligence: insights into awareness, benefits, concerns, and uses. Frontiers in Education, 10.

Altukhi, Z. M., & Pradhan, S. (2025). Systematic Literature Review: Explainable AI Definitions and Challenges in Education. arXiv preprint (April 2025).

Bozkurt, A., Karadeniz, A., Baneres, D., Guerrero-Roldán, A. E., & Rodríguez, M. E. (2023). Generative AI and Distance Education: A Systematic Review.

Chiu, T. K., Ahmad, Z., & Çoban, M. (2025). Development and validation of teacher artificial intelligence (AI) competence self-efficacy (TAICS) scale. Education and Information Technologies, 30(5), 6667-6685.

Creswell, J. W. (2013). Qualitative Inquiry and Research Design: Choosing Among Five Approaches (3rd ed.). SAGE Publications.

Cotton, D. R. E., Cotton, P. A., & Shipway, J. R. (2023). Chatting and cheating? Ensuring academic integrity in the era of ChatGPT. Innovations in Education and Teaching International, 60(2), 209–220.

Denzin, N. K. & Lincoln, Y. S. (2018). The SAGE Handbook of Qualitative Research (5th ed.). SAGE Publications.

Fawns, T. (2019). Beyond the pedagogy-technology dichotomy: A more nuanced approach to designing technology-enhanced learning. British Journal of Educational Technology, 50(5), 2213-2225.

Feng, X., & Law, N. (2021). Understanding teachers' concerns about AI in education: A systematic review. Journal of Educational Computing Research, 63(4), 419-438.

Garrison, D. R. (2011). E-learning in the 21st Century: A framework for research and practice. Routledge.

Garrison, D. R., Anderson, T., & Archer, W. (2010). Critical inquiry in a text-based environment: Computer conferencing in higher education. The Internet and Higher Education, 2, 87–105.

Gezani, B. (2024). Challenges of Online Learning in the Comprehensive Open Distance and Elearning Context–A Case Study of the University of South Africa. E-Journal of Humanities, Arts and Social Sciences, 1265-74.

Hariyanto, A., Kristianingsih, F. X. D., & Maharani, R. (2025). Artificial intelligence in adaptive education: a systematic review of techniques for personalised learning. Education and Information Technologies. Springer.

Hu, W., & Chan, C. K. Y. (2025). From user needs to AI solutions: a human-centered design approach for AI-powered virtual teamwork competency training. International Journal of Educational Technology in Higher Education, 22(1), 52.

Imran, M., Almusharraf, N., Ahmed, S., & Mansoor, M. I. (2024). Personalization of E-Learning: Future Trends, Opportunities, and Challenges. International Journal of Interactive Mobile Technologies, 18(10).

IN REVIEW

Kasneci, E., Sessler, K., Kühl, N., & Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. Learning and Individual Differences, 103, 102274.

Kearns, L. E., & Mancilla, R. (2014). The impact of instructor immediacy on student satisfaction and retention in online courses. Journal of Online Learning and Teaching, 10(2), 242-255.

Kim, J., Klopfer, M., Grohs, J. R., Eldardiry, H., Weichert, J., Cox, L. A., & Pike, D. (2025). Examining faculty and student perceptions of generative AI in university courses. Innovative Higher Education, 1-33.

Lee, S. S., & Moore, R. L. (2024). Harnessing Generative AI (GAI) for Automated Feedback in Higher Education: A Systematic Review. Online Learning, 28(3), 82-106.

Luo, J., Zheng, C., Yin, J., & Teo, H. H. (2025). Design and assessment of AI-based learning tools in higher education: A systematic review. International Journal of Educational Technology in Higher Education, 22(1), 42.

Msekelwa, P. Z. (2022). An Investigation of the Effectiveness of Technology in Open Distance Learning: A Case Study of the University of South Africa (Doctoral dissertation, University of South Africa (South Africa)).

Ngulube, P. (2015). Qualitative Data Analysis and Interpretation: Systematic Search for Meaning. In E. R. Mathipa & M. T. Gumbo (Eds.), Addressing Research Challenges: Making Headway for Developing Researchers (pp. 131-156). Mosala-MASEDI Publishers.

Nguyen, T. N., & Truong, H. T. (2025). Trends and emerging themes in the effects of generative artificial intelligence in education: A systematic review. Eurasia Journal of Mathematics, Science and Technology Education, 21(4), em2613.

Nikolopoulou, K. (2025). Generative artificial intelligence and sustainable higher education: Mapping the potential. Journal of Digital Educational Technology, 5(1), ep2506.

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. Administration and Policy in Mental Health and Mental Health Services Research, 42(5), 533-544.

Pan, M., Lai, C., & Guo, K. (2025). Effects of GAI-empowered interactive support on university EFL students' self-regulated strategy use and engagement in reading. The Internet and Higher Education, 65, 100991.

Pitsoe, V. (2025). “Access to Higher Education through Open Distance Learning (ODL): reflections on the University of South Africa (UNISA).” [Online PDF],

Pramjeeth, S., & Ramgovind, P. (2024). Generative artificial intelligence (AI) tools in higher education: A moral compass for the future? African Journal of Inter/Multidisciplinary Studies, 6(1), 1-13. https://doi.org/10.51415/ajims.v6i1.1560

Rovai, A. P. (2002). Building sense of community at a distance. International Review of Research in Open and Distance Learning, 3(1), 1-16.

Sallam, M., Elsayed, W., Al-Shorbagy, M., Barakat, M., El Khatib, S., Ghach, W., Alwan, N., Hallit, S., & Malaeb, D. (2024). ChatGPT usage and attitudes are driven by perceptions of usefulness, ease of use, risks, and psycho-social impact: A study among university students in the UAE. Frontiers in Artificial Intelligence, 7, 1–14. https://doi.org/10.3389/frai.2024.1454542

Selwyn, N. (2024). Digital degrowth: Toward radically sustainable education technology. Learning, Media and Technology, 49(2), 186-199.

Sevnarayan, K. (2024). Exploring the Dynamics of ChatGPT: Students and Lecturers' Perspectives at an Open Distance e-Learning University. Journal of Pedagogical Research, 8(2), 212-226.

Xu, Z., Yang, J., Zhang, H., & Liu, T. (2025). The impact of teachers’ teaching strategies on students’ deep learning in online learning environments: the mediating role of learning

IN REVIEW

interaction. Frontiers in Education, 10, Article 1680937. https://doi.org/10.3389/feduc.2025.1680937

Zou, Y., Kuek, F., Feng, W., & Cheng, X. (2025). Digital learning in the 21st century: trends, challenges, and innovations in technology integration. Frontiers in Education, 10, Article 1562391.

FUNDING INFORMATION

This work was supported by the Research Development Academy Grant and the Women in Research Grant, both awarded to Kershnee Sevnarayan.

ETHICS APPROVAL

Ethical approval for this study was obtained from the University of South Africa College of Human Sciences Research Ethics Committee (CHS CREC) under ethical clearance reference number [2026_RPC_009].

The study was conducted in accordance with the University of South Africa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment, as applicable to the approved research protocol.

Informed consent was obtained from all participating students and lecturers prior to data collection. Participation was voluntary, and the confidentiality and anonymity of participants were maintained throughout the research process.

CONSENT TO PARTICIPATE

Informed consent to participate in the study was obtained from all student and lecturer participants prior to data collection. Participants were informed of the purpose of the study, the voluntary nature of their participation, their right to withdraw without penalty, and the measures taken to protect their confidentiality and anonymity.

CONSENT TO PUBLISH

Consent to publish was obtained from all participants whose anonymised data and/or quotations are reported in this manuscript. No personally identifiable information is included in the manuscript.

DATA AVAILABILITY

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

IN REVIEW