

The influence of Generative AI and its impact on critical cognitive engagement in an open access, distance learning university.

Dr Ntshimane Elphas Mohale, Ms. Zuleika Suliman

University of South Africa

Abstract

The rise of generative artificial intelligence (GenAI) technologies like ChatGPT, Copilot and Meta AI has raised concerns about their impact on academic practices pertaining to cognitive engagement and intellectual rigour. This study investigates the influence of GenAI and its impact on critical cognitive engagement. GenAI threatens deep thinking by enabling students to outsource academic tasks such as critical analysis, leading to overreliance on generative tools. The ease and convenience provided by these technologies risk the promotion of surface and passive engagement with complex topics, diminishing scholarly inquiry and intellectual depth. This qualitative study employs an interpretive phenomenological design integrated with elements of action research, document analysis and an open-ended questionnaire. In this study, data was collected using two methods: 1) screenshots of four first-year student assignments and four examination scripts, which were analysed using GenAI detection tools such as Sapling and QuillBot; 2) open-ended questionnaires emailed to ten first-year lecturers. Students' written work was analysed using GenAI detection tools to identify potential usage. Data from both sources were analysed using Braun and Clarke's (2021) six-phase thematic analysis framework. Findings suggest that reliance on GenAI may undermine genuine learning, critical thinking, and analytical skills, as students prioritise convenience over detailed understanding. To halt the decline in critical thinking, it is essential to educate students about academic integrity; guide them to evaluate credible sources; encourage original research and analysis; and implement effective GenAI detection measures.

This study advocates the preservation and promotion of deep thinking in academia to stress the need to balance technological advancements and academic integrity.

Keywords: academic dishonesty, critical cognitive development, GenAI, impact on learning

1. Introduction

The context and problem addressed in this study concern the growing influence of generative artificial intelligence (GenAI) and its impact on critical cognitive engagement within a comprehensive open distance and e-learning (CODEL) higher education institution (HEI). The unethical and excessive use of GenAI by students has exacerbated the digital divide, sparked debates among scholars and intensified challenges related to academic dishonesty. GenAI's integration presents both opportunities and ethical dilemmas in teaching and learning. University MS (pseudonym) is a HEI in South Africa operating as CODEL, enrolling approximately 370,000 first-year students annually. Most of the students are registered for the

academic writing module (AW100A) (pseudonym), which is designed to develop students' writing skills by enhancing critical reading and writing abilities, essential for success in higher education.

The AW100A module equips students with the competence to engage with argumentative essays and research-based essays and articles as well as lectures; it adheres to academic conventions that include proper citation practices. However, many first-year students come from South African public schools with few educational resources, leaving them underprepared for the rigours of HEI. Mohale (2024) and Woldegiorgis and Chiramba (2024) argue that “*unpreparedness*”, coupled with a lack of academic rigour and resilience, significantly contributes to students' struggles to complete qualifications within the stipulated time. Specific challenges faced by first-year students include constructing coherent essays, paragraphing, developing topic sentences, paraphrasing, maintaining academic voice, adhering to grammatical rules, summarising and mastering citation and referencing techniques (Demana, 2024; Lipke, 2024; Woldegiorgis, and Chiramba, 2024). Many students turn to GenAI tools for assistance with assignments and examinations, in order to cope with these demands, (Hoernig, 2024; Sevnarayan and Potter; 2024). According to Bozkurt (2024), Maphoto *et al.* (2024), and Yan *et al.* (2024), GenAI is a versatile tool capable of generating text, images, videos and other multimedia content. It can summarise texts, translate languages, paraphrase and produce human-like responses; it functions as a subset of artificial intelligence (AI) and has been designed to create new content using pre-trained data. This study therefore aims to examine the influence of GenAI and its effects on critical cognitive engagement in a distance HEI. The overarching research questions for this study are: 1) To what extent is there evidence of GenAI usage in student assignments and examination scripts? 2) How do lecturers perceive the impact of GenAI on students' academic performance?

Building on this, the growing dependence on GenAI is fuelled by the digital nature of the current era, when students, as digital natives, are proficient in using such technologies (Evans and Robertson, 2020). While GenAI's transformative potential has gained traction in academia, it also generates conflict and tension, as it challenges conventional teaching and learning roles and rules of engagement (Sankey, 2024; Zhang and Dong, 2024). Critics highlight that its use heightens academic dishonesty, diminishes meaningful engagement and compromises critical cognitive development while raising ethical and privacy concerns. In addition, many lecturers, not adept at using GenAI detection tools, face additional challenges in developing unmanipulable assessments and detecting GenAI produced work (Naseer *et al.*, 2024; Li, 2024). It is important to point out that Turnitin is institutionalised in University MS. However, Turnitin is inadequate, sometimes producing false positives or failing to identify GenAI content comprehensively (Fowler, 2023; Perkins *et al.*, 2024). Consequently, lecturers experience anxiety and increased workloads that lead to apprehension about GenAI's role in academia (Naseer *et al.*, 2024; Li, 2024). By contrast, some scholars argue that GenAI enhances personalised learning and creativity and provides fast, reliable solutions to academic problems (Adarkwah, 2024). Advanced GenAI tools such as GPT1-4, Grammarly, DALL-E, and Midjourney are widely used by students, further complicating the dynamics of academic integrity (Chaudhary *et al.*, 2024; Mariani and Dwivedi, 2024). While academic dishonesty is not new, GenAI exacerbates the issue by enabling intellectual independence for some students while allowing others to bypass meaningful learning entirely (García-Peñalvo, 2023; Rudolph, 2024). GenAI has disrupted traditional methods and practices in the current

Fourth Industrial Revolution (4IR) as it offers unprecedented convenience and efficiency. However, it has also attracted criticism from scholars who argue that it contributes to cognitive reduction and the erosion of critical thinking. This study's literature review engages with these debates, exploring both the perceived benefits and the underlying biases and limitations associated with GenAI.

2. Literature review

2.1 The rise of GenAI in academia

Historically, HEIs relied on face-to-face interactions and discussions in traditional classroom contexts to facilitate learning (Adarkwah, 2021; Baticulon *et al.*, 2021; Capranos, Dyers and Magda, 2022; UNISA, 2008, 2015). However, with the rise of CODEL, the focus shifted to online engagement, further evolving with recent advancements like GenAI. GenAI generates content from pre-trained data, enhances learning by providing personalised and adaptive experiences, immediate feedback, diverse resources and innovative assessment options. It is capable of tasks such as essay writing, summarising, translating, paraphrasing, multimedia generation and complex problem-solving; it effectively mimics human intelligence and approaches (Bozkurt, 2024; Maphoto *et al.*, 2024; Yan *et al.*, 2024). Research highlights GenAI's inclusivity and adaptability, for it can support diverse demographic needs and create an interactive learning experience and environment crucial to distance education contexts (Huang and Huang, 2024). Tools like ChatGPT and Grammarly exemplify GenAI's capacity to support academic flexibility and provide specific learning experiences that meet the needs of a diverse student population (Haque *et al.*, 2022; Lund *et al.*, 2023). However, there are ethical and legal concerns regarding GenAI's influence on learning. Potential over-reliance on GenAI could hamper the development of students' analytical skills and prevent originality; it also raises concerns about academic integrity (Lucy and Bamman, 2021; Perrigo, 2023). The digital divide also poses a significant educational inequality challenge, as access to necessary resources and connectivity is not universal (Evans and Robertson, 2020; Mohale, 2024). While today's students are often digital natives, unequal access to GenAI tools threatens to widen gaps in educational outcomes. In addition, GenAI may produce biases, hallucination, privacy issues and challenges to intellectual property rights. Despite these concerns, GenAI provides promising opportunities for collaboration, engagement and practical simulations that enrich the learning experience (Linehan *et al.*, 2024). The literature, however, reveals gaps in understanding the long-term effects of GenAI on educational equity, ethical standards and skill development; further investigation into these critical areas must take place.

2.2 The divide amongst scholars

Researchers remain divided on whether GenAI provides essential support that genuinely enhances student engagement with complex content or creates a reliance on automated tools that diminishes critical thinking skills (Cox, 2022; Hancock *et al.*, 2020; Jarrahi *et al.*, 2022; Wang *et al.*, 2022). This debate is particularly pressing for distance HEIs that grapple with how to set clear boundaries around GenAI use. Current plagiarism detection software may not be equipped to address GenAI's unique challenges, as GenAI-produced content often slips past the traditional plagiarism checks that complicate authorship attribution, leaving room for potential misuse (Anderson *et al.*, 2023; Dehouche, 2021; Gilot and Cole, 2023). So, a

balanced approach, encouraging responsible GenAI usage while upholding the foundational academic values of independent thought and originality, is crucial (Hancock *et al.*, 2020; Koo, 2023; Garcia Valencia *et al.*, 2023). Used responsibly, GenAI tools may helpfully bridge learning gaps by supporting students who struggle with aspects of content creation, idea development and language proficiency. For instance, GenAI assists with brainstorming, writing and editing, potentially boosting academic performance through language and style enhancements (Jayachandran, 2023; Suppadungsuk, 2023). GenAI offers these possibilities yet introduces challenges that threaten to undermine academic integrity and cognitive skill development. Critics argue that GenAI's convenience could lead students to misuse tools that produce polished work that might not reflect their own understanding or effort (Cotton *et al.*, 2023; Roe *et al.*, 2022; Suliman *et al.*, 2024).

2.3. Continuing discussions

GenAI has given lecturers both 1) opportunities and 2) challenges (Adeleke *et al.*, 2024; Al-Awawdeh *et al.*, 2023; Fazil *et al.*, 2024; Pisica *et al.*, 2023; Solis *et al.*, 2023):

- 1) the means of improving students' engagement and critical thinking skills and also of encouraging interdisciplinary collaboration;
- 2) lack of training, resistance to full integration, ethical considerations and difficulty in incorporating GenAI into the current curriculum.

Consequently, lecturers range from the optimistic (incorporate it!) to the sceptical (ban it!), with some torn between GenAI's advantages and disadvantages. Some lecturers welcome it as enhancing teaching and facilitating personalised learning (Bozkurt *et al.*, 2024; Pratama, 2023). Many others remain wary and regard it as an intrusion, threatening to undermine their authority and pedagogical control; they fear that GenAI driven content might reduce the need for human instruction, potentially devaluing their expertise and leading to a more transactional approach to education (Müller, 2021; Suppadungsuk *et al.*, 2023). There are also ethical concerns over GenAI's opacity, as lecturers worry about its decision-making processes and biases. Such opposing perspectives illustrate the tension between embracing GenAI's potential and preserving the foundational humanistic values of education (Bin-Nashwan, 2021; King, 2023) and suggest that effective GenAI integration will probably require robust, collaborative efforts between lecturers, students and developers to ensure that GenAI tools serve pedagogical rather than purely technological goals.

Those advocating a more positive attitude to GenAI see outright resistance to it as reactionary and argue that, if used appropriately (for example, GenAI-assisted drafting tools might help students struggling with language skills to develop coherent ideas and improve their understanding and expression), it has real potential for democratising knowledge and supporting the less advantaged (Adeleke *et al.*, 2024). The more optimistic view posits that GenAI, when used responsibly, could complement traditional teaching, encourage online engagement and support more personalised learning trajectories.

The sceptics counter that dependency on GenAI is likely to erode students' critical thinking and creativity, arguing that reliance on GenAI tools may encourage students to bypass essential cognitive processes, such as problem-solving, higher-order thinking and conceptual synthesis, all vital for deep learning (Nguyen *et al.*, 2023). Concerns about GenAI are

substantial: authenticity of work; the undermining of academic integrity; submission of assignments without full personal engagement with learning (Lo, 2023); loss of genuine student voice.

3. Theoretical framework

The integration of GenAI in academic contexts has raised concerns about its effects on student learning and critical thinking. This study uses the community of inquiry (Col) framework (Garrison and Arbaugh, 2007; Garrison 2000), which includes cognitive, teaching and social presence, to address these concerns and show how lecturers can stimulate deep learning in the era of GenAI usage. Cognitive presence in Col involves critical thinking and knowledge construction and helps to avoid passive use of GenAI tools. Lecturers can support this by providing guidance, feedback and problem-solving opportunities and ensure that students engage critically with GenAI content rather than accept it without question (Annamalai *et al.*, 2024; Suharno *et al.*, 2023). Teaching presence ensures lecturers actively guide learning and help students understand GenAI's role in academic discourse while promoting intellectual rigour and higher-order thinking. Social presence emphasises collaboration and interaction – especially important in online environments where GenAI could lead to isolation. Lecturers may: create a supportive learning environment through peer discussions, collaborative activities and active engagement; maintain a sense of community; enhance critical thinking. The Col framework allows lecturers to make sure that GenAI tools enhance, rather than replace, cognitive engagement. This approach helps students develop the skills necessary for success in the digital age in distance education environments like the AW100A module, where lecturers can use Col to maximise the potential of GenAI tools and preserve academic integrity. Figure A below illustrates the Col:

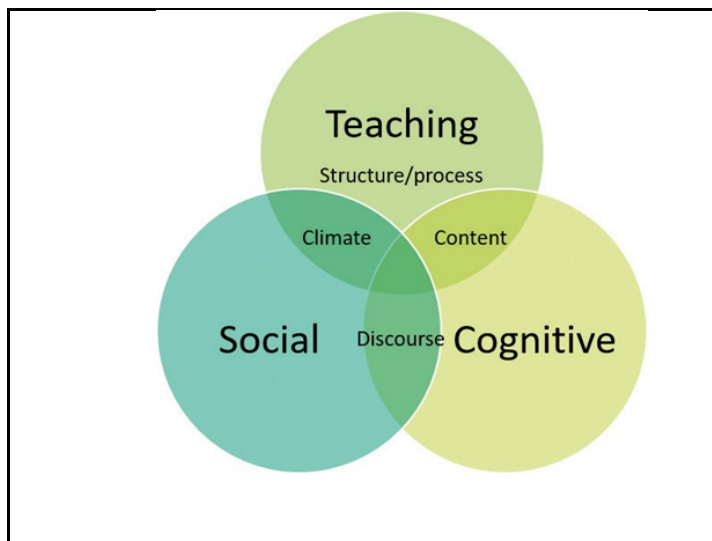


Figure A. Col framework (Garrison, 2000:88)

The Col framework highlights the need for a balanced, interactive and challenging learning environment that lecturers are well-equipped to create. Despite the rise of GenAI, lecturers can still create spaces for meaningful discussion, engagement, knowledge building and

intellectual growth, helping students to develop the critical thinking and problem-solving skills needed for success in the GenAI era.

4. Methodology

4.1 Research approach

Qualitative research, as highlighted by Pathak *et al.* (2013), is an important and iterative process that improves the scientific community's understanding through a detailed exploration of the subject under study. This qualitative study employs a phenomenological approach with elements of action research integrated, in order to explore the responses of GenAI powered chatbots and lecturers' experiences based on academic integrity and plagiarism. This method is well-suited for this research, as it allows for a detailed investigation into the influence of GenAI and its effects on critical cognitive engagement in CODEL higher institutions in South Africa. In contrast, quantitative research may fall short of capturing the details and contextual factors essential to understanding the subjective experiences of students and all involved with these strategies (Aspers and Corte, 2019; Pathak *et al.*, 2013). Qualitative techniques include document analysis using two methods: 1) screenshots of four first-year student assignments and examination scripts, which were analysed using GenAI detection tools such as Sapling and QuillBot; 2) open-ended questionnaires emailed to ten first-year lecturers (only five responded), to support the collection of specific and detailed data that relate to the application of Col (Aspers and Corte, 2019; Garrison *et al.*, 2010; Wei, 2018). This approach facilitates a clear examination of how GenAI affects cognitive engagement in distance HEIs. The qualitative approach enables a detailed understanding of lecturers' and students' experiences and viewpoints regarding the use of GenAI as a support strategy. The digital ethnographic patterns observed in the screenshots reveal a consistent and recurring reliance on GenAI tools. These patterns point to an increasing dependency on such technologies and suggest that their use is becoming normalised and internalised within students' academic practices.

4.2 Research design

This qualitative study uses the interpretive phenomenology design integrated with elements of action research, to understand the influence of GenAI and its impact on critical cognitive engagement in distance HEI. In this study, interpretive phenomenology refers to a qualitative research approach that seeks to understand the lived experiences, perceptions, and meanings that individuals (lecturers and students) assign to their interactions with GenAI in distance HEI (Moran, 2002). Phenomenology focuses on the subjective, personal, and contextual nature of experiences, aiming to uncover the essence of the phenomenon under investigation (Moran, 2002). Additionally, this study integrates an interpretive phenomenological approach with the elements of action research to facilitate change through iterative cycles of action and reflection. While students may engage with GenAI tools, the reflective component of the case study aims to help them recognise that unethical use and over-reliance on such technologies can hinder critical thinking and cognitive engagement with their academic work.

4.3 Population

A population refers to the entire group of individuals or items sharing common characteristics that are relevant to a study (Asiamah *et al.*, 2017; Lee *et al.*, 2021). It represents the total set

of units from which data is collected and analysed to draw conclusions or inferences about a specific phenomenon or research question (Lee *et al.*, 2021). For this study, the population consists of five lecturers from University MS, specifically including those who teach the AW100A module.

4.4 Sample

This study employed a purposive sampling method, a technique that involves selecting participants based on specific criteria aligned with the research objectives (Creswell and Poth, 2016; Berndt, 2020). This approach ensures that participants possess relevant characteristics or experiences, making their contributions significant to the study (Creswell and Poth, 2016). Purposive sampling, rather than random sampling, was chosen to effectively address the research questions. Document analysis was conducted to answer RQ1 by analysing four student assignments using QuillBot and four examination scripts using Sapling. To address RQ 2, ten lecturers were invited to complete an online open-ended questionnaire. Out of the ten lecturers, only five responded to the open-ended questionnaire, and four assignment and examination scripts were used to collect data for this study. Although the response rate was fifty per cent and only a few scripts were analysed, the study was able to draw meaningful interpretations. This is because the primary aim was to interpret the quality of the subset data rather than to quantify it.

4.5 Instruments

This study employed two research instruments: document analysis and open-ended questionnaires. Document analysis examined four assignments and examination scripts using Sapling and QuillBot to identify patterns, themes, and authorial perspectives (Bowen, 2009; Love, 2013). Open-ended questionnaires captured detailed responses in participants' own words, providing insights into lecturers' experiences and perspectives on GenAI's impact on student learning (Kimberlin and Winterstein, 2008; Reja *et al.*, 2003). Together, these methods offered a comprehensive understanding of GenAI's role in education by combining qualitative insights with systematic analysis.

4.6 Data collection and analysis

Data collection involves systematically gathering and documenting information to answer research questions, ensuring accuracy, reliability, and validity (Gallagher, 2009; van Gog *et al.*, 2008). Data analysis examines and interprets collected data using statistical, qualitative or quantitative methods to identify patterns and meanings. In this study, data were collected through two methods: screenshots of four assignments and examination scripts analysed using Sapling and QuillBot; open-ended questionnaires emailed to lecturers about GenAI's impact on academic integrity. Responses from assignments and examination scripts, and lecturers' questionnaires were coded for analysis to reveal hidden insights. When analysing the obtained data, Braun and Clarke's (2021) six-phase thematic analysis framework was employed.

5. Ethical considerations

This study adhered to ethical guidelines, ensuring participants' rights, anonymity and confidentiality. Consent was voluntary, with pseudonyms protecting identities. No discrimination occurred and participants faced no harm or risks. Ethical approval was granted by the Research Ethics Committee (Ref: 90268091_2024_RPC_081), emphasising transparency and equitable treatment throughout the research process. The collected screenshots of four first-year assignments and examination scripts were systematically labelled to facilitate data coding and analysis. Ethical clearance was obtained to ensure the responsible use of student assessment data, in line with institutional research protocols. Data access was facilitated through the information communication technology (ICT) department, following standard procedures at the participating institution, which is referred to pseudonymously as University MS to protect its identity.

6. Findings and discussions

In this section, the findings were organised in line with the following themes:

- Evidence of GenAI tools usage in assignments and examination scripts
- Lecturers' perspective of the impact of GenAI.

The findings presented in this section are based on RQ 1 and RQ 2 of the study, which are formulated as follows:

- **RQ 1.** To what extent is there evidence of GenAI usage in student assignments and examinations scripts?
- **RQ 2.** How do lecturers perceive the impact of GenAI on students' academic performance?

Evidence of GenAI tools usage in assignments and examination scripts

The rise of GenAI in academia presents challenges to academic integrity, encouraging dependency and potential cognitive decline. Without standardised detection measures, universities face risks from GenAI-generated submissions. This study examined eight scripts from the AW100A module to detect GenAI usage. Turnitin proved inadequate, prompting the use of Sapling and QuillBot. Four assignment scripts were analysed with QuillBot, and four examination scripts with Sapling. Screenshots of the detection results are presented below for further insights.

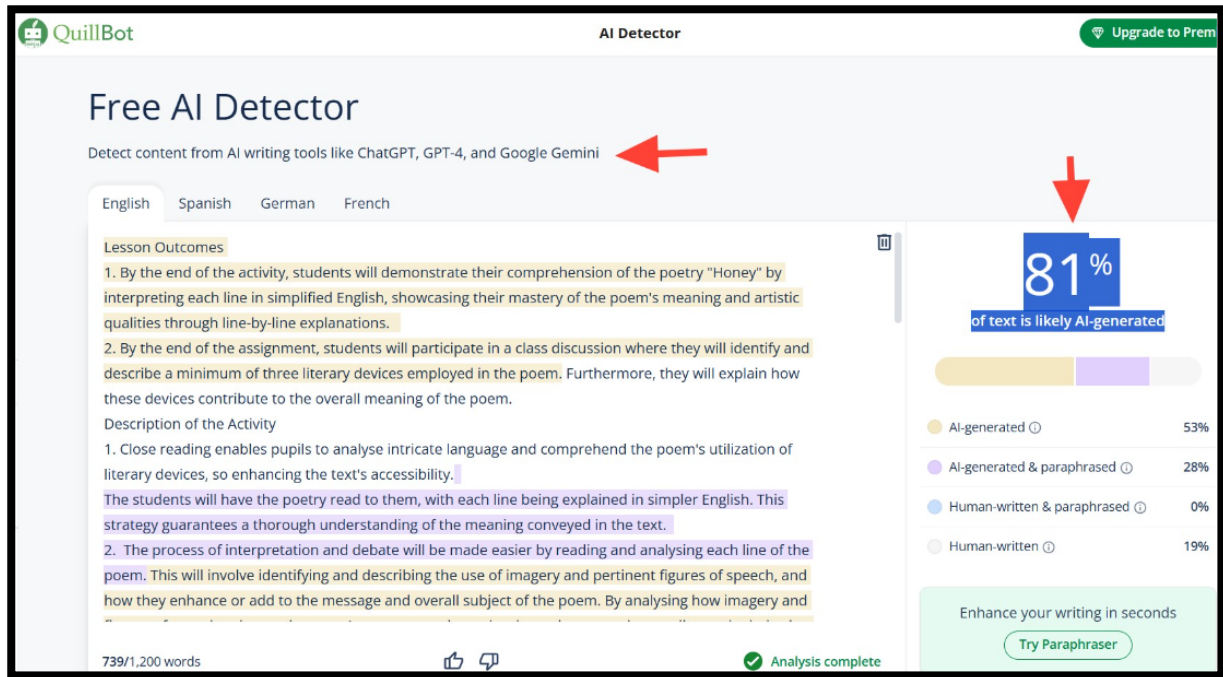


Figure 1. Assignment Script A1

Assignment Script A1 revealed that 53% of its content were generated by ChatGPT, GPT-4, and Google Gemini, 28% were paraphrased, and only 19% were human-written. This means 81% of the assignment relied on GenAI tools, with colour coding used to indicate contributions from each tool. This reliance highlights significant concerns such as plagiarism, educational vulnerability [lack of strong foundational skills], guidance gap [lack of responsible GenAI use], reduced cognitive engagement and overdependence on technology.

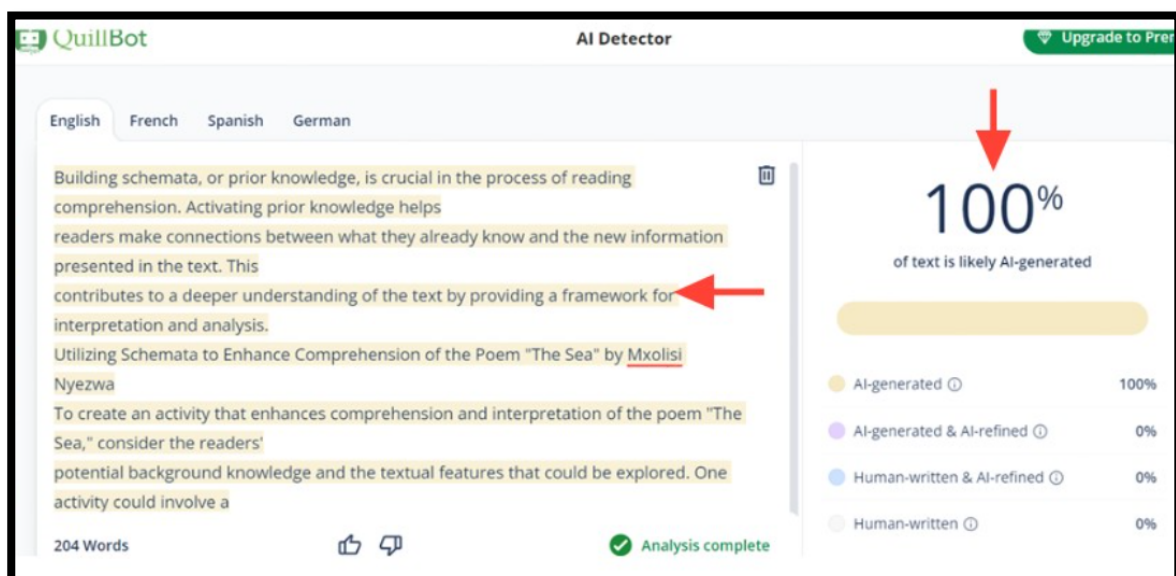


Figure 2. Assignment Script A2

Assignment Script A2 was 100% generated by ChatGPT, GPT-4 and Google Gemini, showing no evidence of the student's personal input or critical engagement. This excessive reliance on GenAI tools raises concerns regarding academic dishonesty and overdependence on GenAI technologies. It undermines the development of critical cognitive skills, such as independent problem-solving and critical thinking, which are essential for academic and intellectual growth. These findings indicate the importance of promoting the responsible use of GenAI in academic settings.

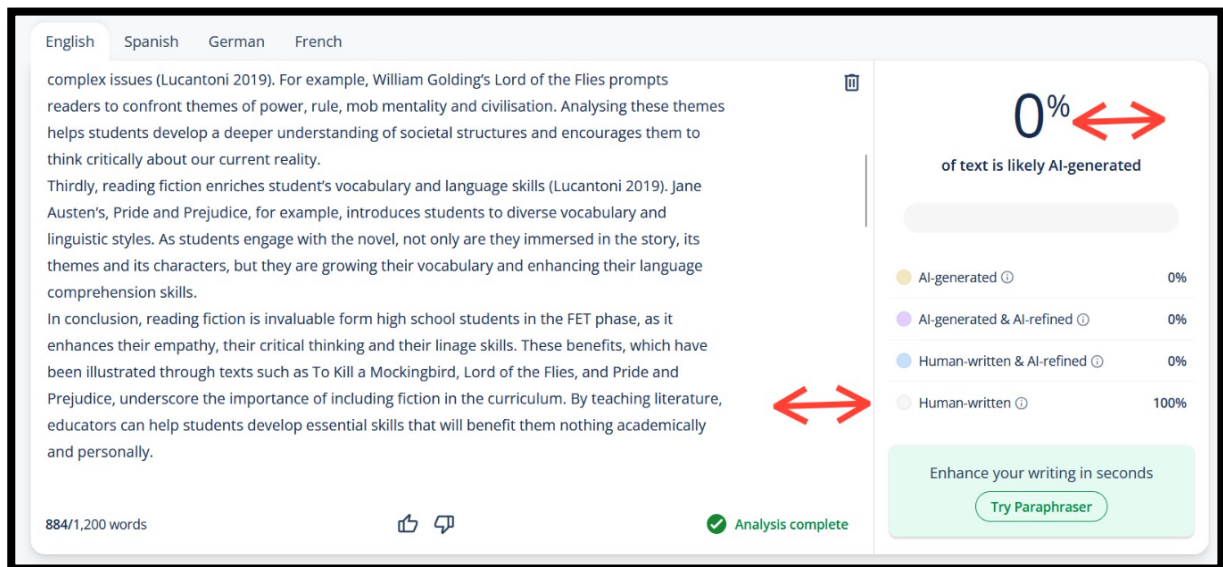


Figure 3. Assignment Script A3

Assignment Script A3 was entirely written by the student, with no GenAI content. This demonstrates a fully independent approach to completing the assignment, without reliance on GenAI tools. Unlike GenAI work, this human-written submission reflects greater originality, deeper cognitive engagement and strong critical thinking skills. This finding highlights the importance of upholding academic integrity and developing subject matter expertise through individual effort. The findings indicate the value of human input in the learning process, contributing to a more authentic and meaningful educational experience.

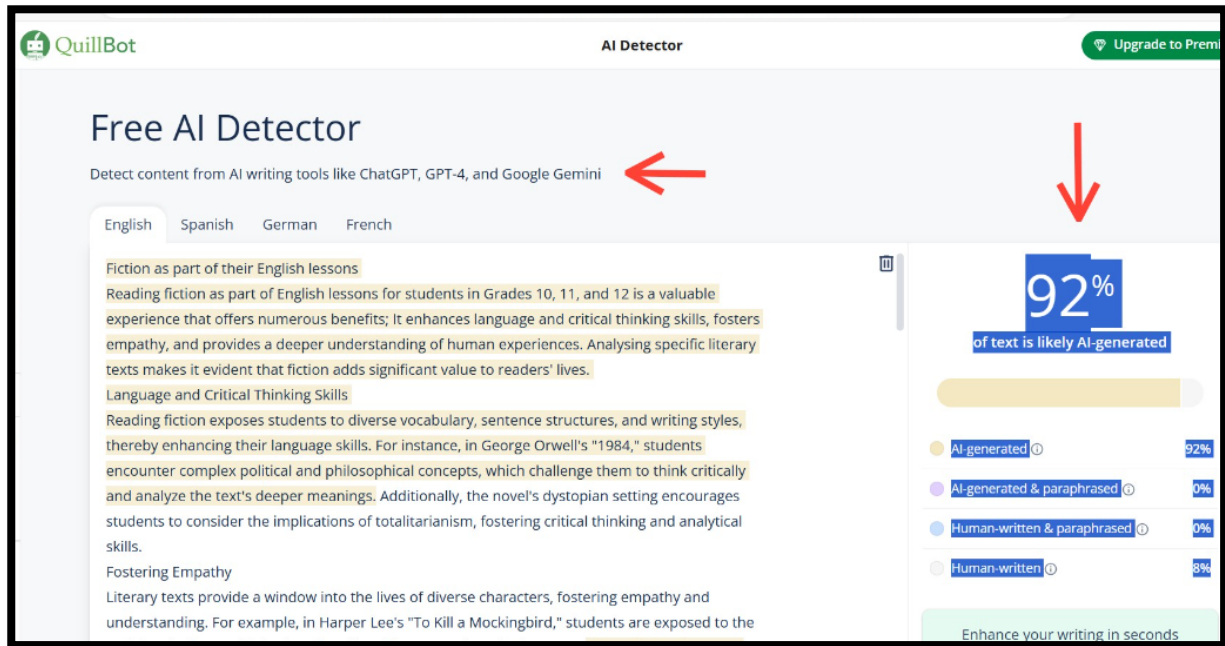


Figure 4. Assignment Script A4

Assignment Script A4 was generated with a high level of GenAI involvement, with 92% of its content created by GenAI tools, leaving only 8% as human written. This is concerning, as it reflects a heavy reliance on GenAI to complete the assignment, raising significant academic integrity issues. The high usage of GenAI tools highlights the importance of plagiarism detection systems, like QuillBot, in the context of distance HEIs. These tools are crucial for identifying misuse and ensuring that students engage authentically with their academic work.

The following screenshots represent examination scripts that have been processed through Sapling:

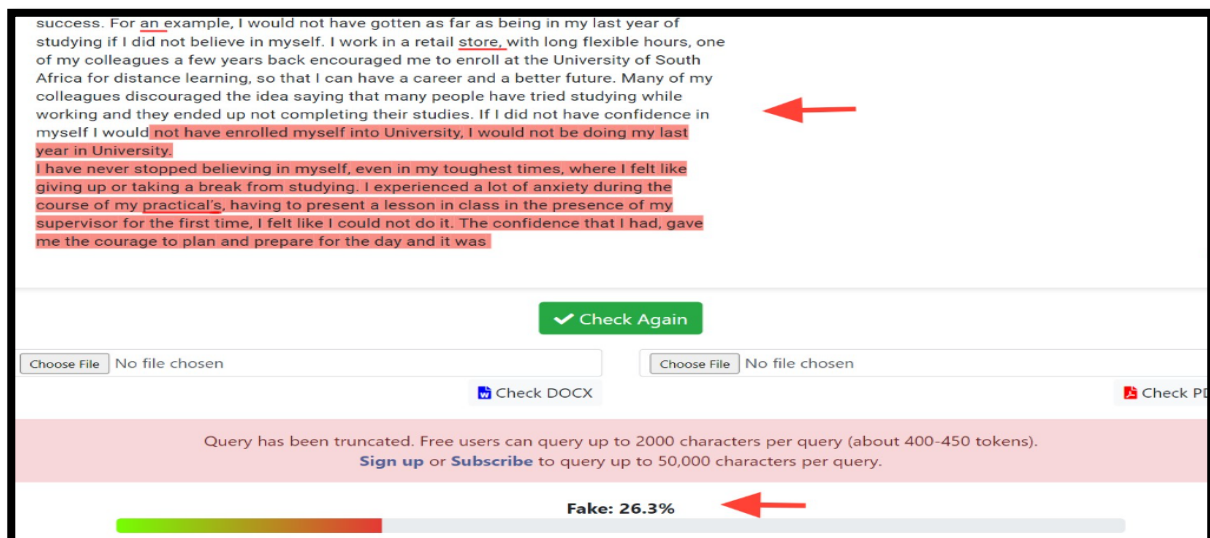


Figure 5. Examination Script B1

Examination Script B1 revealed that 26.3% of the content were identified as fake [GenAI] and plagiarised, while 74.7% were written by the student. Although GenAI tools were used in this script, most of the content reflects the student's own work. These findings suggest that students may not fully grasp the impact of GenAI usage on academic integrity. As a result, continuing education and awareness campaigns are essential to promote a deeper understanding of academic integrity and the responsible use of GenAI in academic settings.

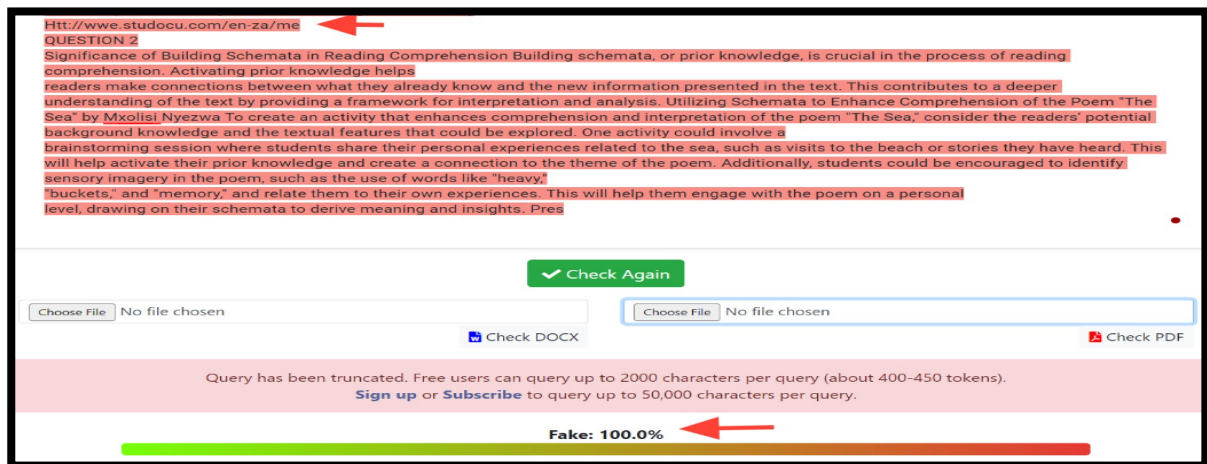


Figure 6. Examination Script B2

Examination Script B2 revealed that 100% of the content were identified as fake, indicating that the entire script was produced using unidentified GenAI tools [Sapling does not indicate which GenAI tools were employed]. This suggests a lack of critical thinking and cognitive engagement. The findings imply that students may prioritise convenience over genuine learning, demonstrating insufficient understanding of the module and weak critical thinking and analytical skills. It is crucial to intensify education about academic integrity, guide students in evaluating credible sources, encourage original research and analysis, implement more effective GenAI detection measures and provide targeted support to students who are struggling.

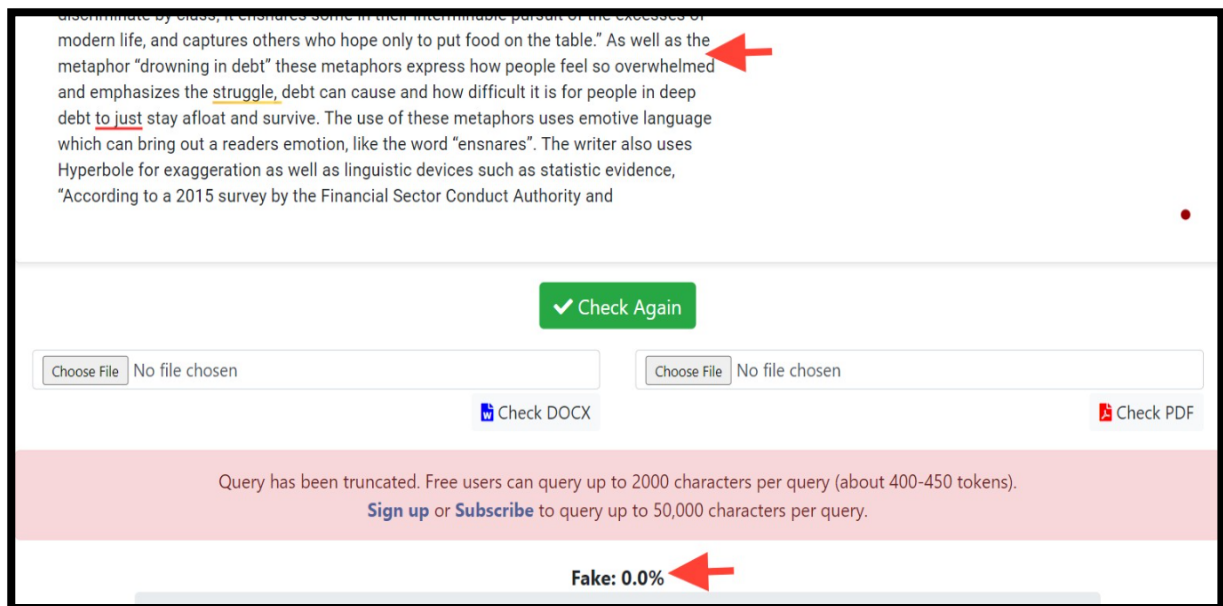


Figure7. Examination Script B3

Examination Script B3 revealed that 100% of the content were not fake, and no GenAI tools were used. This is highly encouraging, as it demonstrates that the student has shown original thought and effort in completing the assignment. While Script B3 contains some language errors, the absence of GenAI content indicates that the student has engaged with the subject matter using relevant critical thinking skills. This is a positive sign, highlighting the student's ability to think independently and express ideas authentically.

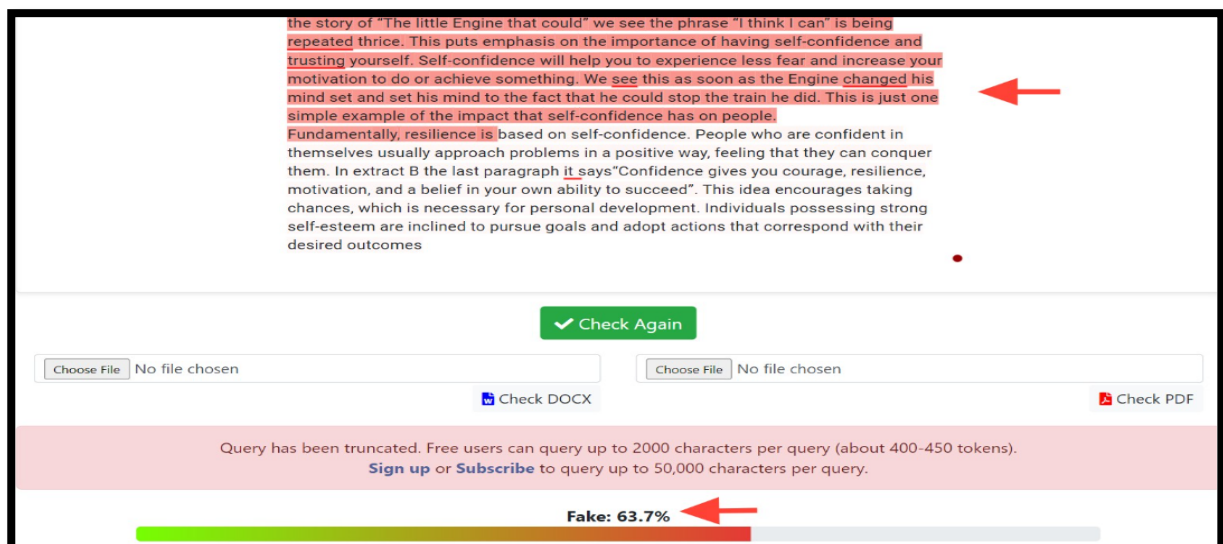


Figure 8. Examination Script B4

Examination Script B4 revealed that 63.7% of the content were identified as fake, with only 32.2% originating from the student. This is concerning, as it indicates that the student relied heavily on GenAI tools to complete the assignment, rather than engaging with the demands of the examination question. Outsourcing the work from GenAI, the student missed the opportunity to interact meaningfully with the subject matter to demonstrate personal

knowledge and understanding. This approach undermines the learning process and limits the development of critical academic skills.

Based on the findings, the increasing use of GenAI tools in four assignments and examination scripts presents significant challenges to academic integrity and cognitive development. Specifically, four assignment and examination scripts were purposively selected based on visible GenAI characteristics observed in the screenshots. In a qualitative study such as this, a small sample size of four assignment scripts and examination scripts is sufficient, as the aim is to explore the depth and extent of GenAI use rather than its frequency. These selected samples realistically reflect how GenAI is being used in the AW100A module and provide meaningful insights into its integration within academic tasks. In addition, growing reliance on GenAI tools undermines students' ability to engage critically with the content and develop essential cognitive skills. Many students turn to GenAI for convenience, bypassing the process of original learning, which diminishes opportunities for meaningful engagement with subject matter and limits academic growth (Lucy and Bamman, 2021; Perrigo, 2023). To address these challenges, distance HEIs must establish clear guidelines for the use of GenAI tools. As discussed by Garrison *et al.* (2000, 2010), Col framework can balance cognitive, social and teaching presence, promoting meaningful student engagement (Annamalai *et al.*, 2024). The findings also highlight the need for robust GenAI detection tools, such as Sapling and QuillBot, to uphold academic integrity and prevent misuse of GenAI. The Col framework stresses the importance of teaching presence, where lecturers facilitate student engagement to support cognitive development (Suharno *et al.*, 2023). The reliance on GenAI tools limits opportunities for reflection, self-regulated learning (SRL) and the development of cognitive presence (Cox, 2022; Hancock *et al.*, 2020; Jarrahi *et al.*, 2022; Wang *et al.*, 2022). To counteract this, lecturers ought to guide students on academic integrity, the ethical use of GenAI, and the value of engaging deeply with module content. Furthermore, discussions about the ethical implications of GenAI within the curriculum can help students understand better how to use these tools responsibly while maintaining critical thinking skills. Conversations, as noted by Bin-Nashwan (2021) and King (2023), encourage students to develop original perspectives rather than rely solely on GenAI content.

However, many students may not fully grasp the implications of using GenAI in academic work (Hancock *et al.*, 2020; Koo, 2023; Garcia Valencia *et al.*, 2023). While GenAI can assist with research and writing, excessive reliance on it hinders the development of critical thinking, problem-solving, and writing abilities essential for academic success (Bozkurt *et al.*, 2024; Pratama, 2023). The high use of GenAI content in student submissions indicates that convenience often takes precedence over genuine learning, impeding cognitive and academic development (Maphoto *et al.*, 2024; Suliman *et al.*, 2024). This indicates the urgent need for continuing education and awareness campaigns about academic integrity. Such initiatives should address the risks of GenAI content while equipping students to use GenAI tools ethically, ensuring they complement, rather than replace, authentic learning.

Lecturers' perspective on the impact of GenAI.

Understanding lecturers' perceptions of GenAI's impact on students' academic performance is essential to evaluate its influence on learning outcomes. First-year students, often lacking resilience, may over-rely on GenAI for academic tasks, raising concerns about academic writing standards. Exploring the challenges lecturers face in marking and moderating is crucial in this context. From a cohort of ten invited lecturers, only five responded to an online open-

ended questionnaire, revealing diverse yet insightful perspectives on GenAI's role in education. Below are the unaltered verbatim statements provided by the lecturers:

As a lecturer at a distance higher institution, I think that GenAI impact on student performance is varied and affects cognitive development, critical thinking, academic integrity, student voices, and originality. GenAI provides readily available answers and slows down critical thinking and understanding and stifles creativity and problem-solving skills. Over-reliance on GenAI may lead to plagiarism, authorship concerns, and erosion of authenticity. Furthermore, unique student perspectives and experiences are lost due to GenAI responses that disengage students from meaningful discussions. In order to resolve these concerns, I suggest a redesign of assessments to focus on critical thinking and originality and the implementation of GenAI detection tools that encourage students to engage with module material through discussions and reflective journaling that create a culture of academic integrity. HEIs can adapt teaching methods and support services to ensure students develop essential cognitive, critical thinking, and creative skills through the realisation of GenAI impact (Lecturer 1, 2024 open-ended questionnaire).

It worries us as lecturers because some students do not apply their critical thinking when answering questions but use GenAI to produce answers. It is good if students use it to quality check their responses to questions. In the long run we could end up with graduates who hold certificates but have no knowledge related to their qualifications (Lecturer 2, 2024 open-ended questionnaire).

I think GenAI can be both a powerful and dangerous tool for students in HEIs. It can be powerful when lecturers teach using GenAI and show students how to use GenAI ethically and responsibly. It doesn't help to police students' GenAI use because GenAI is taking over the world. GenAI can help students think creatively and it can teach students new things that they have not been exposed to before. It can also be dangerous, and this happens when students are left on their own and are not given explicit instructions. GenAI does have its own voice, and lecturers can allow students to use it to find their own voices. This encourages creativity and critical thinking and cognitive development. As an GenAI user, I have learnt so much from interacting with GenAI. This experience has helped me broaden my own writing abilities. So, yes...I do think there are pros and cons but in to fully realise and experience the full benefit of GenAI, lecturers need to be not board (Lecturer 3, 2024 open-ended questionnaire).

I perceive GenAI as a tool that is capable of making a great academic change for all academics- students, lecturers and markers, as long as it is used accurately and responsibly. A lot can be said about it. It provides instant learning, personalised one, it encourages interactivity - everyone is given a voice, no one can say 'I don't know'. Everybody knows because GenAI is a

source of information. However, if not used responsibly, it can hurt you.

There's a lot of stigmas around it. Some are true - it steals away the originality of a text if not used properly. It hinders the writer's voice, again, if not used properly. Using it properly is using it as a teacher, not as a ghost writer. In other words, over-reliance reduces its benefits (Lecturer 4, 2024 open-ended questionnaire).

I am on the fence with the usage of GenAI. It possesses threats and challenges when it comes to students' voice as it disappears, and overreliance of other authors' voice becomes dominant. Of course, this affects students' original work and this poses challenges of academic integrity. In addition, my main worry is the the lack of critical thinking and cognitive development that I feel is eroded especially when students use GenAI tools incorrectly. On the contrary, students can use it wisely and profoundly e.g., edit their work by using Grammarly or ask GenAI tools to improve their work while maintaining their voice. But our students are into the habit of disengaging with their academics especially when added advantage like GenAI's tools are available. Ok moving forward, my personal thinking is that it should be incorporated into the students' curriculum, but strict rules should apply because in any case we leave in the digital age where everything has an App. Perhaps if we told our students that their minds are Apps, they could start using it (Lecturer 5, 2024 open-ended questionnaire).

Lecturers expressed mixed feelings about using GenAI in education, highlighting both its benefits and challenges. Concerns include the erosion of students' unique voices, over-reliance on external sources, risks to academic integrity, and reduced critical thinking as students might bypass deep engagement with academic tasks. Despite these apprehensions, lecturers acknowledged GenAI's potential as an educational aid, offering opportunities for personalised learning and enhancing teaching and understanding. They emphasised the importance of promoting responsible and ethical use, encouraging students to view GenAI as a complementary tool rather than a substitute for their own efforts. While it offers significant opportunities to improve education, particularly in distant HEIs, improper integration could diminish self-application. Striking a balance between its advantages and drawbacks is crucial for its effective and ethical use.

The findings of this study reveal conflicting views regarding the use of GenAI in HEIs. On the one hand, some lecturers acknowledge the potential benefits of GenAI in enhancing students' academic performance. They noted that these tools can assist with brainstorming, writing and editing, particularly for students struggling with language proficiency. This perspective is consistent with studies by Adeleke *et al.* (2024), Fazil *et al.* (2024), Jayachandran (2023), Pisica *et al.* (2023), Solis *et al.* (2023), and Suppadungsuk (2023), who emphasise GenAI's ability to close learning gaps and facilitate idea development. On the other hand, significant concerns were raised about the possible over-reliance on GenAI and its negative effects on critical thinking and problem-solving skills. Lecturers fear that students may become dependent on these tools, thereby weakening their cognitive engagement. These concerns echo the findings of Cox (2022), Evans and Robertson (2020), Linehan *et al.* (2024), Lucy and

Bamman (2021), Mohale (2024), Perrigo (2023), and Wang *et al.* (2022), who all highlight the risk GenAI poses to the development of higher order thinking skills and academic integrity.

Furthermore, lecturers involved in the study pointed out several institutional and pedagogical challenges. One of the most pressing issues was the lack of proper training and clear guidelines on how GenAI should be integrated into teaching and learning. Without adequate support, they argued, it becomes difficult to manage the use of GenAI tools responsibly. This view aligns with Suliman *et al.* (2024) and Nguyen (2023), who note that the absence of regulatory frameworks can lead to inconsistent and potentially harmful practices, including the risk of students' overreliance on GenAI content. Another major concern was the threat GenAI poses to academic integrity. Lecturers observed that tools like Turnitin are not always able to detect content produced by GenAI, which makes it difficult to verify authorship and ensure fairness in assessment. This issue is reinforced by studies such as Anderson *et al.* (2023), Dehouche (2021), and Gilot and Cole (2023), who also highlight the limitations of existing plagiarism detection systems in the face of GenAI work.

Despite these challenges, some lecturers maintained that GenAI could be a valuable educational tool if used responsibly. They suggested that it could offer personalised support for students who struggle with traditional learning approaches. However, even those who recognised its benefits remained cautious. They emphasised that without clear institutional policies, proper training and alignment with the curriculum, GenAI's integration into teaching would be difficult and risky. This ambivalence reflects a broader tension within the academic community between embracing technological innovation and preserving the core values of education. Interestingly, out of ten lecturers invited to participate in the open-ended questionnaire, only five responded. This low response rate may indicate a deeper sense of frustration, anxiety or defeat among lecturers, many of whom have expressed concerns about the decline in cognitive engagement among students. The findings of this study highlight that there is no simple answer to the question of GenAI's place in education. While some view it as a threat to traditional teaching and academic standards, others believe it can complement existing approaches if carefully managed. The study demonstrates the urgent need for HEIs to strike a balance between harnessing the opportunities offered by GenAI and addressing the risks it presents. Providing proper training, developing clear policies, and addressing ethical concerns will be essential to ensuring that GenAI enhances student learning without compromising the integrity and goals of higher education.

7. Conclusions

The unrestricted use of GenAI tools poses a significant threat to HEIs by eroding students' critical thinking abilities, hindering mastery of module content and reducing meaningful engagement with academic tasks. To address these challenges, universities should urgently revise assessment practices to prioritise originality, deep analysis and the ethical integration of GenAI. Embedding these strategies within the CoI framework will enhance cognitive presence and encourage transformative learning experiences. HEIs should not only integrate GenAI tools into assessments in a controlled and pedagogically sound manner but also offer comprehensive training and workshops for both students and lecturers on the responsible and ethical use of GenAI. Additionally, institutions should establish robust, transparent policies that support innovation while reducing technophobia and promoting academic integrity. Given the

limitations of current plagiarism detection systems, HEIs should adopt a multi-tool approach to GenAI detection. Tools like Sapling and QuillBot have proved more adept than Turnitin in identifying GenAI content, yet no single tool offers complete reliability. Therefore, continuing investment in the development and refinement of detection technologies is critical to keep pace with the evolving capabilities of GenAI. This study recommends that HEIs diversify assessment formats such as incorporating interactive discussions, meaningful writing activities, and reflective tasks to discourage passive reliance on GenAI and instead cultivate analytical thinking, synthesis and student voice. However, this study is not without limitations. Its findings are based on a limited number of responses and contextual data from a specific institutional setting, which may not fully represent broader institutional or disciplinary practices. Future research should extend this investigation across multiple institutions and disciplines to gain a more comprehensive understanding of GenAI's impact. Moreover, longitudinal studies are needed to evaluate the long-term effects of GenAI integration on academic performance, ethical decision making, and student autonomy. As GenAI technologies continue to evolve significantly, HEIs should remain proactive, adapting their pedagogical and policy frameworks to ensure that academic integrity, cognitive development and meaningful learning are not only preserved but enhanced in the digital era.

Reference list

Adarkwah, M.A. (2021) '“I’m not against online teaching, but what about us?” ICT in Ghana post Covid-19.' *Education and Information Technologies*, 26(2),1665-1685. Available at: <https://doi.org/10.1007/s10639-020-10331-z> (Accessed: 11 March 2025).

Adarkwah, M.A. (2024) 'GenAI-Infused Adult Learning in the Digital Era: A Conceptual Framework for Higher Education.' *Adult Learning*, 10451595241271161. Available at: <https://doi.org/10.1177/10451595241271161> (Accessed: 13 June 2025).

Adeleke, I.A., Abimbola, O.G., and Olalekan, A.A. (2024) 'Exploring AI integration in higher education: university lecturers' perspectives on engagement, critical thinking, and interdisciplinary collaboration.' *FNAS Journal of Mathematics and Science Education*, 6(1),1-10. Available at: <https://fnasjournals.com/index.php/FNAS-JMSE/article/view/566> (Accessed:13 June 2025).

Al-Awawdeh, N., Al-Shaboul, I.A., and Khasawneh, M.A.S. (2023) 'Advancing Foreign Language Teaching with AI-Assisted Models; Insights from Lecturers and University Administrators.' *Journal of Namibian Studies*, 33. Available at: <https://doi.org/10.59670/jns.v33i.798> (Accessed: 5 March 2025).

Anderson, N., Belavy, D.L., Perle, S. M., Hendricks, S., Hespanhol, L., Verhagen, E., and Memon, A.R. (2023) ‘ “AI did not write this manuscript, or did it?” Can we trick the AI text detector into generated texts? The potential future of ChatGPT and AI in Sports & Exercise Medicine manuscript generation.’ *BMJ Open Sport & Exercise Medicine*, 9(1), e001568. Available at: <https://doi.org/10.1136/bmjsem-2023-001568> (Accessed: 13 June 2025).

Annamalai, N., Mangaleswaran, S., Ab Rashid, R., Harb Alqaryouti, M., and Sadeq, A.E. (2024) ‘Learner Experiences of Community of Inquiry Mode (CoI) in WhatsApp for English Language Learning.’ *SAGE Open*, 14(2): 21582440241251944. Available at: <https://doi.org/10.1177/21582440241251944> (Accessed: 13 June 2025).

Asiamah, N., Mensah, H., and Oteng-Abayie, E.F. (2017) ‘General, target, and accessible population: Demystifying the concepts for effective sampling.’ *The Qualitative Report*, 22(6), 1607-1621. Available at: <https://doi.org/10.46743/2160-3715/2017.2674> (Accessed: 13 June 2025).

Aspers, P. and Corte, U. (2019) ‘What is qualitative in qualitative research.’ *Qualitative Sociology*, 42, 139-160. Available at: <https://doi.org/10.1007/s11133-019-9413-7> (Accessed: 13 June 2025).

Baticulon, R.E., Sy, J.J., Alberto, N.R.I., Baron, M.B.C., Mabulay, R.E.C., Rizada, L.G.T., Tiu, C.J.S., Clarion, C.A. and Reyes, J.C.B. (2021) ‘Barriers to online learning in the time of COVID-19: A national survey of medical students in the Philippines.’ *Medical Science Educator*, 31(2), 615-626. Available at: <https://doi.org/10.1007/s40670-021-01231-z> (Accessed: 13 June 2025).

Berndt, A.E. (2020) ‘Sampling methods.’ *Journal of Human Lactation*, 36(2): 224-226. Available at: <https://doi.org/10.1177/0890334420906850> (Accessed: 13 June 2025).

Bin-Nashwan, S.A., Abdul-Jabbar, H. and Aziz, S.A. (2021) ‘Does trust in zakat institution enhance entrepreneurs’ zakat compliance?’ *Journal of Islamic Accounting and Business Research*, 12(5), 768-790. Available at: <https://doi.org/10.1108/JIABR-09-2020-0282> (Accessed: 13 June 2025).

Bowen, G.A. (2009) 'Document analysis as a qualitative research method.' *Qualitative Research Journal*, 9(2), 27-40. Available at: <http://dx.doi.org/10.3316/QRJ0902027> (Accessed: 13 June 2025).

Bozkurt, A. (2024) 'GenAI et al. Cocreation, authorship, ownership, academic ethics and integrity in a time of generative AI.' *Open Praxis*, 16(1), 1-10. Available at: <https://doi.org/10.55982/openpraxis.16.1.654> (Accessed: 13 June 2025).

Braun, V. and Clarke, V. (2021) 'Thematic analysis: A practical guide 1st edition.' SAGE Publications Ltd. Available at: <https://doi.org/10.1177/1035719X211058251> (Accessed: 13 June 2025).

Capranos, D., Dyers, L. and Magda, A.J. (2022) 'Voice of the online learner 2022: Shifting preferences in post-pandemic online learning.' Maitland, FL: Wiley University Services. Available at: <https://universityservices.wiley.com/voice-of-the-online-learner-2022> (Accessed: 13 June 2025).

Chan, C.K.Y. and Lee, K.K. (2023) 'The AI generation gap: Are Gen Z students more interested in adopting generative AI such as ChatGPT in teaching and learning than their Gen X and millennial generation teachers?' *Smart Learning Environments*, 10(1), 60. Available at: <https://doi.org/10.1186/s40561-023-00269-3> (Accessed: 13 June 2025).

Chaudhary, B., Covarrubia, P. and Ng, G.Y. (2024) 'The judge, the AI, and the Crown: a collusive network.' *Information & Communications Technology Law*, 33(3), 330-367. Available at: <https://doi.org/10.1080/13600834.2024.2375124> (Accessed: 13 June 2025).

Cotton, D.R., Cotton, P.A. and Shipway, J.R. (2023) 'Chatting and cheating: ensuring academic integrity in the era of ChatGPT.' *Innovations in Education and Teaching International*. Available at: <https://doi.org/10.1080/14703297.2023.2190148> (Accessed: 13 June 2025).

Cox, A. (2023) 'How artificial intelligence might change academic library work: Applying the competencies literature and the theory of the professions.' *Journal of the Association for Information Science and Technology*, 74(3), 367-380. Available at: <https://doi.org/10.1002/asi.24635> (Accessed: 13 June 2025).

Creswell, J.W. and Poth, C.N. (2016) '*Qualitative inquiry and research design: Choosing among five approaches.*' Thousand Oaks, CA: Sage Publications. ISBN: 9781483349800

Dehouche, N. (2021) 'Plagiarism in the age of massive Generative Pre-Trained Transformers (GPT-3).' *Ethics in Science and Environmental Politics*, 21, 17-23. Available at: <https://doi.org/10.3354/esep00195> (Accessed: 13 June 2025).

Demana, N.V. (2024) 'Critical reflection on the academic writing standard of first-year English second-language students in a South African university.' *JET (Journal of English Teaching)*, 10(3), 266-278. Available at: <https://doi.org/10.33541/jet.v10i3.5823> (Accessed: 13 June 2025).

Evans, C. and Robertson, W. (2020) 'The four phases of the digital natives debate.' *Human Behavior and Emerging Technologies*, 2(3), 269-277. Available at: <https://doi.org/10.1002/hbe2.196> (Accessed: 13 June 2025).

Fazil, A.W., Hakimi, M., Shahidzay, A.K. and Hasas, A. (2024) 'Exploring the broad impact of AI technologies on student engagement and academic performance in university settings in Afghanistan.' *Journal of Artificial Intelligence and Digital Business*, 2(2), 56-63. Available at: <https://doi.org/10.31004/riggs.v2i2.268> (Accessed: 13 June 2025).

Fowler, G. (2023) 'We tested a new ChatGPT-detector for teachers. It flagged an innocent student.' *The Washington Post*, April 3. Available at: <https://www.washingtonpost.com/technology/2023/04/01/chatgpt-cheating-detection-Turnitin/> (Accessed: 13 June 2025).

Gallagher, M. (2009) 'Data collection and analysis. Researching with Children and Young People.' *Research Design, Methods and Analysis*, 65-127. Available at: <https://doi.org/10.3390/jpm13091363> (Accessed: 13 June 2025).

García-Peñalvo, F.J. (2023) 'Generative Artificial Intelligence.' *Open Challenges, Opportunities, and Risks in Higher Education*. Available at: https://ceur-ws.org/Vol-3696/article_1.pdf (Accessed: 13 June 2025).

Garcia Valencia, O.A., Suppadungsuk, S., Thongprayoon, C., Miao, J., Tangpanithandee, S., Craici, I.M. and Cheungpasitporn, W. (2023) 'Ethical implications of chatbot utilization in nephrology.' *Journal of Personalized Medicine*, 13(9), 1363. Available at: https://ceur-ws.org/Vol-3696/article_1.pdf (Accessed: 13 June 2025).

Garrison, D.R. (2000) 'Theoretical challenges for distance education in the 21st century: A shift from structural to transactional issues.' *International Review of Research in Open and Distance Learning*, 1(1), 1-17. Available at: <http://www.irrodl.org/index.php/irrodl/article/download/2/22> (Accessed: 13 June 2025).

Garrison, D.R., Anderson, T. and Archer, W. (2010) 'The first decade of the community of inquiry framework: A retrospective.' *The Internet and Higher Education*, 13(1-2), 5-9. Available at: <https://doi.org/10.1016/j.iheduc.2009.10.003> (Accessed: 13 June 2025).

Gilot, R. and Cole, B.J. (2023) 'How will artificial intelligence affect scientific writing, reviewing and editing? The future is here.' *Arthroscopy*. Available at: <https://doi.org/10.1016/j.arthro.2023.01.014> (Accessed: 13 June 2025).

González-Padilla, D.A. (2022) 'Concerns About the Potential Risks of Artificial Intelligence in Manuscript Writing.' *The Journal of Urology*, 10-1097. Available at: <https://doi.org/10.1097/JU.00000000000003131> (Accessed: 13 June 2025).

Hancock, J. (2021) 'Language and the machine: Navigating the ethical complexities of AI in education.' *AI & Society*, 36(2), 491-505. Available at: <https://doi.org/10.1007/s00146-020-01092-5> (Accessed: 13 June 2025).

Hancock, J.T., Naaman, M. and Levy, K. (2020) 'AI-mediated communication: Definition, research agenda, and ethical considerations.' *Journal of Computer-Mediated Communication*, 25(1), 89-100. Available at: <https://doi.org/10.1093/jcmc/zmz022> (Accessed: 13 June 2025).

Haque, M.U., Dharmadasa, I., Sworna, Z.T., Rajapakse, R.N. and Ahmad, H. (2022) 'I think this is the most disruptive technology: Exploring Sentiments of ChatGPT Early Adopters using Twitter Data.' Available at: <https://doi.org/10.48550/arXiv.2212.05856> (Accessed: 13 June 2025).

Hinds, D. (2002) 'Research instruments.' In: Wilkinson, D. (ed.) *The researcher's toolkit: The complete guide to practitioner research*, London: Routledge, pp. 41–54. ISBN: 9780415258883

Hoernig, S., Ilharco, A., Pereira, P.T. and Pereira, R. (2024) 'Generative AI and Higher Education: Challenges and Opportunities.' *IPP Joint Collaborative Series*. Instituto Politécnico do Porto. Available at: <https://www.ipp-jcs.org/wp-content/uploads/2024/09/Report-AI-in-Higher-Education-IPP-1.pdf> (Accessed: 13 June 2025)

Huang, K., Huang, J. and Catteddu, D. (2024) 'GenAI Data Security.' In: *Generative AI Security: Theories and Practices*: 133-162. Cham: Springer Nature Switzerland. Available at: https://doi.org/10.1007/978-3-031-54252-7_5 (Accessed: 13 June 2025).

Huang, Z., and Jiang, Y. (2024) 'Bridging the gap between traditional and AI-powered educational practices.' *Journal of Educational Computing Research*, 59(2), 1-24. Available at: <https://doi.org/10.1177/07356331231234567> (Accessed: 13 June 2025).

Jarrahi, M. H., Lutz, C., Boyd, K., Oesterlund, C., and Willis, M. (2023) 'Artificial intelligence in the work context.' *Journal of the Association for Information Science and Technology*, 74(3), 303-310. Available at: <https://doi.org/10.1002/asi.24730> (Accessed: 13 June 2025).

Jayachandran, M. (2023) 'ChatGPT: Guide to Scientific Thesis Writing.' Independently Published. Available at: <https://www.barnesandnoble.com/w/chatgpt-guide-to-scientific-thesis-writing-jayachandran-m/1144451253> (Accessed: 13 June 2025).

Kimberlin, C.L. and Winterstein, A.G. (2008) 'Validity and reliability of measurement instruments used in research.' *American Journal of Health-System pharmacy*, 65(23), 2276-2284. Available at: <https://doi.org/10.2146/ajhp070364> (Accessed: 13 June 2025).

King, M.R. (2023) 'ChatGPT: A conversation on artificial intelligence, chatbots, and plagiarism in higher education.' *Cellular and Molecular Bioengineering*, 16(1), 1-2. Available at: <https://doi.org/10.1007/s12195-023-00747-0> (Accessed: 13 June 2025).

Koo, M. (2023) 'Harnessing the potential of chatbots in education: The need for guidelines to their ethical use.' *Nurse Education in Practice*, 68, 103590. Available at: <https://doi.org/10.1016/j.nepr.2023.103590> (Accessed: 13 June 2025).

Lee, B.S., Klein, J., Wohar, M. and Kim, S. (2021) 'Factors delaying marriage in Korea: an analysis of the Korean population census data for 1990–2010.' *Asian Population Studies*, 17(1), 71-93. Available at: <https://doi.org/10.1080/17441730.2020.1869324> (Accessed: 13 June 2025).

Li, Z. (2024) 'Generative AI in Higher Education Academic Assignments: Policy Implications from a Systematic Review of Student and Teacher Perceptions.' (Doctoral dissertation, Massachusetts Institute of Technology). Available at: <https://dspace.mit.edu/handle/1721.1/155977> (Accessed: 13 June 2025).

Linehan, M., Byers, C., Brooks, N.N. and Freeman, L. (2024). 'Responsible Generative AI.' Available at: https://www.objectmanagementgroup.org/wp-content/uploads/sites/8/2024/03/JOI_20240318_Responsible_Generative_AI_standalone.pdf (Accessed: 13 June 2025).

Lipke, A.P. (2024) 'Academic Language Acquisition: Developmental Stages of Academic Writing for First-Year Composition Students.' (Doctoral dissertation). Available at: <https://uh-ir.tdl.org/server/api/core/bitstreams/81a9928d-3030-4e0e-b268-c063e3234845/content>

Love, P. (2013) 'Document analysis.' In: *Research in the college context*: 99-112. Routledge. Available at: <https://www.taylorfrancis.com/chapters/edit/10.4324/9780203952740-17/document-analysis-patrick-love-new-york-university> (Accessed: 13 June 2025).

Lo, C.K. (2023) 'What is the impact of ChatGPT on education? A rapid review of the literature.' *Education Sciences*, 13(4), 410. Available at: <https://doi.org/10.3390/22277102/13/4/410> (Accessed: 13 June 2025).

Lucy, L. and Bamman, D. (2021) 'Gender and representation bias in GPT-3 generated stories.' *Proceedings of the Workshop on Narrative Understanding*, 3, 48-55. Available at: <https://aclanthology.org/2021.nuse-1.5.pdf> (Accessed: 13 June 2025).

Lund, B.D.W., Wang, T., Mannuru, N.R., Nie, B., Shimray, S. and Wang, Z. (2023). 'ChatGPT and a new academic reality: AI-written research papers and the ethics of large language models in scholarly publishing.' *Journal of the Association for Information Science and Technology*, 74(5): 570-581. Available at: <https://doi.org/10.1002/asi.24750> (Accessed: 13 June 2025).

Maphoto, K.B., Sevnarayan, K., Mohale, N.E., Suliman, Z., Ntsopi, T.J. and Mokoena, D. (2024) 'Advancing students' academic excellence in distance education: exploring the potential of generative AI integration to improve academic writing skills.' *Open Praxis*, 16(2), 142-159. Available at: <https://doi.org/10.55982/openpraxis.16.2.649> (Accessed: 13 June 2025).

Mariani, M. and Dwivedi, Y.K. (2024) 'Generative artificial intelligence in innovation management: A preview of future research developments.' *Journal of Business Research*, 175, 114542. Available at: <https://doi.org/10.1016/j.jbusres.2024.114542> (Accessed: 13 June 2025).

Mohale, N. E. (2023) 'Exploring first-year students' perceptions and challenges of using podcasts and vodcasts to enhance academic writing skills in an ODeL institution in South Africa (Doctoral dissertation).' University of South Africa. Available at: <https://hdl.handle.net/10500/30814> (Accessed: 13 June 2025).

Moran, D. (2002) *Introduction to Phenomenology*. London and New York: Routledge. ISBN: 0415183723

Morris, T. (2006) *Social Work Research Methods: Four Alternative Paradigms*. London: Sage. ISBN: 9780761974647

Müller, V.C. (2020) 'Ethics of Artificial Intelligence and Robotics.' The Stanford Encyclopedia of Philosophy (Summer 2020), edited by E. N. Zalta. Metaphysics Research Lab, Stanford University. Available at: <https://plato.stanford.edu/entries/ethics-ai/> (Accessed: 13 June 2025).

Naseer, F., Khalid, M.U., Ayub, N., Rasool, A., Abbas, T. and Afzal, M.W. (2024) 'Automated Assessment and Feedback in Higher Education Using Generative AI.' In: *Transforming*

Education With Generative AI: Prompt Engineering and Synthetic Content Creation, 433-461. IGI Global. Available at: <https://doi.org/10.4018/978-1-7998>. (Accessed: 13 June 2025).

Nguyen, A., Ngo, H.N., Hong, Y., Dang, B. and Nguyen, B.P.T. (2023) 'Ethical principles for artificial intelligence in education.' *Education and Information Technologies*, 28(4), 4221-4241. Available at: <https://doi.org/10.1007/s10639-023-11735-0> (Accessed: 13 June 2025).

Pathak, V., Jena, B. and Kalra, S. (2013) 'Qualitative research.' *Perspectives in Clinical Research*, 4(3), 192. Available at: <https://doi.org/10.4103/2229-3485.100662> (Accessed: 13 June 2025).

Perkins, M., Roe, J., Postma, D., McGaughran, J. and Hickerson, D. (2024) 'Detection of GPT-4 generated text in higher education: Combining academic judgement and software to identify generative AI tool misuse.' *Journal of Academic Ethics*, 22(1), 89-113. Available at: <https://doi.org/10.1007/s10805-024-09400-5> (Accessed: 13 June 2025).

Perrigo, B. (2023) 'OpenAI used Kenyan workers on less than \$2 per hour to make ChatGPT less toxic.' Available at: <https://time.com/6247678/openai-chatgpt-kenya-workers/> (Accessed: 10 July 2025)

Pisica, A.I., Edu, T., Zaharia, R. M. and Zaharia, R. (2023) 'Implementing Artificial Intelligence in Higher Education: Pros and Cons from the Perspectives of Academics.' *Societies*, 13(5), 118. Available at: <https://doi.org/10.3390/soc13050118> (Accessed: 13 June 2025).

Pratama M. P., Sampelolo R. and Lura H. (2023) 'Revolutionizing education: harnessing the power of artificial intelligence for personalized learning.' *Klasikal. Journal of education, language teaching and science*, 5(2), 350-357. Available at: <https://doi.org/10.52208/klasikal.v5i2.877> (Accessed: 13 June 2025).

Reja, U., Manfreda, K.L., Hlebec, V. and Vehovar, V. (2003) 'Open-ended vs. close-ended questions in web questionnaires.' *Developments in Applied Statistics*, 19(1), 159-177. Available at: https://www.researchgate.net/publication/242672718_Open-ended_vs_Close-ended_Questions_in_Web_Questionnaires (Accessed: 15 July 2025).

Roe, J. and Perkins, M. (2022) 'What are Automated Paraphrasing Tools and how do we address them? A review of a growing threat to academic integrity.' *International Journal for Educational Integrity*. 18(1), 15. Available at: <https://doi.org/10.1007/s40979-022-00109-w> (Accessed: 13 June 2025).

Rudolph, J., Ismail, M.F.B.M. and Popenici, S. (2024) 'Higher education's generative artificial intelligence paradox: The meaning of chatbot mania.' *Journal of University Teaching and Learning Practice*, 21(6), 1-35. Available at: <https://doi.org/10.53761/54fs5e77> (Accessed:13 June 2025).

Sankey, M. and Logan-Fleming, C. (2023) Political. . Contextualising Horizon, 10-11. Available at: https://ris.cdu.edu.au/ws/portalfiles/portal/90218720/Report22_23_18.11.2023.pdf

Sevnarayan, K. and Potter, M. A. (2024) 'Generative Artificial Intelligence in distance education: Transformations, challenges, and impact on academic integrity and student voice.' *Journal of Applied Learning and Teaching*, 7(1). Available at: <https://doi.org/10.35074/jalt.2024.7.1.41> (Accessed: 13 June 2025).

Solis, M., Ríos, C.A.G., Hermida, C.E.C., Alencastre, J.L.A. and Tovalín-Ahumada, J. (2023) 'The Impact of Artificial Intelligence on Higher Education: A Sociological Perspective.' *Journal of Namibian Studies*, 33. Available at: <https://doi.org/10.59670/jns.v33i.969> (Accessed: 13 June 2025).

Suppadungsuk, S., Thongprayoon, C., Krisanapan, P., Tangpanithandee, S., Garcia Valencia, O., Miao, J., Mekraksakit, P., Kashani, K. and Cheungpasitporn, W. (2023) 'Examining the validity of ChatGPT in identifying relevant nephrology literature: findings and implications.' *Journal of Clinical Medicine*, 12(17), 5550. Available at: <https://doi.org/10.3390/jcm12175550> (Accessed: 13 June 2025).

Suharno, S., Suherdi, D. and Gunawan, W. (2023) 'Implementation of a community of inquiry in teaching English as a foreign language in secondary schools: A literature review.' *Journal of Education and Learning (EduLearn)*, 17(4), 685-695. Available at: <https://doi.org/10.11591/edulearn.v17i4.20550> (Accessed: 13 June 2025).

Suliman, Z., Mohale, N.E., Maphoto, K.B. and Sevnarayan, K. (2024) 'The interconnectedness between Ubuntu principles and generative artificial intelligence in distance higher education institutions.' *Discover Education*, 3(1), 188. Available at: <https://doi.org/10.1007/s44217-024-00289-2> (Accessed: 13 June 2025).

Suppiah, S., Wah, L.K., Lajium, D.A. and Swanto, S. (2019) 'Exploring a collaborative and dialogue-based reflective approach in an e-learning environment via the Community of Inquiry (Col) Framework.' *Computer-Assisted Language Learning Electronic Journal*, 20(3), 117-139. Available at: <https://www.callej.org/journal/20-3/Suppiah-Wah-Lajium-Swanto.pdf> [Date Accessed 13 June 2025].

Unisa 2008. Open distance learning policy. Pretoria: Unisa. Available at: https://www.unisa.ac.za/static/corporate_web/Content/Colleges/CGS/schools,%20institutes%20&%20research%20chairs/institutes/documents/odl-policy_version5_16Sept08.pdf

Unisa 2015. Open distance learning policy. Available at: https://www.unisa.ac.za/static/corporate_web/Content/Colleges/CGS/schools,%20institutes%20&%20research%20chairs/institutes/documents/odl-policy_version5_16Sept08.pdf (Accessed: 11 March 2025).

van Gog, T., Paas, F., Savenye, W., Robinson, R., Niemczyk, M., Atkinson, R., Johnson, T.E., O'Connor, D.L., Rikers, R.M., Ayres, P., Duley, A R., Ward, P. and Hancock, P.A. (2008).

van Gog, T., Paas, F., Savenye, W., Robinson, R., Niemczyk, M., Atkinson, R., ... & Hancock, P. A. (2008). 'Data collection and analysis.' *Handbook of Research on Educational Communications and Technology* (3rd ed., 763-806). Routledge. Available at: <https://doi.org/10.4324/9780203880869-61> (Accessed: 13 June 2025).

van Gog, T., Paas, F., Savenye, W., Robinson, R., Niemczyk, M., Atkinson, R., ... & Hancock, P. A. (2008). Data collection and analysis. In *Handbook of research on educational communications and technology* (pp. 763-806). Routledge.

Wang, X., Lin, X. and Shao, B. (2022) 'Artificial intelligence changes the way we work: A close look at innovating with chatbots.' *Journal of the Association for Information Science and*

Technology, 74(3), 339-353. Available at: <https://academic-journals.org/journal/JEduPrac/article-full-text-pdf/xxxxxxx> (Accessed: 13 June 2025).

Wei, L., (2018) 'Translanguaging as a practical theory of language.' *Applied Linguistics*, 39(1), 9-30. Available at: <https://doi.org/10.1093/applin/amx039> (Accessed: 13 June 2025).

Woldegiorgis, E.T. and Chiramba, O. (2024) 'Access and success in higher education: fostering resilience in historically disadvantaged students in South Africa.' *Journal of Applied Research in Higher Education*, 17(2), 759-771. Available at: <https://doi.org/10.1108/JARHE-05-2023-0217> (Accessed: 13 June 2025).

Yan L., Greiff. S., Teuber Z. and Gašević D. (2024). 'Generative Artificial Intelligence and Human Learning.' Available at: <https://doi.org/10.48550/arXiv.2408.12143> (Accessed: 13 June 2025).

Zhang, Y. and Dong, C. (2024) 'Exploring the Digital Transformation of Generative AI-Assisted Foreign Language Education: A Socio-Technical Systems' Perspective Based on Mixed-Methods.' *Systems*, 12(11), 462. Available at: <https://doi.org/10.3390/systems120110462> (Accessed: 13 June 2025).