




Chapter 9

Is ChatGPT Capable of Generating Accurate Information? Academics Employ Strategies to Prevent Academic Dishonesty at a Faculty of Education

Micheal M van Wyk 

College of Education
University of South Africa 
Pretoria, South Africa

Introduction

AI is not a recent concept, as Isaac Asimov has already made his infamous robotic invention based on the *Three laws of robotics* and the science fiction book, *I Robot* (1950). Alan Turing extended AI research in the 1950s, which led UNESCO (United Nations Educational, Scientific, and Cultural Organisation) to recommend ethical considerations for using AI tools to prevent abuse, fraud, and security risks. Based on the principles of AI ethics, different AI tools were developed to minimise academic integrity risks. Those early years of exploring AI in HE (higher education) opened many opportunities and challenges to the sector. The rapid development of AI research is having a profound impact on HE. AI solutions have great potential to speed up progress towards the SDGs (sustainable development goals) and the *Africa Agenda 2063* vision.

Within the past decade, enormous strides have been made related to the effect of AI on education. According to Holmes, Bialik, and Fadel (2023:633), the application of Gen-AI (generative artificial intelligence) tools enhances education

and has grown exponentially. Scholarly works have reported how Gen-AI affects tuition, research, assessment, ethics, and professional development in the HE sector (Zawacki-Richter, Marín, Bond, & Gouverneur 2019:23). On the other hand, Nemorin, Vlachidis, Ayerakwa, and Andriotis (2023:39) doubt the claims about the revolutionary potential of AI in education, stating that they are primarily based on conjecture, speculation, and optimism. Some scholars discuss whether Gen-AI tools can track learning progress in different situations and skills. However, at the time of exploring academic staff's awareness of Gen-AI conversational tools in teaching and learning (Holmes *et al.* 2023:633), there have been studies conducted at IHEs (institutions of higher education) globally (Smolansky, Cram, Radulescu, Zeivots, Huber, & Kizilcec 2023; Peres, Schreier, Schweidel, & Sorescu 2023) but to a lesser extent in the African context (Baidoo-Anu & Ansah 2023; Mhlanga 2023; Van Wyk, Adarkwah, & Amponsah 2023:216). In November 2022, a tech company launched ChatGPT 3.5. This sophisticated AI-based conversational tool created a global movement with the characteristics of the infamous updated version, ChatGPT 3.5, which the tech company OpenAI developed. This app created a buzz around a Gen-AI tool that can mimic human responses to text prompts. ChatGPT grew faster than any other social media and became the fastest-growing app, but similar LLMs (large language model) emerged, like Claude2 and Llama2, as chatbots (Rudolph, Tan, & Tan 2023).

ChatGPT's advances have emphasised the importance of researching it in education. At a South African university, the author studied academic experiences with ChatGPT, a Gen-AI-based conversation tool. Some participants were exposed to and used Gen-AI tools like ChatGPT 3.5 to experiment with teaching and learning activities. This inquiry generated the following research questions:

- *Is ChatGPT capable of generating accurate information?*
- *What strategies do academics use to prevent academic dishonesty at a faculty of education?*

This study made three significant contributions to Gen-AI-based LLM research. Using Gen-AI in teaching is being studied, and it is contributing to that research. The study expands our understanding of Gen-AI, particularly ChatGPT 3.5 as a chatbot-based LLM in the faculty of education. Third, one should design strategies and create an awareness of detector tools to prevent academic dishonesty. Practical implications included policy revisions for ethics, tuition, and research. There is also a need for continuous professional development in the faculty of education.

Literature Review

AI-based Research's Impact on the Future of Education

AI has made significant progress in education because of the pioneering work of Isaac Asimov and Allan Turing. This has led to using AI tools to promote advanced teaching and learning experiences. Launching the first LLM model created a hype around ChatGPT as a Gen-AI-based conversational tool. This led to the so-called chatbot war among tech companies – the infamous *California Dollar Rush* (Rudolph *et al.* 2023:370; Griffith & Metz 2023:45). Several tech companies followed OpenAI as an example, focusing on what they could get out of the ‘dollar rush.’ Studies conducted on Gen-AI tools viewed these LLMs as potent technological tools which are tagged as a ‘friend yet as a foe’ (Lim, Gunasekara, Pallant, Pallant, & Pechenkina 2023:13 of 13; Yang 2022:7 of 7). We do not know for sure if ChatGPT and related chatbots have caused a noteworthy change in teaching, learning, research, and ethics. However, more scientific inquiry must be conducted on its benefits and drawbacks. It is argued that Gen-AI is still in the infancy stage of research and development in education. Given the latter, studies are indicating that, for example, ChatGPT 3.5 and Claude2 could act on prompts in a ‘human’ manner but can also identify student learning gaps (Popenici & Kerr 2017:9; Zawacki-Richter *et al.* 2019:25; Lim *et al.* 2023:13 of 13). Kaplan-Rakowski, Grotewold, Hartwick, and Papin (2023) have discovered that ChatGPT 3.5, a Gen-AI-powered LLM tool, can create targeted content and assist with writing tasks for educators and students. Studies have indicated that Gen-AI is very

beneficial and has become very popular in education (Holmes *et al.* 2023:634).

Academic Dishonesty and Cheating with Gen-AI-Based Tools

The emergence of ChatGPT has created a hype about chatbot popularity as a 'hot tech topic' (Leaver & Srdarov 2023:2 of 11; Taecharunroj 2023; Van Wyk *et al.* 2023). Several African studies have emerged on awareness of the Gen-AI tool that was created, and most academics and students have started using ChatGPT in teaching and learning (Baidoo-Anu & Ansah 2023; Mhlanga 2023; Van Wyk *et al.* 2023:216). Faculties of education have witnessed exponential promise due to Gen-AI-based tools, which have been implemented in contact, blended, and ODL (open distance learning) contexts. It could be deduced that Gen-AI tools have brought a pedagogical shift in HE. Studies conducted in these contexts found that these tools can enhance student learning and teaching opportunities. For example, Mohamed's study reveals how educators view the efficacy of ChatGPT in teaching EFL (English foreign language) students (Mohamed 2024:3215). Research reports the advantages of using Gen-AI tools in fostering a student-centredness approach (Luan *et al.* 2020:9 of 11; Huang *et al.* 2022:238; Antonenko & Abramowitz 2023:69). When Gen-AI tools are applied in this approach, personalised learning experiences are supported and enhanced (Abawi 2015:49; Chan & Hu 2023:18 of 18; Li & Wong 2023:423; Lodge, Thompson & Corrin 2023:8). It also promotes students' cognitive and emotional needs (Baek & Kim 2023). Cope, Kalantzis, and Searsmith (2021:1231) have found that educators utilised creative techniques to assess student work in various subjects.

Ethical Implications of Using Gen-AI Tools in Teaching and Learning

As Gen-AI tools are accessible to academics and students, academic dishonesty, cheating, plagiarism, and copyright infringement have ethical consequences for education. IHEs are updating their policies on tuition, research, and assessments to maintain academic honesty, according to recent studies. Cooper's study reveals that using copyrighted material in science education

without permission can have a negative impact on academic integrity (Cooper 2023:447). To curb this challenge, academics must be empowered to use Gen-AI tools to raise awareness and set an example for students. Studies have already reported possible remedies for academics to model and act responsibly on the use of Gen-AI tools in their praxis (Ali 2023:5; Huallpa 2023:112; Dwivedi, Kshetri, Hughes, Slade, Jeyaraj, Kar, Baabdullah, Koohang, Raghavan, Ahuja, & Albanna 2023:63 of 63; Cotton, Cotton, & Shipway 2023:10; Kelly, Sullivan, & Strampel 2023:14 of 16).

Strategies to Prevent Academic Cheating and Plagiarism

Some scholars argue that to protect the image and integrity of IHEs, specific measures must be developed to prevent cheating. This author believes that ethical considerations must be applied consistently and, if needed, policies related to integrity, copyright infringements, and praxis of academics must be revised. Given the latter, IHEs should implement strategies to prevent academic dishonesty. Literature provides measures and strategies that can be considered to prevent academic dishonesty of Gen-AI tools in teaching and learning. A study by Oravec (2023:215) found that specific cheating-detection strategies and AI-empowered skills could be used to support students in learning to deal with possible academic dishonesty or plagiarism. To prevent cheating, Sallam (2023:17 of 20), as well as Firaina and Sulisworo (2023:41) suggest that educators should present group projects, problem-based assignments, and case studies. In these assignments, students can present their findings together by writing and reporting.

There are other strategies suggested, like group discussions (Castillo, Silva, Arocutipa, Berrios, Rodriguez, Reyes, Lopez, Herbert, Rivera, & Arias-González 2023:11). Several studies have reported soft skills for students to succeed and found employability in an AI-dominated workplace (Reilly 2018:52; Baidoo-Anu & Ansah 2023:57; Mukherjee 2023:124; Toli 2023:79). Scholars argue that soft skills such as social interaction skills (emotional self-regulation, collaborating with teams under pressure), creativity, curiosity (innate to explore, seek information to solve the problem, challenge assumptions), and

critical thinking skills apply to AI generated information, logical reasoning, and reflective thinking (Chaudhry & Kazim 2021:14; Mukherjee 2023:124; Toli 2023:79). Universities subscribed to several plagiarism detection software such as Turnitin and SafeAssign. Additionally, other GPT detectors such as GPTZero, ZeroGPT, GPT 2 output detector, CheckGPT, and Writefull are designed to combat outsourcing assessment and research tasks (Liu, Yao, Li, & Luo 2023:23 of 23; Perkins 2023:14). However, with new LLMs such as ChatGPT, it is difficult for inexperienced faculty members and researchers to detect GPT-generated texts (Liu *et al.* 2023:22 of 23).

Many IHEs have recently employed plagiarism detection tools to promote novelty in writing and detect novel or unexpected ways of cheating or plagiarising (Canzonetta 2021:1). Before the launch of LLMs like ChatGPT 3.5, prior studies have revealed that anti-plagiarism software such as Turnitin and SafeAssign was used and reported as efficient in deterring plagiarism acts (Ledwith & Risquez 2008:374; Canzonetta 2021:1; Perkins 2023:13; Shang 2019:112).

Methodology

Since universities became known with ChatGPT 3.5, they started with critical conversations about Gen-AI in education. For example, throughout 2023, at this mentioned African university, academics were introduced to online webinars, face-to-face seminars, college discussion forums, and virtual conferences, centred around Gen-AI tools, in particular ChatGPT 3.5 in HE. In one of the virtual Microsoft Teams videoconferencing sessions on ChatGPT 3.5 and detectors, an invitation was sent to academics to participate in an awareness study related to Gen-AI conversational tools. Based on this exposure, the participants agreed and signed a consent application to accept being a part of the study. Based on the notion of phenomenology, African scholars' phenomenology is the science of experiences-as-lived and both a theory and a method used to explore academic awareness and experiences with Gen-AI tools by academics (Koopman & Koopman 2018:16; Van Wyk 2022:124). Various research methods have been used to measure Gen-AI tools, but the chosen method was IPA

(interpretative phenomenology analysis) for this study. Smith and Osborn (2008:67) argue that an IPA approach is conducted to create a narrative account for each participant through verbatim statements, views, and beliefs. For this study, the IPA is appropriate for exploring four academics' lived experiences and how specific strategies to prevent cheating and academic dishonesty were applied in teaching and learning. The purposive sampling comprised academics. Pseudonym names were used, such as lecturers, senior lecturers, associate professors, and full professors, to protect the identity of participants. Dates and times were scheduled on Microsoft Teams to conduct the interviews. The interviews conducted on Microsoft Teams were transcribed. We then downloaded and secured the recordings as part of data management. An online link was sent to participants to verify the accuracy of recordings, transcripts, and questions. After a week, if participants agreed, an e-mail (no names to protect identification, codes as 12345@unisa.ac.za) was sent to the study's author. The participants stated in their e-mailed responses that they agreed that the recordings, data generated, and transcripts were a true reflection. The e-mail served as proof of their participant validation and consent.

The data exploitation approach for conducting the IPA approach as provided by Hycner (1999) indicates how the simplified 'explicitation' strategy as an 'investigation of constituents of the phenomenon while keeping the context of the whole' (Hycner 1999:161) is used. The extracts were analysed and themes were identified as guided by the IPA analysis process (Hycner 1999:148; Creswell 2013:slide 23; Nowell, Norris, White, & Moules 2017). The ethical clearance for the study was granted before it started (reference 2020/08/12/90178912/19/AM).

Findings

The results confirm that researchers conducted minimal research on ChatGPT as an AI conversational tool. Academics were aware of the potential benefits and drawbacks of ChatGPT for teaching and learning. Strategies were developed to prevent academic cheating in AI-based learning.

Create an Awareness of Gen-AI Detector Tools

After the launch of ChatGPT 3.5, students and academics agreed it is effortless to cheat or plagiarise with LLMs like ChatGPT or Barb. IHEs are compelling to empower staff and students to utilise Gen-AI tools for plagiarism detection, designed explicitly for AI-generated text. Participant 3 stated, *'I informed my postgraduate students about the drawbacks of ChatGPT, but I exposed them to GPTZero as a Gen-AI detector software.'*

Universities introduced quality assurance practices and ethical considerations for postgraduate students to submit their chapters through Turnitin as a QA (quality assurance) mechanism to prevent academic cheating or plagiarism. Participant 4 narrated: *'My doctoral students used Turnitin software, but the Gen-AI detector identifies whether part of the text is generated by any Gen-AI software.'*

Designing Active and Participative Authentic Learning and Assessment Tasks

Participants believed that measures need to be taken to prevent academic cheating. They viewed the purpose of using chatbots to generate content for students to be critically evaluated and reflected on. Some asserted that educators must adopt strategies to avoid cheating or academic dishonesty. They proposed creating case studies and group projects for students to report on. Participant 1 claimed: *'Problem-based learning tasks are used by this person to prevent cheating, where students reflect, solve, and evaluate each task either individually or in a group. The associate professor sets criteria for grading tasks performed by one group, and evaluated by another. A professor created projects for students to do instead of taking a regular test.'*

Exposing Students to Gen-AI Detection Tools

Participants thought educating students about detector tools would discourage cheating and promote good behaviour. One participant (Participant 2) maintained that he exposed and empowered his students to use detector tools to combat cheating in his course. Participant 2 (female senior lecturer) asserted: *'Since*

ChatGPT was launched, I have exposed my students to this generative tool. This was my way to create an awareness that detection tools will be used as a preventive measure to discourage cheating.' Participant 3 (a professor) echoed the same sentiment: *'Several communications (social media platforms) were posted or sent by internal e-mail to staff and students that using generative software is not allowed. This is a measure to prevent academic dishonesty.'*

Advocating Gen-AI-Chatbot Strategies

Currently, different detector tools are available to prevent plagiarism. For some participants, advocating strategies to prevent cheating is the best way. They believe exposing students to detector software is vital to discourage cheating. Participant 4 (associate professor) narrated: *'Before students submit an assessment task, a Gen-AI declaration is assigned. I explained the similarity in the text of each work. Ignorance is not an excuse, and cheating in my course can lead to my being deregistered.'*

However, some participants were positive and stated that embracing these generative tools is currently an excellent opportunity. Ethics and collective responsibility are essential for promoting chatbots in education. Participant 5 mentioned: *'Inculcate a sense of ethical and collective responsibility among our students. I like the critical conversations about ethics and zero-tolerance of fraud using Gen-AI tools. I am of the view to protect our institution's image, qualifications, and values.'*

Create Meaningful and Authentic Learning Opportunities

Participants opined that to prevent cheating among students, an awareness, adoption, and design of authentic learning experiences will ultimately change the usefulness of chatbots. Webinars on Gen-AI conversational tools are valuable strategies to increase awareness. We should create discussion forums and online panels to have critical conversations about detector software and inculcate a sense of the adoption of detector tools in teaching and learning. Participant 6 (associate professor) echoed: *'Our college hosted several webinars on ChatGPT and other generative tools. To prevent cheating, assign research projects requiring students*

to create their own data collection tools or write case studies requiring human problem-solving skills.'

Teaching Students that ChatGPT is Viewed as Truth or Fake

Participants stated that they seldom heard conversations about the ethics of education and the importance of moral compasses. Some participants felt that technologies come with extra responsibilities and that ethics should be taught in every discipline. Another vital skill students should learn for future employability is asking better questions. Participant 7 (senior lecturer) discussed the importance *'of avoiding inaccurate information from language models like ChatGPT in creating authentic learning opportunities. Can ChatGPT generate accurate content, or how far can we trust the information to be true? We must teach ourselves and the students that we graduate to do that.'*

Empowering Students with 21st-Century Soft Skills in an AI-Dominated World for Future Employability

The exponential growth in Gen-AI in education has changed HE's strategic and operational objectives. Students must be empowered with soft skills to succeed in an AI-dominated workplace. These soft skills are social interaction skills (emotional self-regulation, collaborating with teams under pressure), creativity, curiosity (innate to explore, seek information to solve the problem, and challenge assumptions), and critical thinking skills (applied to AI-generated information, logical reasoning and reflective thinking). Participant 5 argued that *'soft skills are important to prepare students for future employability. They believe that universities must rethink and reimagine curricula and relevant academic programmes to equip students with problem-solving, critical thinking, emotional intelligence, communication, interpersonal relations, and technical skills to be relevant for employability in an AI-dominated landscape.'*

In the past decade, an increase in rapidly evolving AI and technological advancements has changed the requirements for the workplace. For IHEs, businesses, and governments to be relevant in these rapid changes in AI-dominated spaces, it becomes imperative to rethink the relevance of existing curricula.

As these AI-dominated tasks have changed the current and futuristic workplace, unique tasks done by humans have become obsolete. Participant 2 provided an example: *'In one of my modules [design-based research], which focuses on academic writing and critical thinking, I used ChatGPT 3.5 to generate a 600-word text on a contemporary topic. For this activity, students must identify grammatical errors, in-text referencing, correctness of citations, analyse paraphrases of the text and present individually to the group. The group responded to each student's presentation.'*

Create Alternative Assessment Strategies for Meaningful and Authentic Learning Opportunities

Academics revealed planned creative writing tasks. According to Participant 4, *'it is vital to empower students in creative writing skills where students are asked to draw career timeline mapping and present each personal story on the career timeline mapping to the class.'* These assignments require original thought and personal expression and cannot be easily generated by an AI platform. Another authentic learning opportunity is the case study as an alternative strategy. Participant 7 claimed that as part of the creative writing skills course, students must apply learned skills and knowledge in real-world issues: *'Students are instructed to plan and write a case study about any local community issue like sewerage as a serious environmental issue – ChatGPT generated text is not allowed.'*

Discussion of Findings

In this study, the participants were of the view that Gen-AI tools could be an advantage in teaching and learning. Chatbots support students with case studies, problem-solving, project-based learning, and academic writing using AI-conversational tools (Kaplan-Rakowski *et al.* 2023:30). Participants echoed sentiments of the usefulness of Gen-AI tools in promoting advancing teaching and learning experiences (Megahed, Chen, Ferris, Knoth, & Jones-Farmer 2023:27 of 30; Castillo *et al.* 2023:11). According to Participant 8, *'ChatGPT was very useful in developing academic writing skills for postgraduate students.'* Another issue that emerged

from the interviews is that the disruptive Gen-AI conversational tools will likely change the face of HE immensely. Mohamed (2024:3208) reports that the lecturers viewed ChatGPT as efficient in teaching English Foreign Language students. Students were concerned about the cost and availability of AI tools for those who are disadvantaged, as companies were investing in them for profit.

Participants claimed that it is vital to be aware of and consider ethics when using AI chatbots. They felt academics must be cognisant of the speed of the emergence of new Gen-AI tools since the launch of ChatGPT 3.0 in 2022. Studies concur that the ethics of using Gen-AI tools by students is a major issue that needs to be addressed (Baek & Kim 2023; Eke 2023:4 of 4; Cotton *et al.* 2023:12). Certain studies are expressing the fear of ethical implications, as cheating, plagiarism, and copyright infringement have ethical implications for education (Cooper 2023:449). The participants concurred that ethics is at the heart of preventing and detecting cheating or academic dishonesty. There were already debates about ethical issues like academic dishonesty and cheating due to using Gen-AI tools. There are AI-detection software to detect academic dishonesty, but these are expensive for HE (Oravec 2023:213).

IHEs must update policies and educate staff and students to prevent cheating with Gen-AI tools (Dwivedi *et al.* 2023:61 of 63). According to the participants, these are critical strategies against academic dishonesty.

Certain measures are proposed to prevent academic cheating using AI in teaching and learning. Participants believed it necessary to prevent academic dishonesty and adopted measures to combat fraud and cheating. Students are allowed to present case studies, research, and problem-based projects as a group and report the results (Firaina & Sulisworo 2023:39). Participant 9 proposed an '*alternative assessment by creating project-based learning tasks for students to plan, implement, and present their final projects.*' Studies advocate the use of AI chatbot strategies to prevent academic dishonesty (Ali 2023:4; Cotton *et al.* 2023:12). Several participants believed it is vital to expose students to detector software as a way to discourage cheating. Participants

opined that to prevent cheating among students, awareness, adoption, and design of authentic learning experiences will ultimately change the usefulness of chatbots. Webinars on Gen-AI conversational tools are a valuable strategy to increase awareness. According to Castillo *et al.* (2023:10), discussion forums can be used as an effective, active method to create critical conversations about Gen-AI detector software to inculcate a sense of student adoption of detector tools.

Gen-AI tools had exponentially grown globally, so education had to change their teaching and learning. According to Castillo *et al.* (2023:16), ChatGPT had a significant impact on student learning. Scholars posit that soft skills like social interaction, creativity, curiosity, and reflective thinking are vital for futuristic workforce placement. Studies reported that students are empowered with soft skills to succeed in an AI-dominated workplace (Baidoo-Anu & Ansah 2023:57; Mukherjee 2023:124; Reilly 2018:52; Toli 2023:79). Participant 5 argued that *'soft skills are important to prepare students for future employability. Universities must rethink and reimagine the relevant academic programmes to equip students with problem-solving, critical thinking, emotional intelligence, communication, interpersonal relations, and technical skills to be relevant for employability in an AI-dominated landscape.'*

Conclusion

Since the launch of the first LLM, several scholarly publications have reported benefits, but some scholars have raised concerns about ethics and morality. These LLMs have brought to light a significant pedagogical change in HE. This exploratory study revealed that academic staff created an awareness of the ethics of ChatGPT. Some participants raised a concern about whether *ChatGPT is capable of generating accurate information* because the world is full of inaccurate knowledge due to many chatbots. Participants believed that specific strategies could prevent academic dishonesty and cheating. The author of this study has suggested some strategies to prevent cheating with Gen-AI tools. Academics must redesign authentic context-based assessment tasks, such as specific case studies, problem-solving activities, and project-based learning tasks, and academic writing skills.

As suggested by participants, these strategies create hands-on learning tasks, introduce students to Gen-AI detection tools, and create authentic learning opportunities. The participants suggested that education faculties need to update AI policies, provide guidelines and educate students about AI literacy skills and AI detector tools for the ethical use of Gen-AI tools in teaching and learning. Furthermore, sentiments revealed that education must rethink and reimagine existing curricula to strategise by empowering student educators with soft skills to succeed in an AI-dominated workplace.

This study made significant contributions to advance an understanding of Gen-AI-based LLM research. This research indicates how Gen-AI can stop cheating in academia. It is suggested that awareness needs to be created using discussion forums and online panels as critical conversations about detector software like GPTZero. This study extends the theoretical knowledge of Gen-AI, in particular, an awareness of the 'truth or fake' of Gen-AI. The author recommended modifications to the education of educators, covering ethics, tuition, research, assessment, and professional development. Futuristic inquiry is to be conducted to rethink curricula to enhance the soft skills of student educators in preparing for an AI-dominated workplace.

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