RESEARCH ARTICLE:

Generative Artificial Intelligence (AI) Tools in Higher Education: A Moral Compass for the Future?

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Abstract

Higher education is experiencing a paradigm shift with the advent of Generative Artificial Intelligence (AI) tools and large language models. This transformative approach is revolutionising education and the world of work and, if harnessed correctly, has the propensity to shape future minds. The study sought to understand academics' and teaching and learning (TandL) specialists' perceptions at a private higher education institution (PHEI) in South Africa (SA) regarding the ethical implications of using Generative AI tools in TandL prior to the institution taking a formal stance on the use of these tools. This qualitative exploratory study purposively selected 59 academics, researchers and TandL specialists across nine delivery sites at a PHEI in South Africa. Data was collected anonymously using an open-ended online questionnaire, and thematic analysis was performed. Five key themes emerged from the data: Academic integrity while maintaining agility; monitoring responsible ethical use and investments; protection of privacy; accessibility and equality and tools and systems for AI identification. The study also highlights the importance of considering the moral implications of Generative AI in education and how it can be used to shape the future of learning. This study contributes to the limited literature available on the use of AI in higher education TandL and its ethical implications in the global south.

Keywords*: artificial intelligence; ethics; private higher education; South Africa; teaching and learning*

Introduction

With artificial intelligence (AI) emerging so rapidly into various spheres of life, from public and private sectors to research institutions, the emergence of AI ethics has come about in response to AI's significant impact on life, society and business (Morley *et al*., 2021). Thus, the overwhelming response to AI has been to ensure that there are guidelines and principles for ethical AI usage (Bleher and Braun, 2023). However, there is much deliberation among various affected spheres as to what should and should not be included in ethical AI guidelines, principles and policies. The integration of Generative AI tools, especially large language models (LLM) like ChatGPT into higher education can no longer be viewed as an "optional extra" that is included in teaching and learning (TandL), research and community engagement. Instead, it is now a strategic imperative for HEIs to adopt AI in a manner that is inclusive, creative, engaging, fair, transparent and human-centred (Slimi and Carbalido, 2023). The underlying need to ensure academic integrity for students in higher education institutions (HEIs) is to produce graduates who have developed the required skills, attributes and capabilities as required by the world of work (Li, Dhruv and Jain, 2024). Thus, there is a continued dialogue pertaining to the deliberate shift away from a "one-size-fits-all" approach to one that is able to deliver quality learning material to students through a wide range of languages and approaches (Corrigan *et al*., 2023). Hence, there is a conscious effort to integrate Generative AI tools into HEIs in a manner that addresses important ethical implications while ensuring the elimination of prejudice (Zembylas, 2021). The absence of this can result in HEIs experiencing potential reputational damage in the eyes of the public, private and regulatory sectors (Al-Zahrani and Alasmari, 2024).

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Society is rapidly entering a reality whereby AI will assume the roles and duties currently performed by people (Li *et al*., 2024). How can HEIs utilise the advancement of AI to remain relevant and future proof their practices to prepare the new AI workforce? How can higher education assist with preparing students today for a world of work that will be drastically different by the time they enter it? The reality is that there is no one correct answer on how HEIs should go about understanding and preparing for the ethical implications of AI in higher education and specifically TandL. Therefore, the purpose of this study is to provide insights into how the implementation of AI across the TandL within an HEI promotes ethical usage and academic integrity across the institution. While there is a contemporary influx of information pertaining to how Generative AI can be used and what the benefits and challenges are, limited insights remain into how these concepts and theoretical perspectives can be realised as a means of ensuring academic integrity, creating an unbiased and equal environment andprotecting students' privacy while being agile enough to respond to changes in technology and the educational landscape.

Literature Review

The impact of AI is far reaching and has sparked a much needed and far reaching conversation on AI ethics. Jobin *et al*. (2019) sought to understand the current principles and guidelines on ethical AI and found five core ethical principles: transparency, responsibility, privacy, non maleficence and justice and fairness. Hangendorff (2020) notes that using guidelines for creating ethically driven AI systems is often seen as a technical fix for privacy, safety, anti discrimination and accountability concerns. The author notes that while the guideline document identifies areas for the AI system to guard against, there are innumerableomissions that are often not included or that are unbeknownst to the organisation at the time. Depending on the validity of each, these omissions should be included in future guideline editions. While AI ethics education needs to be integrated into educational practices or policy through a guideline document, Borenstein and Howard (2020) note that AI ethics education is not fully recognised or integrated into the curriculum. Going on to explain that the introduction of AI ethics in education will prepare the next generation of AI users and in instances where AI ethics is already introduced, the active re evaluation of curricula is then critical. It is important for educational organisations to note that while students may be familiar with the institutional code of conduct that guides ethical practice, it does not automatically guarantee that students' behaviour will conform to the code of conduct.

The International Center for Academic Integrity (2018: 4) defines academic integrity as "a commitment to six fundamental values: honesty, trust, fairness, respect, responsibility and courage". It is evident from this definition that individuals who utilise Generative AI tools to complete academic deliverables such as formative or summative assessments or research tasks are contravening the values of academic integrity. Generative Generative AI tools used in academic deliverables by students are viewed differently by HEIs. For example, ChatGPT is seen as a disruptive technology that has augmented students' contribution towards their academic material, whereas Grammarly is viewed more favourably and has less academic debate surrounding it (Currie, 2023). Therefore, this presents a unique opportunity for HEIs to not only regulate the use of Generative AI tools in assessments but to also re engineer the way learning and assessment takes place (Currie, 2023). Sullivan *et al*. (2023) found that with the introduction of Generative AI tools such as ChatGPT in higher education when reporting on this matter, there has been an overwhelming number of articles by universities on academic integrity and opportunities for innovative assessment design, but a scant response on how these Generative AI tools can be used to better the success of students from disadvantaged backgrounds. Thus, it can be noted that while HEIs put out public communication on their stance and acceptance of Generative AI tools in a reactive manner, limited knowledge on how to harness these Generative AI tools for the betterment of students remains.

The use of Generative AI in academic assessments and research is the ability of these applications to provide answers to undergraduate and postgraduate students. The resultant fear for HEIs is that students will become increasingly dependent on Generative AI application tools such as ChatGPT for academic deliverables (Eke, 2023). Shalevska (2023) found that the quality of prompts used by students when seeking answers for assessments will determine the tool's accuracy. The study by Sindre (2023) found that the use of AI chatbots in an introductory programming course was useful for both short and long type questions, with longer questions requiring students to engage in a longer dialogue with the prompts. The author makes a valuable contribution to addressing academic integrity in assessments in that assessments should include a mixture of questions that would avoid short descriptions, which generative Generative AI tools can easily address. This is supported by

Nikolic *et al*. (2023), who indicate that there must be a deliberate change in assessment practices, given that ChatGPT will continue to evolve and meet the growing needs of students by addressing shortcomings of the Generative AI tool. Sindre (2023) notes that it is vital that students continue to engage with Generative Generative AI tools to increase proficiency, given that the world of work, too, will become dependent on Generative AI tools such as chatbots. Therefore, Shalevska (2023) indicates that student proficiency in utilising these Generative AI tools should increase to ensure that they can leverage the tool effectively.

Varthana (2024) explains that ethical considerations and addressing bias are some of the challenges of AI in education. Expanding on this, the aspect of ethical considerations addresses the concerns pertaining to biases in algorithms and the potential for AI to perpetuate inequalities. As a remedial to this it is recommended that HEIs interrogate, evaluate and question AI systems to identify any potential areas of bias or unfair practice that can arise. From the students' perspective, to address bias in AI systems, they should understand where potential for bias can occur and advocate for the use of unbiased and fair AI applications (Varthana, 2024). A common challenge facing education is using Generative AI tools for the purpose of detecting potential AI bias. HEIs must first understand the origins of the disparity and the varying underlying causes and then determine how AI can be used to address the challenge. This is a multifaceted approach. There is the understanding that algorithms may inherently lean towards bias as they are developed by humans and that they build on their thought processes and reactions from historical data (Nazer *et al*., 2023). Thus, there is a need for HEIs to ensure that they understand the context within which they work with AI, understand the advantages and limitations and that they develop strategies that mitigate bias while simultaneously promoting fairness and equity (Hannah, 2024). Expanding on this is the notion that when an HEI works on mitigating bias in AI algorithms, that there must be a deliberate approach to eliminating bias which has the potential to negatively impact disadvantaged or underrepresented groups (Hannah, 2024).

Yilmaz and Yilmaz (2022) indicate that students prefer to be aware of how their data from the smart learning management system is protected, how it is used, who can assess the data and the privacy policy that governs the system. Further to this, the afore authors note that students may not always express fear or anxiety pertaining to the protection of personal information as a result of not having sufficient knowledge and awareness of the implications of cyber security. Supporting this, Varthana (2024) indicates that students must be aware of what their data privacy rights are and to understand in what way their information is being used. Thus, there is a need for HEIs to ensure that there are appropriate measures to protect student information in place, and that they must place data security at the forefront when deciding on AI applications (Varthana, 2024). From a South African perspective, all HEIs are obligated to adhere to the Protection of Personal Information (POPI) Act which is crucial in ensuring the compliance and safeguarding of personal information and the responsible use of AI (Mbonye *et al*., 2024). Prinsloo *et al*. (2022) indicate that technological solutions used to maintain student data privacy in learning analytics are based on the assumption that students have control over their data that can be exchanged when under the appropriate conditions or that students fully embrace the need for privacy as a basic human right which is to be protected and respected. The authors go on to note that when utilising technology to regulate data privacy in learning analytics, the responsibility lies with the institutions' stance on data governance, accountability, consent and data security. According to Yi and Li (2022), AI and the Internet of Things (IoT) have the potential to significantly advance student privacy protection.

The idea of education is to provide graduates with the abilities and qualities they need to succeed in life and for them to make valuable contributions to society; therefore, the more it changes, the premise it is based on, still remains the same (Spillane, 2012). Therefore, the role of education is to fulfil this requirement in the most impactful and meaningful ways. Yeo (2023) notes that while a significant number of Generative AI tools are used in education, it is the lecturers' responsibility to ensure that these tools are integrated seamlessly into TandL practices in a manner that they become ingrained in classroom practice as a means of problem solving. A key question that leaves countless HEIs floundering is the notion of how this should be accomplished. What are the right mechanisms and approaches that should be followed? As this is a dynamic facet of higher education, there is no one correct answer, approach, or philosophy to follow. However, HEIs can utilise a framework or guideline document to establish an ethical and responsible AI use for diverse HEIs (Hannah, 2024). The author goes on to explain that the goal of many higher education systems is to create and foster an enriching and diverse learning environment that reflects individuals from varied races, socioeconomic and religious backgrounds, ethnicities and

educational experiences. The development of an ethical framework that ensures that AI applications and technology enhance the quality and accessibility of education, is supported by Goudey (2024), who goes on to explain that this development must be a priority to ensure that bias is avoided, student privacy is protected and fairness is ensured.

HEIs must ensure that the curricula includes the prevalence of AI. This must include aspects of technological literacy (i.e. how to work with machines and understanding how machines work); data literacy (interpreting and utilising information in a constructive manner) and human literacy (cultivating human traits such as leadership, ethics, understanding intercultural context and entrepreneurship) (Sharma, 2024; World Economic Forum, 2024). The use of AI in assessments goes beyond ***how*** students are using the tools; rather, it should also address the concern of ***what context*** are students engaging these tools in. Goudey (2024) explains that HEIs and business schools, specifically, must ensure that the curricula offered to students allow for graduates to enter an AI driven workplace successfully. Thus, they must cultivate critical thinking and soft skills that meet industry needs. However, the author does note that, while this is an easy directive to recommend, it is harder to implement given the rapidly evolving educational technology tools (Ayodele *et al*., 2023). Thus, it is not only how students are assessed using AI but also what students are assessed that will greatly impact the academic integrity of an HEI. From this, it can be seen that for HEIs to be agile in adapting to AI, that the curricula must equip students with a broad range of skills and capabilities that are easily transferable and flexible enough to allow students to adapt to evolving situations. To create this flexibility in curricula, HEIs must also be guided by a framework or guideline document to ring fence changes that are being made, as HEIs can run the risk of "doing too much too soon" without realising the true impact of AI in higher education with the resultant impact potentially being a net zero.

Methodology

This empirical investigation sought to address intricate research inquiries that encapsulate the multifaceted ethical implications of incorporating Generative AI tools in higher education TandL. The overarching questions guiding this study were as follows:

i. How should academics and TandL specialists manage the use of Generative AI tools to ensure academic integrity and values are maintained whilst allowing the PHEI to remain agile enough to respond to the advancements of AI technologies?
ii. How can the institution protect student privacy and human rights while using Generative AI tools to improve learning outcomes?
iii. How can the PHEI ensure that the Generative AI tools used at the institution are fair and unbiased and that they do not reinforce existing inequalities?

In line with Saunders *et al*. (2019), a qualitative methodological approach was deemed most apt for probing the subjective experiences and perspectives of academics and TandL specialists at a PHEI. It is noteworthy that the investigation sought the perceptions of these stakeholders prior to the formal institutional stance on the integration of Generative AI tools. The research design adopted a cross sectional configuration, encompassing various Generative AI tools, including but not limited to ChatGPT, Copilot, Midjourney, and DALL-E. The choice of these tools was comprehensive, reflecting the diverse landscape of AI applications in the higher education domain. To solicit insights and perspectives, data collection was executed through an open ended online questionnaire, featuring unstructured questions. The selection of an online questionnaire was driven by considerations of the geographical dispersion of PHEI campuses and the need for accessibility and availability for the target academic and teaching population. Before deployment, the instrument underwent meticulous scrutiny by the PHEI Ethics Committee. The review process resulted in minor refinements, notably eliminating demographic questions and correcting minor language errors. The survey questions, namely 5, sought to address the above research questions and their formulation was informed by the available literature on Generative AI, the various types of Generative AI tools and the key ethical considerations surrounding its use in higher education. The questions were open ended and phrased in a manner that required the participants to reflect and expand on their responses.

Data collection spanned from April 3 to April 15 2023 and targeted academics and TandL specialists across ten PHEI sites of delivery (Western and Eastern Cape, Durban, Pietermaritzburg, Ruimsig, Sandton, Midrand and Pretoria) within South Africa, approximating a total population size of 180. Using the MSForms platform, the survey

link was distributed via email through a nonprobability sampling methodology, specifically purposive sampling. The survey was anonymous. The inclusivity criterion encompassed all races, genders and age groups within the participant pool. The study included only academics and TandL specialists at the PHEI who were under study lecturing on any qualification at the PHEI. A screening question was included in the survey to ensure participants met the participation requirements. The survey concluded after garnering 59 responses, reaching a point of data saturation where additional responses did not yield substantially new insights. Post data collection, the qualitative data were analysed using Nvivo 12 Pro software, deploying thematic analysis based on inductive reasoning. The data was imported into the software, and codes were created based on the nodes of the keywords in the data. Thereafter, a search query was run for the keywords. Based on the created visual insights on the findings were recorded. Five key themes and subthemes emerged from the data.

To ensure the credibility of the findings, the authors familiarised themselves with the raw data. A review and discussion of the raw and analysed data, the nodes and emerging themes was conducted to assess for overlapping themes' consistency and accuracy of the emerging themes. Thereafter, a summary of the content for each question was made. The themes and subthemes were defined and named. The authors further sought feedback from a qualitative data analyst expert on the findings and the interpretation of the data. Each theme discussion was supported by verbatim quotes and literature was consulted to establish whether correlation exists/or not within this study's findings. A detailed description of the research design, the associated methodology, and data analysis have also been provided. To address the imperative of ethical research conduct, the study secured clearance from the PHEI Research Ethics Committee, adhering to its established ethics review and approval procedures (Ethics Reference: R.00084). The ethical considerations extended to participant confidentiality, anonymity, privacy and informed consent.

Findings

This section will provide insight into participants' perspectives on the ethical implications of using AI in TandL. Based on the data collected, the following section presents the emerging 5 themes: Ensuring academic integrity while maintaining agility; monitoring, responsible, ethical use and investments; protection of privacy; accessibility and equality and tools and systems for AI identification.

Theme 1: Ensuring academic integrity while maintaining agility

For the PHEI to remain relevant and compete with other leading higher education institutions locally and globally, it is important for it to remain agile enough to respond to AI changes whilst still ensuring a high degree of ethics and integrity of the qualifications. Participants felt that the PHEI must embrace change and adapt to these changes by working with AI and having all role players begin to engage in conversations on the way forward. This calls for a need to relook at and re imagine curricula and assessments in the age of AI. Evidence based decision making is key when changes are made to qualifications. However, the HE industry is governed by the policies and regulatory requirements of the Council of Higher Education which reduces the agility and adaptability of the HEIs. Participants also indicated that frequent, focused conversations resulting in tracked and monitored actions with stakeholders within and external to the PHEI are important. However, an official statement on the stance and parameters of the use of AI is required by the PHEI, and relevant training on the responsible, correct and ethical use of AI should be accompanied by it.

> "*HE institutions must have an open mind. AI is rapidly developing every day and HE institutions will have to adapt to the various changes and challenges that it presents. Most importantly, HE institutions need to find ways to work with it rather than against it because going digital and using AI in education is where the future is headed*." (Participant 28)

> "*Decision making concerning our qualifications must be evidence based on what is happening both globally and nationally*". (Participant 33)

> "*There needs to be a balance that is achieved somehow: academic integrity remains key for the qualifications. However, HEI needs to ensure that they are aware of and that they respond to the current AI trend to remain relevant and to adequately prepare students for the world of work*." (Participant 36)

Participant 12 noted that evolving and adapting to changes is vital; however, we must be mindful that "*It is quite difficult to keep up with high developments in any field of study,*" especially in technology and AI. Further to this, Participant 37 advised that it is not very easy for the institution to be agile and to adapt to the relevant changes as;

> "*We have political and education authority interference in the offering and the qualifications on offer thus making it a difficult task in a highly competitive educational market for the institution*."

However, Participant 33 alluded that:

> "*A single HEI with all its agility will not be sufficient to maintain a high degree of ethics and integrity of qualifications. It is time for all role players on a global level to engage in conversation*".

Further to this collaboration among global role players, Participant 39 advised to include local:

> *"Industry experts" and "colleagues from other institutions." (Participant 44).*
>
> *"Frequent, focused conversations that lead to action points being implemented are vital. We are not currently having enough focused institutional conversations. We should, for example, have held an institutional colloquium on AI at the start of the year. All relevant parties must be invited to contribute to the conversation. Release an AI position statement. Implement weekly/bi-weekly/monthly training sessions. Establish institutional research projects: monitor, track, learn and improve."* (Participant 44)

Participant 45 advised the HEI to not "*Overcomplicate what is simply the next stage in educational evolution*." While Participant 39 recommended: "*The institution should be flexible and quick to update curricula and to institute appropriate staff training*." Similar sentiments were noted by Participant 3:

> "*Assessments and qualifications need to be re imagined and restructured so that students are equipped for the changes in the world of work and business. In training lecturers, information specialists and students, there needs to be great emphasis on the ethical use of this technology and ways it can support students' intellectual and professional development*."

Participant 12 echoed the importance of the correct use of these tools in maintaining academic integrity: "*Using the Generative AI tools can help to accumulate higher and deeper learning as well as analyse the data accurately and precisely if used correctly*." Participant 28 sums up the participants' sentiments well:

> "*There are some risks now to the integrity of our qualifications and assessments because we do not know exactly what the capability of Generative AI tools are. The more we can learn about Generative AI tools now and in the future, the better it will be for us to maintain the integrity of our qualifications and assessments*." Thus "*We need digital leaders (and I speak not of tech guys) to monitor this space and keep abreast of what is happening with HEIs on a global level*. "(Participant 33)

Participant 20 asserts that the HEI can only achieve agility in the age of AI "*Through training and adaptability*."

> ***Theme 2: Monitoring, responsible, ethical use and investments***

The common sentiments echoed by participants were that "AI is the future of education" and "cannot be ignored or banned". Instead it can be embraced and integrated into teaching and learning thus postulating the education of students and lecturers on the responsible and ethical use of AI. Thus Generative AI will be a key tool in transforming education and it will remain with HE going forward and will have a significant impact on the way in which HEIs are managing their academic integrity and the quality of qualifications being awarded. Participant 1 advised that as AI continues to grow rapidly and infiltrates astronomically into different industry sectors, it is important for the HEI "*Not to ban the use of AI but implement AI into teaching and assessing of students*." Participant 2 advised promoting academic integrity by "*Including the students in the designing of assessments at initial stages*."

Participant 28 postulated further: "*to indicate in assessments and study material when and where Generative AI tools will help the student and to indicate for other areas of the work where Generative AI tools may not be used*."

To do this, Participant 12 advised the "*creation of a space on assessments for students to indicate which tool they have utilised so that the assessors can be aware of it. At the same time, create a rubric that spells out some form of guidance*."

Regarding transparency, Participant 2 advised: *"encourage them to be open enough if they have utilised ChatGPT-associated tools,"* and document their learning process using AI – their various prompts: "*We should ask our students for proof of how they did their process work."* (Participant 7) to "c*reate an awareness of how they can be damaging to the integrity of the institution and their qualification*" (Participant 11) due to lack of acknowledgement. Thus, Participant 48 advised the HEI to "d*raw up or reinforce a policy surrounding the use of these tools and introduce an AI-Turnitin*." However, it is essential to note that the current AI detection tools on the market have not proven to be very reliable. Thus, extra caution needs to be taken if such software/tools are implemented.

Policies and regulations are important to ensure academic integrity; however, Participant 59 recommended that the "*policies should not be prescriptive*. *One of the impediments to agility is having to work within a very restrictive policy space*." Rather than prescriptive policies that restrict agility and adaptability, Participant 59 recommends: "*We should be guided by a set of general principles that allow us to adjust and respond to ever changing space. We should also have dedicated teams to keep us abreast of new developments and how best we can respond to and take advantage of the present opportunities*." In addition to the dedicated teams and guidelines, Participant 31 recommends the HEI "*models ethical behaviour in the use of these tools. Take the mystery out of Generative AI tools, and then students will use them as they should*." Participant 33 made an interesting statement: "*nothing that is put forward anymore may be deemed as being original. Even this sentence that I just wrote has probably been written before. The question that I am asking myself right now is, should we re think this concept of academic integrity?"* Thus, the key question to ask is: What does academic integrity mean in the age of AI? How do we achieve it?

Investments, training and awareness

To ensure the academic integrity of the assessments and qualifications, participants advised the HEI to invest in securing licences for the various Generative AI tools and to invest in awareness campaigns and to train students and academics on the correct, responsible and ethical use of the various Generative AI tools. The investment in AI skilled and dedicated support teams for AI was also noted.

> "*Adequate investment of proper Generative AI tools in order to provide the proper and quality education while maintaining a higher level of ethics and integrity for all their qualifications*." (Participant 12). However, "*a systems upgrade*" will be required, as noted by Participant 16, which has a cost implication for the HEI.

Participant 16 recommends that the "*HEI should train or employ enough knowledgeable personnel to develop systems*." Further to the investment in Generative AI tools and systems upgrades, the investment in dedicated AI personnel to support the academics and students was noted by Participant 10: "*introducing people who will be responsible for AI*." In addition, investment in continuous awareness and training of academics and students is required, as advised by the participants.

> "*Through continuous training on what AI can do as well as its pitfalls, promote awareness campaigns so that all the stakeholders are informed and educated about the pros and cons of AI, especially in HE*." (Participant 4). Participant 38 argues that "*academics and students must be educated about the changes in technology as a whole and not only AI*".

Participant 22 advised it is important "t*o keep up to date and relevant. Sharing knowledge and experience and leveraging each other's strengths*." "*The institution will have to engage, communicate and train its staff members well while adjusting to the changes*" (Participant 6). "Regular training" (Participants 31, 50, 53, 54) is important to "e*nsure that students understand it's a tool that can be used and misused. It's a good starting point but not an ending point*" (Participant 38). "*With the ethos of AI tool as being a guide rather than produces a specific piece of work would need to be instilled in students and teachers to ensure the integrity and value driven applications of AI"* (Participant 39).

Theme 3: Detection tools

In terms of how participants will manage the use of the various Generative AI tools to ensure that academic integrity and values are maintained, most of the participants recommended that AI detection software and tools be introduced instead of banning the use of AI. However, the institution must be mindful and cautious of introducing an AI detection tool or recommending a tool to academics without proper testing and validation of its accuracy. Falsely accusing a student of using AI can raise many legal challenges for the institution as well as affect the students' experience from an academic, mental and emotional health perspective.

"*Implementing AI identification tools and teaching and assessing with Generative AI tools rather than banning them*." (Participant 1), with many participants advocating for the implementation of "*plagiarism software that can detect AI*." (Participants 3, 9,10, 17). However, Participant 16 advised to "*Test and validate the tools and increase transparency*." Over and above these detection tools, Participant 18 felt:

> "*Lecturers need to be vigilant when marking students' work to be able to pick up discrepancies in the written work*."

But to be vigilant, the "Lecturers need *to know the voice of their students in their work so they can detect work which is not original*." (Participant 20)

Theme 4: Protection of privacy

Regarding how the institution can protect student privacy and human rights while using Generative AI tools to improve learning outcomes, participants' responses centred around anonymisation, consent, encryption, policy regulations, information sharing and access.

Participant 2 advised "*Making use of the student numbers only without names*", while Participant 10 indicated the institution "*Should not load students' personal information onto the tool*". In conjunction with anonymisation, participants felt that obtaining student consent was vital, as Participants 1 and 15 noted:"*ensure we have student consent*" (Participant 1) and "*they need to sign indemnity forms*" (Participant 15). In addition, participants advise the application "*Of the POPIA Act* ."(Participant 7, 13) and that "*our policy on Intellectual Integrity should underwrite AI"* (Participant 8). Participant 18 advised "*students have the right to learn, but at the same time, The Intellectual Integrity Policy needs to supersede*. *Where there is a conflict, The Intellectual Integrity Policy needs to be revisited*." "*Strong privacy and fair data use policies need to be in place*" (Participant 44).

Participant 25 advises the HEI to *"consult a law firm specialising in personal information protection, technology law and privacy law, in general, to ensure that everything is done correctly from start to finish, without exception*." Participant 37 felt that "*we will need to have the necessary protections and policies in place, but beyond that, I doubt we can do much to avoid the risks that the world of AI presents to us all.*"

> "*AI is already embedded in everything we do. We cannot protect a student from AI more than the Popi Act already does. One can tell them about reading TandC and limited cookies, but unless they stay off social media and totally off grid - they will be part of AI algorithm*." (Participant 27)

Further on anonymisation, consent and POPIA, participants advised the institution to "Promote the use of secure platforms, encryption and firewalls in all our techno systems." (Participant 4), "*Upgrade infrastructure*" (Participant 9), "*Use cryptography*" (Participant 16) and "*Privacy settings and tools*" (Participant 36) to ensure that students are protected. Participants said users can be "*given access control*" (Participant 6). However, these must be with "*certain restrictions to be implemented, IT will play a part*" (Participant 11). This access must be "*an authorised access through the use of individual credentials when students use the* tools." (Participant 12) or "*Passwords / Codes*." (Participant 41)

To protect students' privacy and personal information, Participant 1 advised: "*not to share data of students that are not absolutely necessary."* However, Participant 12 emphasised, "*tools within the campus premises and those credentials should not be shared with anyone else besides the intended students*." Further to this, Participant 28 advised the HEI to "*tell students not to share any personal information with Generative AI tools unless it is when the students are registering to use them*." (Participant 28), with Participant 53 indicating that the HEI should

"*educate them about sharing of personal information*." Participant 53 advised further that the HEI should "*Ensure the Generative AI tools used are not third party tools*."

Theme 5: Accessibility and equality

Participants generally concluded that the accessibility to devices that facilitate AI use is widely available. However, not all students may have access to these devices, especially off campuses. They did note that disparities and inequalities will always exist and that the institution should try its best to limit these. Where applicable – to limit inequality by protecting against any covert teaching content that enshrines and purports inequality and to provide equitable, affordable access to these tools. Further, providing training and access in ways that create an equal playing ground for all students may prevent inequality.

> "*There will be no fairness in the use. Disparities and inequalities will always exist. We have not been able to address this on a global level concerning basic needs. The point here is that no HEI will be able to ensure this. Currently, we are unable to ensure that the use of basic technology is fair and unbiased. Even the results that students receive are not fair and unbiased. ChatGPT 4 was launched on March 13 and costs 20 dollars a month. Are we going to address this as an institution by ensuring that this AI tool is going to be made available to all students*?" (Participant 33)

"*Provide the required resources to students and include it as part of the course fees so that no one feels disadvantaged*" (Participant 35). However, this will place an additional financial burden on cash strapped students. It may not be ethical and in the best interest of the students. Thus, will the institution be prepared to absorb the cost of these various tools to ensure equity, equivalency and transformation? Participant 7 advised the HEI to "s*upport AI projects within the institution*" while ensuring "*the affordability of these tools to all*" (Participant 9). "*By providing access to them equally and by not allowing paid use of something where not everyone can afford same*" (Participant 22).

"*Access to the sites or applications should remain open and should not be blocked by the institutions*" (Participant 18) so students can access these sites using the institution's Wi-Fi. Participant 54 advised the HEI to "*Increase resources like WI-FI/data and computers to assist students that do not have devices*." Again, this has a cost implication to the institution. Participant 46 indicated,

> "*A dedicated course (using the institute's computers) would help to ensure that students from all backgrounds and circumstances will have access to and a grounding in the capabilities of AI. As it stands, students are required to have access to their own devices or are required to use the institute's computers. We already have to deal with inequality in terms of access to technology as most at home work requires access to technology anyway."*

Further to improving access and equity, Participant 15 recommends "*To use these tools as part of the assessment*." To help further mitigate inequality and access issues, participants noted that training on these tools is vital. "*If we are to incorporate these tools into the TandL space, it is important that we make provisions for access, not only in terms of making relevant resources available but also informing students how these tools can be used responsibly"* (Participant 59). Participant 38 also notes that:

> "*Teach the use of this tool during class. AI can be very helpful for students who have struggled with English or who have disabilities if they know how to use it ethically*."

Discussion of the Findings

Reflecting on the key themes that emerged from the study findings in addressing research question 1, it is imperative to maintain academic integrity while adapting to AI advancements, which have emerged as a central concern. Participants highlight the need for PHEIs to remain agile in response to AI changes while upholding the ethical standards and integrity of qualifications. This necessitates reevaluating curricula and testing the curricula to align with the demands of the AI era. This view is supported by Funda and Piderit (2024), who note that AI is revolutionising the educational environment through intelligent learning, active learning, shared resources and improved pedagogical systems. A study by Opesemowo and Adekomaya (2024) found that integrating AI

technology into education improves student outcomes, enhances collaborative learning and supports their learning journey.

However, the challenge lies in reconciling agility with existing regulatory frameworks, prompting calls for clear AI usage policies and comprehensive training to navigate the ethical complexities. Being knowledgeable of AI and swiftly integrating it into the organisational strategy and TandL framework will minimise institutional, reputational and academic integrity risks. Knowledge is key in the management of students and the use of AI. Thus, training and raising awareness of what AI involves, its uses, and how to put in place interventions to prevent its use and abuse in ways that undermine academic integrity, is required. Onyejegbu (2023) notes that it is important to address ethics in AI classes and to devote more than an introductory lesson to this concept and torather have entire semester based modules that address ethical issues in AI, ethical theories and frameworks that would enable students to think about ethical issues and apply their knowledge accordingly. Leveraging this knowledge, academics and HEIs need to manage this risk by reconceptualising the TandL space, and especially the reconceptualisation of assessments and criteria for competency testing. Slimi and Carballido (2023) also noted that when AI is considered for use in higher education, there must be a deliberate approach by all stakeholders to ensure that it is utilised in a responsible and fair manner such that risks are minimised and benefits are maximised.

Secondly, the responsible and ethical use of Generative AI tools within educational settings was emphasised. Participants advocate for transparency in AI integration, involving students in assessment design and implementing detection tools to ensure academic honesty. There also needs to be increased admission of the use of AI, thus making its use transparent (almost like a declaration). A study by Hofman (2023), which looked at student perspectives and preferences on transparency in automated grading tools, found that students require different types of information to support their learning journey, which can be used to develop transparent AI supported grading tools that are better aligned to meet the needs of students. Slimi and Carballido (2023) also stress the need for AI systems to be transparent and answerable to eliminate the adverse effects of displacement. In terms of privacy protection, participants stressed the importance of safeguarding student data and privacy rights in the context of AI implementation (research question 2). Strategies such as anonymisation, obtaining consent, and adherence to regulatory frameworks like POPIA are proposed to mitigate privacy risks. Additionally, measures such as access control, limited data sharing and awareness campaigns are recommended to address privacy concerns associated with AI applications. Rawat (2023) supports this, indicating that, to address the concerns of bias and privacy in higher education, HEIs must develop a guideline document of best practices addressing topics such as algorithm bias, student privacy and fairness. Taking this a step further are Gupta and Minz (2023), who indicate that AI must be correctly implemented and monitored to ensure that privacy is protected at all times. The authors go on to further explain that trust must be built so that students are willing and able to engage with AI without the possibility of negative consequences.

Lastly, in addressing research question 3, the study highlighted the challenge of promoting accessibility and equality in AI utilisation. Participants acknowledge existing disparities in access to Generative AI tools and advocate for measures to ensure equitable provision and integration. This includes supporting AI projects, increasing resources, providing dedicated courses and incorporating AI into assessments to enhance accessibility and mitigate inequality. Moreover, investments in AI infrastructure, dedicated support teams and ongoing training are deemed indispensable to fostering a culture of responsible AI use and maintaining academic integrity. A study conducted by Chan and Hu (2023) found that HEIs, stakeholders and policy makers must first understand the perceptions and challenges students face before developing Generative AI tools such that well formed guidelines can be created to create enhanced TandL experiences. Overall, the study findings underscore the complex interplay between technological innovation and educational integrity, highlighting the need for proactive measures to navigate the evolving landscape of AI in higher education. It calls for a concerted effort to balance technological advancements with ethical considerations, regulatory compliance and equitable access to ensure the responsible and effective integration of Generative AI tools into educational practices.

The study's findings carry several key implications for the HEI regarding the ethical use of Generative AI tools. Based on these implications, several recommendations can be proposed. PHEIs mat start by developing clear policies governing the use of Generative AI tools in education that outline ethical guidelines, responsibilities and consequences for misuse. Comprehensive training programs should be implemented for faculty, staff and students

to ensure that they understand the ethical implications of AI use and that they are equipped to use Generative AI tools responsibly. The PHEI should promote transparency in AI integration by clearly indicating when Generative AI tools are used in educational materials and assessments. The PHEI should establish mechanisms for accountability, such as tracking and monitoring AI usage, and ensure that decisions regarding AI implementation are evidence based and aligned with ethical principles. It is also recommended that the PHEI fosters regular and inclusive dialogue among stakeholders, including faculty, students, administrators and external experts, to collaboratively address ethical concerns and navigate challenges related to AI integration. The encouragement of active participation in the development of AI policies and guidelines to ensure diverse perspectives should be considered.

The implementation of robust data protection measures, including anonymisation, obtaining explicit consent and adherence to relevant privacy regulations such as POPIA, is recommended. Investment in secure infrastructure, encryption technologies and access controls to safeguard student data and privacy rights is required. This, however, has a cost implication for the PHEI. Further recommended is that the PHEI should strive to minimise disparities in access to Generative AI tools by providing equitable access to resources, training and support. It should explore innovative approaches, such as incorporating AI into assessments and providing dedicated courses, to enhance accessibility and mitigate inequality in AI utilisation. PHEIs should also establish mechanisms for ongoing evaluation and assessment of AI integration efforts to monitor ethical compliance, effectiveness and impact on academic integrity. The adaptation of policies and practices in response to emerging ethical challenges, technological developments and feedback from stakeholders should be in place. Also, PHEIs need to encourage collaboration with industry partners, regulatory bodies and peer institutions to share best practices, resources and insights on the ethical use of Generative AI tools in higher education. The PHEI should also encourage the engagement of interdisciplinary research and knowledge exchange to deepen understanding of ethical considerations and informed evidence based decision making.

Conclusion

In summary, the HEI must proactively address ethical considerations in the integration of AI into educational practices to ensure academic integrity, protect student privacy and promote accessibility and equity. By developing clear policies, fostering stakeholder engagement and prioritising transparency and accountability, institutions can navigate the ethical complexities of Generative AI implementation and harness its potential to enhance teaching, learning and research while upholding core values of education. This study was limited to a single PHEI in South Africa prior to the PHEI taking a formal position on the use of Generative AI tools in the institution. Therefore, it is recommended that a similar study be conducted among other private and public HEIs nationally and abroad to establish if similar perceptions prevail there. A post study should also be conducted when institutions have a formal position on the use of Generative AI to establish if perceptions have changed.

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