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Leveraging Generative Artificial Intelligence (AI) to strengthen academic integrity in higher education

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Abstract

The rapid integration of Generative Artificial Intelligence (AI) tools such as ChatGPT, Gemini, and Microsoft Copilot into higher education has prompted a growing need for ethical frameworks that uphold academic integrity. Plagiarism, contract cheating, and over-reliance on AI-generated content threaten the value of education and the credibility of higher education institutions. The ability of Generative AI tools to create coherent content with minimal human input makes it easier for students to bypass critical learning processes and standard academic practices. Higher education institutions are now faced with challenges of developing policies and practices that ensure the correct usage of Generative AI tools. This study investigates how Generative AI tools can be used responsibly to enhance learning without compromising academic integrity. The study follows a theoretical approach and a case study to develop a conceptual framework that seeks to maintain academic integrity. Each Generative AI tool was tasked with the same academic task of drafting an essay to evaluate its performance in generating content while maintaining ethical standards. The assessment criteria looked at content quality, originality, usability, and ethical issues. An ethics framework for academic integrity was developed by synthesizing insights from literature, industry reports, and the case studies, focusing on educational integrity. The findings generated preliminary perspectives that can inform future research and were validated through structured interviews with five (5) academics at a private higher education institution in South Africa. By providing clear guidelines and best practices for ethical Generative AI use, the framework addresses pressing concerns about academic integrity and ensures that educational standards are upheld in an era where AI technologies are becoming increasingly influential. The ethics framework for academic integrity promotes a culture of honesty and responsibility thereby, helping students and educators to navigate the complexities of using Generative AI tools in academia.

Keywords: *Artificial Intelligence; academic integrity; higher education; ethics; plagiarism; Technological Acceptance Model.*

Introduction

In the higher education domain, Artificial Intelligence (AI) technologies provide innovative solutions for detecting and preventing misconduct, including plagiarism, exam cheating, and contract cheating. The integration of Machine Learning (ML) into higher education offers transformative potential, particularly in tackling academic integrity challenges. With the ability to analyse large datasets and identify patterns, ML algorithms help maintain academic standards by tracking trends in student writing, examination behaviour, and real-time assessments (Chinta & Wang, 2024). At the forefront of these developments are Generative Artificial Intelligence (AI) tools like ChatGPT, Microsoft Copilot and Gemini, among others. These Generative AI systems generate human-like responses by using advanced deep learning models, though their outputs reflect learned patterns rather than true understanding (Palle & Kathala, 2024). While these Generative AI tools enhance education, they also raise concerns about students bypassing essential learning processes and standard ethical practices in education (Palle & Kathala, 2024).

The continuous rise in online education has further increased opportunities for dishonesty, thereby necessitating AI-driven solutions. Modern plagiarism detection systems use ML and Natural Language Processing (NLP) to detect both direct copying and complex paraphrasing (Chinta & Wang, 2024). In addition, AI-powered proctoring systems monitor student behaviour during online examinations by identifying irregularities that may indicate cheating (Lee & Fanguy, 2022). These important advancements highlight the critical role of ML in promoting fairness and maintaining academic integrity. However, the growing reliance on AI technologies introduces ethical concerns including privacy, honesty, fairness, and potential bias in the AI models. Addressing these concerns requires responsible policies to ensure that AI enhances educational outcomes without infringing on the students' rights (Floridi et al., 2018).

The integration of AI and ML into education has rapidly transformed the higher education landscape hence, bringing both opportunities and challenges. Generative AI tools, such as ChatGPT, Microsoft Copilot, and Gemini, have become increasingly popular for assisting students with academic tasks, from content generation to personalised learning support. These technologies harness the power of large language models and deep learning architectures to produce human-like text and solve complex problems efficiently (Palle & Kathala, 2024). However, the widespread adoption of Generative AI tools has raised significant concerns about academic integrity. Critical issues such as plagiarism, contract cheating, and over-reliance on AI-generated content threaten the value of education and the credibility of higher education institutions (Macfarlane, et al., 2014). The ability of Generative AI tools to create coherent and sophisticated content with minimal human input makes it easier for students to bypass critical learning processes and standard academic practices (Chinta & Wang, 2024).

Higher education institutions are now faced with the challenge of developing policies and practices that ensure that Generative AI tools are used responsibly. Compliance with privacy regulations such as the General Data Protection Regulation (GDPR) and the Protection of Personal Information Act (POPIA) is important as AI tools often collect and process user data without their consent (Floridi et al., 2018). To meet some of these challenges, this study proposes a framework for academic integrity, which is a conceptual model that provides practical and sustainable guidance for integrating Generative AI tools into higher education. The proposed framework emphasizes the ethical integration of Generative AI tools into higher education which could help these institutions to effectively leverage the potential of Generative AI while safeguarding academic integrity. By

balancing technology with ethical values, the framework offers a path towards a responsible and thriving future for AI-driven education.

The study answers the following research questions:

- To what extent can Generative AI uphold academic integrity in higher education?
- How do various Generative AI tools differ in their capabilities and usability when assisting with academic tasks while maintaining integrity?
- What policies and best practices could be adopted by higher education institutions to guide the ethical use of Generative AI tools?

The questions defined above were guided by the following objectives which sought to:

- Assess the extent to which Generative AI can uphold academic integrity in higher education.
- Evaluate the capabilities and usability of Generative AI tools in higher education.
- Suggest some best practices which could be adopted by higher education institutions when implementing Generative AI.
- Develop a framework that promotes academic integrity in higher education.
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This study offers an examination of Generative AI's role in higher education, with a particular focus on maintaining academic integrity. The proposed framework serves as a strategic guide for higher education institutions to integrate AI ethically and responsibly while preserving academic integrity. A review of related works is presented next.

Related works

Generative Artificial Intelligence refers to AI systems that can create new text, images, audio, and other types of data (Brown et al., 2020; Matsiola et al., 2024). These models do not just replicate existing data but generate novel content based on the patterns they have learnt during training. OpenAI's GPT can produce coherent and contextually relevant text based on input prompts (Brown, et al., 2020). While Generative AI has transformative potential, particularly in creative industries and education, its usage has raised ethical questions about authorship, intellectual property, and the possibility of producing misleading and/or biased content. The term academic integrity refers to the moral and ethical principles that govern behaviour in educational contexts, particularly in learning, teaching, and research (Macfarlane et al., 2014). These principles include accountability, trust, respect, fairness, honesty, and responsibility. Upholding academic integrity ensures the legitimacy of educational institutions, the validity of student assessments, and the credibility and portability of academic qualifications that are offered by the higher education institutions upon completion of a specific course. Maintaining academic integrity promotes a fair learning environment where student achievements reflect their true abilities and knowledge.

Currently, academic integrity faces significant challenges in modern education due to various forms of dishonest behaviour. Some of the most prevalent forms include plagiarism, cheating and contract cheating (Sutherland-Smith, 2008). Plagiarism occurs when students present someone else’s work, ideas, or research as their own without proper acknowledgement (Sutherland-Smith, 2008) and this can take diverse forms, including copying assignments and paraphrasing ideas without proper citations. Cheating involves the use of unauthorised materials, devices, or collaboration during examinations or assignments (McCabe, et al., 2012). Students may use hidden notes, share answers

with peers, or access prohibited online resources during assessments thus, undermining the fairness of evaluations. Contract cheating is a form of academic dishonesty where students outsource their assignments to third parties, such as essay-writing services, or hire individuals to take exams on their behalf (Boehm, et al., 2009). Such behaviour raises serious ethical and integrity concerns, as it entirely disconnects students from the learning process.

These dishonest practices threaten the integrity of education and devalue academic credentials thereby, eroding trust in qualifications that are presented to employers and the higher education institutions (Gallant, 2008). Furthermore, such practices create unfair advantages for those who cheat while, disadvantaging honest students. Institutional reputation suffers when academic misconduct is not properly addressed, risking public trust, reduced enrolment, accreditation challenges, and funding losses (Macfarlane, et al., 2014). The continuous rise in online education has further amplified these challenges, making plagiarism and contract cheating readily accessible. This rise highlights the need for strong integrity policies, plagiarism detection tools and AI-enhanced proctoring systems (Boehm, et al., 2009). In the higher education sector, a comprehensive approach is needed that combines prevention, awareness, and strict policy enforcement. Higher education institutions must foster a culture of integrity which encourages students to produce original work and value ethical conduct in both academic research and professional contexts.
The emergence of Generative AI tools such as ChatGPT have raised new ethical concerns regarding academic and research integrity. While these AI tools offer significant educational benefits, such as personalised learning and enhanced access to complex topics, they also create new avenues for academic dishonesty (Gamage, et al, 2023). Students utilise Generative AI to generate essays, assignments, or projects that appear original with minimal effort thus, undermining the credibility of academic assessments. Another concern is the production of false references or inaccurate information by these tools therefore, compromising the reliability of student work (Balta, 2023). These risks highlight the urgency of developing strategies that ensure that AI-generated content is used ethically in higher education and does not compromise academic and research standards. Some effective solutions may include transparent AI usage policies, better detection tools, and integrating human insight into assessments in order to preserve academic integrity (Boehm, et al., 2009).

Generative AI tools allow students to create content that appears original but lacks authentic human effort therefore, undermining the credibility of academic assessments (Floridi, et al., 2018). The increasing accessibility of these tools amplifies the potential for misuse and this requires educators to rethink the traditional evaluation methods (Chiang, et al., 2022). A growing concern related to Generative AI is the generation of false references in academic work. Generative AI systems are prone to producing fictitious citations that mimic the structure of legitimate sources but refer to non-existent publications or data (Chinta & Wang, 2024). This phenomenon, often termed "hallucination" in AI research, compromises the credibility of student assignments by introducing inaccuracies. Additionally, such practices make it difficult for educators to verify sources hence, further weakening academic standards and trust in assessments (Nigam, et al., 2021).

The use of AI-generated content not only threatens academic integrity but also devalues educational credentials, as students may receive grades and qualifications without investing in and demonstrating their true knowledge or abilities. Higher education institutions are therefore under pressure to develop innovative strategies that prevent the misuse of Generative AI in assessments. This includes integrating AI-detection tools and combining traditional human evaluations with AI-based approaches to ensure that student achievements genuinely reflect their learning (Chiang, et al., 2022).

Su & Yang (2023) introduced the "IDEE" framework to guide the integration of Generative AI tools in educational environments. The framework offers a phased approach to assist educators and higher education institutions in effectively adopting AI technologies while addressing challenges that arise from their use. The IDEE framework emphasizes aligning AI applications with educational goals, balancing automation with human intervention, ensuring ethical use, and evaluating outcomes to enhance learning (Su & Yang, 2023). The IDEE framework for AI implementation is described in Table 1.

Table 1: Phases of the IDEE Framework for AI Implementation

Phase 1	Defining Educational Goals for AI **Integration** This phase involves identifying the specific objectives that AI will support, such as enhancing student engagement and or automating tasks. Clear goals ensure AI tools align with institutional priorities (Su & Yang, 2023).
Phase 2	Determining the **Degree** of Automation Educators must decide which processes to automate so as to balance efficiency with human involvement. Simple tasks like grading can be automated, while complex teaching elements should retain human interaction to maintain quality (Luckin & Holmes, 2016).
Phase 3	Addressing **Ethical** Considerations and Bias This phase focuses on mitigating bias and ensuring fairness, as AI can reflect biases in the training data. Higher education institutions must address privacy concerns, enforce transparency, and implement effective policies for responsible AI usage (Floridi, et al., 2018).
Phase 4	Assessing the **Efficacy** of Educational AI Continuous evaluation ensures that AI tools meet their intended goals and positively impact learning. Feedback from users helps institutions to properly monitor performance and adjust AI usage for improved learning outcomes (Lanier, 2006).

While the IDEE framework offers a structured approach to integrating AI in education, it lacks robust precautions against the misuse of Generative AI tools, especially in higher education. Without proper oversight, students may exploit Generative AI to produce plagiarised work, bypass assessments, or even generate false references (Chinta & Wang, 2024). This gap leaves institutions vulnerable to new forms of academic misconduct that are facilitated by AI technologies (Floridi, et al., 2018). In addition, the IDEE framework lacks focus on academic integrity as it emphasizes automation, personalization, and efficiency. Without mechanisms to detect AI-generated content or prevent unethical practices, the framework risks undermining the credibility of student achievements and assessments (Macfarlane, et al., 2014). Addressing academic integrity is essential to ensure that learning outcomes accurately reflect students' understanding and effort.

To ensure academic integrity, there is an urgent need for practical measures that prevent the misuse of Generative AI in higher education. This process begins by identifying the risks associated with Generative AI as they jeopardise both academic integrity and the fairness of assessments (Chiang, et al., 2022). Higher education institutions need to anticipate these risks and develop comprehensive

strategies to mitigate them effectively (Floridi, et al., 2018). Establishing clear policies and guidelines is crucial to prevent Generative AI misuse. This includes integrating AI-detection tools to identify unauthorised content and ensuring that students understand the ethical implications of AI-generated work. Institutions must promote transparency by labelling AI-generated content and incorporating hybrid assessment methods that combine human judgment with AI tools to maintain academic rigour (Luckin & Holmes, 2016; Nigam, et al., 2021).

While AI tools offer efficiency and objectivity, human insight remains essential for evaluating student learning. AI systems may lack the ability to assess creativity, critical thinking, or contextual understanding, which are vital aspects of higher education (Luckin & Holmes, 2016). Educators can identify nuances in student work, provide meaningful feedback, and consider individual circumstances that AI tools might overlook. A human-centred approach ensures that assessments reflect genuine learning outcomes and foster student growth (Lanier, 2006). To maintain academic integrity and ensure well-rounded evaluations, hybrid assessment methods that combine AI tools with human involvement are gaining traction. For example, automated grading tools can handle objective assessments, while educators focus on subjective tasks, such as evaluating essays and presentations (Ramesh & Sanampudi, 2022). These approaches leverage AI for efficiency while preserving the value of human expertise hence, ensuring that assessments remain fair, comprehensive, and meaningful (Chiang, et al., 2022).

Leveraging Generative Artificial Intelligence (AI) to strengthen academic integrity in higher education requires not only the deployment of advanced technological tools but also an understanding of how users engage with these innovations. The Technological Acceptance Model (TAM) by Davis (1987) provides a valuable theoretical lens for this purpose, as it explains how individuals come to accept and use technology based on its perceived usefulness and its perceived ease of use. Applying TAM allows researchers to examine the factors that influence both educators' and students' adoption of Generative AI tools that are designed to support academic integrity, such as plagiarism detection and ethics-guided writing assistants (Ghimire and Edwards, 2024). By identifying barriers and facilitators to acceptance, TAM enables a structured understanding of how these tools can be effectively integrated into teaching and learning environments. This theoretical grounding informs the study's methodological approach, ensuring that the research rigorously links technology acceptance to ethical practice.

Methodology

The study follows a mixed-methods approach, recommended by pragmatists (Flowers, 2023; Wang, et al, 2024), that incorporates a theoretical understanding, case studies and structured interviews to develop a conceptual framework that integrates Generative AI to maintain academic integrity in higher education. The study draws literature from academic databases like Science Direct, Elsevier, IEEE and Google Scholar over the last decade (2015–2025). The inclusion of the academic databases listed ensures that the framework incorporates the latest advancements in Generative AI and higher education. However, peer-reviewed foundational studies were also included to provide the necessary context and historical background on Generative AI applications. This ensures a balance between contemporary insights and well-established theories in the higher education sector. To complement this theoretical knowledge, industry reports and non-academic sources were also selected to capture practical, real-world insights within the education domain, a point emphasised by Marabelli and Vaast

(2020). These sources were essential for ensuring that the conceptual framework reflects not only theoretical perspectives but also practical applications.

The literature and industry reports were filtered based on their focus on academic integrity and Generative AI integration in higher education. Studies addressing AI-driven assessments (Gamage, et al, 2023), plagiarism detection (Ouyang, Zheng & Jiao, 2022), hybrid learning models (Mehta, et al., 2024), and ethical concerns (Matsiola, et al., 2024) offer a solid foundation for the formulation of Generative AI policies. Reports from non-academic sources such as Microsoft, offer practical insights into AI policies, frameworks, and the evolving role of Generative AI in learning and teaching. This study follows a step-by-step methodology to develop a conceptual framework that balances Generative AI integration with academic integrity. After receiving an ethical clearance from the institution, a total of five (5) structured interviews with academics at a private higher education institution in South Africa were conducted. Following Schultze and Avital (2011)'s guidelines, a sample of five (5) interviewees is adequate to generate rich data for information systems research. Structured interviews played a crucial role in validating case study findings on the use of Generative AI in higher education by providing first-hand insights from the academics. The interviewees signed consent forms before taking part in the study. Through semi-structured interviews, the researcher was able to explore the personal experiences, perceptions, and practical challenges that are associated with Generative AI in higher education. These narratives confirmed the patterns identified in the case study data thereby, adding depth and credibility to the findings. By comparing interview responses with case study observations, the researcher refined the conclusions and ensured that the proposed framework is grounded in actual experiences. This process, not only validated the findings but also, helped to capture the nuanced implications of Generative AI integration in higher education thus, offering a holistic view of its benefits and certain limitations. Table 2 shows the data sources and research strategies that informed the study.

Table 2: Data sources and strategies that inform the study

Data source / strategy	**Relevance**
Literature review	The review describes what is known in the Generative AI domain and identifies knowledge gaps and emerging trends.
Industry reports	Reports by Microsoft Learn provide insights into how educators use AI tools and the challenges they face to balance AI adoption with academic standards.
Case studies	Case studies focus on evaluating the use of Generative AI tools for completing academic tasks in higher education, specifically assessing ChatGPT, Gemini, Claude AI, Google Notebook, Deep seek and Microsoft Copilot. The goal here is to explore how these tools can be integrated to support learning while addressing challenges such as plagiarism and maintaining academic integrity.
Structured interviews	The structured interviews validate the case study findings on the use of Generative AI (GAI) in higher education by providing first-hand insights from the academics. The narratives from the structured interviews confirm the patterns that were identified in the case studies and added depth and credibility to the overall findings.

Each Generative AI tool was tasked with the same academic task of drafting an essay to evaluate its performance in generating content, maintaining ethical standards, and supporting student learning. Specific prompts were formulated to guide the use of ChatGPT, Gemini, Claude AI, Google Notebook, Deep seek and Microsoft Copilot. The responses from the Generative AI tools were analysed based on the criteria emphasised by Rasul, et al (2024), such as content quality, originality, usability, and ethical considerations. By incorporating a variety of AI tools from multiple developers and application contexts, the study achieved a comprehensive assessment of how Generative AI influences academic integrity. This comparative strategy enabled the recognition of each platform's advantages, limitations, and ethical implications, which in turn informed the creation of a solid framework for guiding the responsible use of AI in higher education. These findings from the case studies were cross-referenced with existing literature to determine how well these tools align with practical educational implementations and established best practices. The insights gained informed the development of guidelines for using Generative AI tools in a way that supports academic integrity, a critical point which this study sought to bridge.

All the tools were tasked with drafting an essay on how AI could improve decision making in organisations. The following prompt was used for ChatGPT, *"Generate a 500-word essay on How AI can be used to improve organisational decision-making?".* Similar prompts were used for the other Generative AI tools such as Gemini, Claude AI, Google Notebook, Deep seek and Microsoft Copilot. The limitation to 500 words was because the author used an open-source plagiarism checker accessible from: (https://plagiarismdetector.net/) with a limitation in terms of the number of words per submission at that time. The submission of full-length document without limitations required a fully licenced version of plagiarism detectors like Turnitin which was not available at that point in time. The use of a free plagiarism checker in this research is justified based on accessibility, cost-effectiveness, and sufficiency for the study's objectives. While licensed plagiarism detection tools offer advanced features, the free versions provide adequate functionality to screen and identify instances of similarity in academic writing. Given that the purpose of this research was not to conduct an exhaustive forensic plagiarism analysis but rather to ensure originality and uphold ethical standards in generated content, a free plagiarism checker provided a practical and reliable solution. The content generated was then assessed using the content quality, originality, usability, and ethical considerations as shown in Table 3.

Table 3: Assessment criteria for Generative AI tools used in higher education

Assessment criteria	Description
Originality	Check for plagiarism or AI-generated content similarities across tools using plagiarism detection software.
Content quality	Evaluate the accuracy, relevance, and coherence of the essay generated by each Generative AI tool.
Usability	Assess the ease of use, responsiveness, and user experience of each Generative AI tool.
Ethical considerations	Reflect on whether the use of each Generative AI tool promotes ethical academic practices including citations and transparency.

Reflecting on the ethical implications of using Generative AI tools for academic tasks raises important questions about transparency, accuracy, and dependence (Al-Zahrani, 2024). On the transparency

facet, should students disclose when they use Generative AI tools? If they do, how should they do so? On accuracy and verification, how dependable is the information generated by these Generative AI tools from an academic point of view? Lastly, do these Generative AI tools affect a student's ability to think critically?

Ethical considerations

The study obtained full ethical clearance from the Committee of a private higher education institution in South Africa, where this study was conducted. The ethical clearance process ensured that the research design, methodology, and data collection procedures adhered to established ethical standards for research involving human participants. The ethical clearance certificate, which authorizes the conduct of the study, is valid for a period of exactly three (3) years effective 15 March 2025. All interviewees were provided with clear and comprehensive information regarding the purpose, objectives, and procedures of the study. Written informed consent was obtained prior to participation, with each interviewee signing a consent form that confirmed their voluntary involvement. Participation was entirely voluntary, and no form of coercion, undue influence, or financial inducement was applied. Interviewees were also informed of their right to withdraw from the study at any stage without any negative consequences.

Findings and discussion

As the use of AI-driven technologies in education continues to expand, there are growing concerns about how these tools impact ethical standards, including issues related to plagiarism, fairness, and responsible usage (Dawson, 2020). This study proposes the ethics framework for academic integrity which provides a structured approach to implementing Generative AI tools in a way that promotes educational integrity, ethical practices, and fair assessment for students. The framework interconnects the following components: educational integrity, technological integration, holistic learning, collaborative detection, and sustainable policies. The ethics framework also evaluates the application of popular Generative AI tools for completing academic tasks as well as assessing their potential to support learning while upholding academic standards. The insights gained from this evaluation contributes to the development of best practices for the responsible use of Generative AI in education, ensuring that these technologies enhance the learning experience without compromising academic values.

The case study was designed to evaluate and integrate the Generative AI tools in higher education, with a keen focus on maintaining academic integrity and enhancing learning outcomes. The study investigated the use of six (6) popular Generative AI tools (ChatGPT, Microsoft Copilot, Claude AI, Google Notebook, Gemini and Deep seek) to perform a standardized academic task. The aim was to assess these tools' capabilities in supporting academic tasks while adhering to the principles of educational integrity, technological integration, holistic learning, collaborative detection, and sustainable policies. The chosen task for the case study was drafting a 500-word essay on how AI can improve organisational decision-making. This task allowed for a direct comparison of each Generative AI tool's ability to generate content that is both relevant and ethically sound.

These Generative AI tools were tasked with generating content based on the same prompts to ensure consistency in the evaluation process. The results were then assessed based on content quality, originality, usability, and ethical considerations. Content quality evaluated the accuracy, relevance, and coherence of the essay generated by each Generative AI tool. Originality checked for plagiarism

or AI-generated content similarities across tools using plagiarism detection software. Usability assessed the ease of use as highlighted by Davis (1987) in the TAM as well as responsiveness and user experience of each Generative AI tool. Lastly, the ethical considerations reflected on whether the use of each Generative AI tool promotes ethical academic practices such as proper citations of AI-generated content and transparency.

ChatGPT

Figure 1 presents a screenshot of the report generated by ChatGPT and the similarity score.

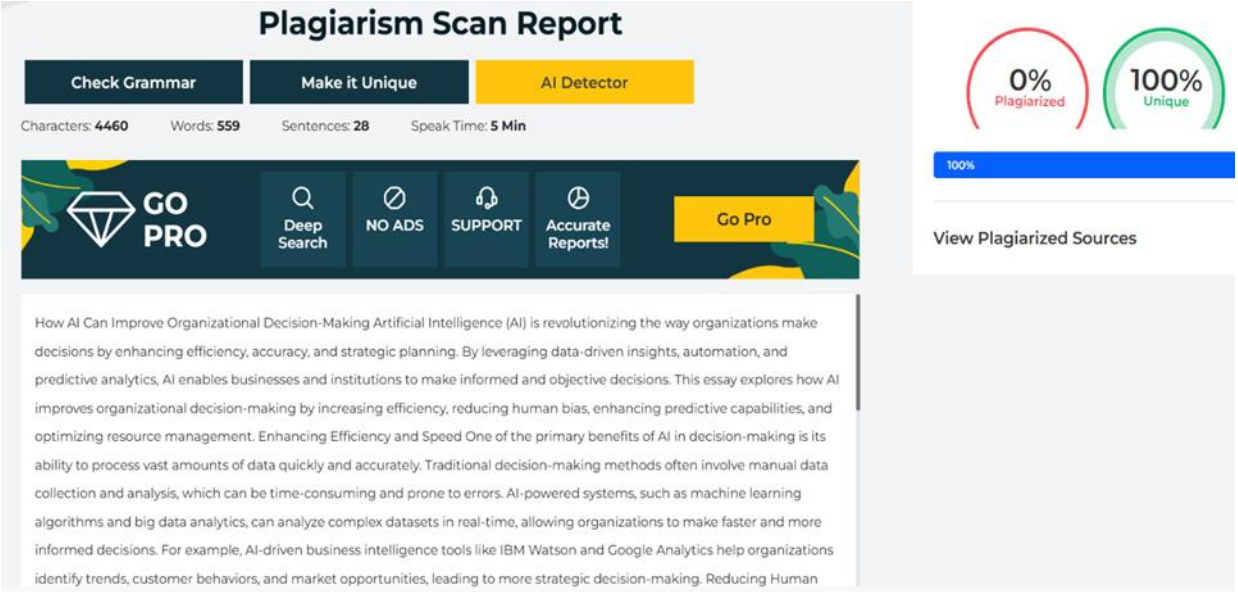


Figure 1: ChatGPT plagiarism report

ChatGPT is an advanced language model, developed by OpenAI, that is designed to generate human-like text based on prompts. ChatGPT uses a large dataset to understand language patterns and provide relevant responses. In terms of content quality, the essay produced by ChatGPT had a logical flow, well-structured paragraphs, and was both relevant and comprehensible. Although it occasionally used generalisations rather than more concrete instances, the text showed a solid grasp of the topic in question. The plagiarism detection software accessible from: (https://plagiarismdetector.net/) was used to check for originality and the generated content confirmed no indications of plagiarism (Figure 1). The essay's original language suggests that the model created the content without plagiarising pre-existing text. ChatGPT's straightforward interface made it simple to use and enabled rapid input and answer production. ChatGPT does not automatically promote citation or transparency on the use of AI-generated content, despite its efficient content production. Users need to be aware of the ethical practices, such as disclosing the use of AI tools and providing proper citations for ideas derived from the tool.

Microsoft Copilot

Figure 2 presents a screenshot of the report generated by Microsoft Copilot and the similarity score.

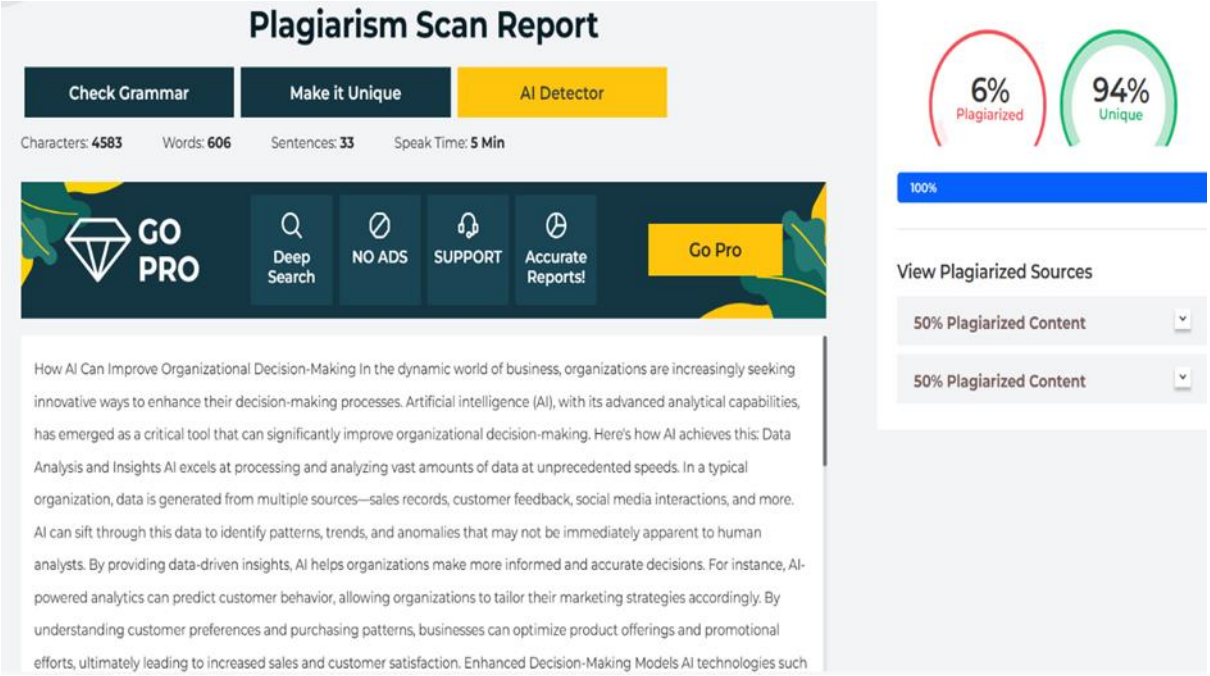


Figure 2: Microsoft Copilot plagiarism report

Microsoft Copilot integrates AI capabilities within the Microsoft Office suite, assisting with tasks such as writing, editing, and formatting documents (Microsoft, 2025). This capability leverages AI to provide content suggestions directly in applications like Microsoft Office Word. In comparison to the other AI tools, the essay generated by Microsoft Copilot was adequate but tended to be more formal and template-driven, with less natural flow. Copilot excelled in grammar and structure, but the content was too generic and broad. In terms of originality, the content passed plagiarism checks, but some plagiarism was detected, showing that it copied from pre-existing sources (Figure 2). Copilot's integration within the Microsoft ecosystem made it convenient to use. It was intuitive and responsive, with features that assisted in editing and refining the content directly in the document. In terms of ethical considerations, Copilot inherently encourages users to format references and cite sources because it is integrated into Microsoft Office products. However, the tool does not automatically flag AI-generated content, leaving it up to the user to disclose the use of the tool or not.

Claude AI

Claude AI, developed by Anthropic, focuses on the provision of safe and responsible AI outputs (Dhruv et al, 2024). This important Generative AI tool is specifically designed to be more cautious with potentially harmful or unethical responses, and this closely aligns to academic integrity in higher education, a point which Pellerin and Ogandaga (2021) emphasize. In terms of content quality, Claude AI was highly coherent and insightful, with a strong focus on all ethical aspects of Generative AI in higher education. The tool provides a balanced view, including both the benefits and potential risks of using Generative AI tools in academic settings. For this specific study, the content generated provided some indications of plagiarism. However, Claude AI demonstrated a sophisticated grasp of

the topic, producing content that was distinct from the other Generative AI tools that were tasked with the same activity. Figure 3 presents a screenshot of the report generated by Claude AI and the similarity score.

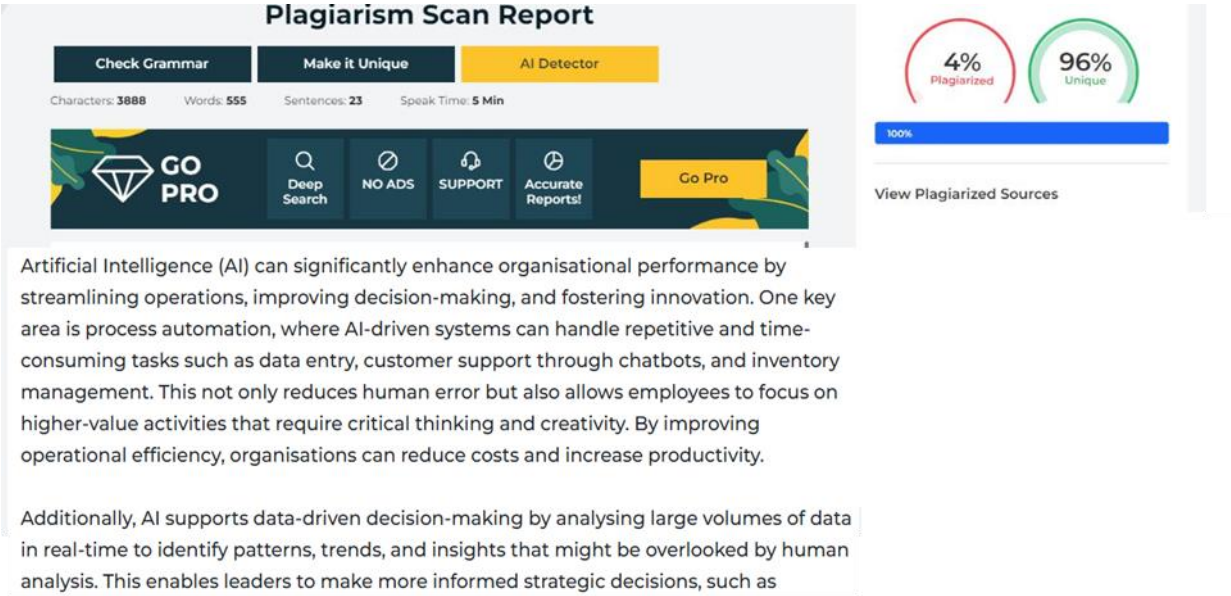


Figure 3: Claude AI plagiarism report

In terms of usability, Claude AI generated high-quality content and the user- interface was less user-friendly compared to the other Generative AI tools. Ethical considerations are of vital importance in maintaining academic integrity (Nagpal, 2024). Claude AI is designed to encourage ethical practices, often including disclaimers about the limitations of AI-generated content. However, different users of this Generative AI tool still need to manually add citations and disclose the use of AI tools.

Notebook LM

Notebook LM is an AI-powered notetaking tool developed by Google, designed to help users organize and synthesize information from various sources (Solanki and Khublani, 2024). Google Notebook offers complete summarization and content structuring capabilities which are important for scholars at higher education institutions. In terms of content quality, the information generated by Notebook LM was well-organised, with clear summaries in a consistent and clear logical structure. However, the content was more suited for outlining and synthesizing information rather than generating fully polished essays that speak to the question posed. The generated summaries were not completely unique, showing some evidence of copying existing content from other sources. This makes sense as it synthesised its notes from Generative AI content that was possibly flagged before for some kind of plagiarism. Figure 4 shows the similarity report for Google's Notebook LM.

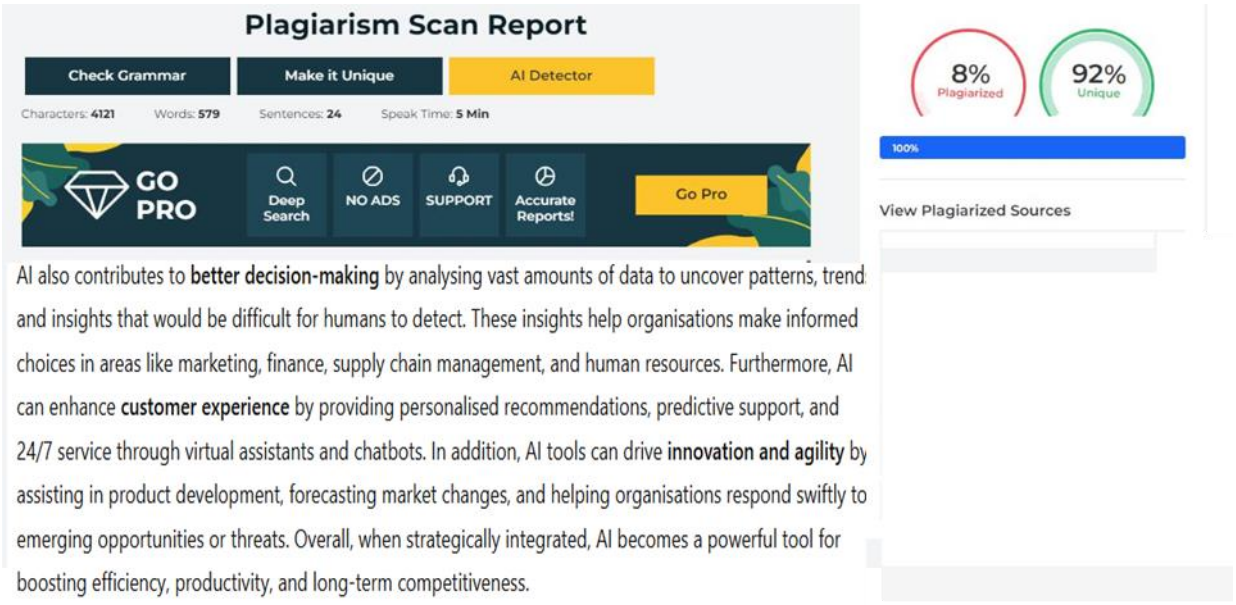


Figure 4: Google Notebook LM Plagiarism Report

Google Notebook LM's usability feature can integrate notetaking with content generation, and this makes it versatile for most higher education activities. However, the tool requires a more hands-on approach to develop a complete essay suited for better organising ideas than writing detailed content. Google Notebook's LM encourages the transparent use of Generative AI by allowing users to cite sources and label AI-generated summaries (Mehta, et al, 2024). The process provided clear indications of where AI assistance was used therefore, promoting ethical academic practices. However, it is crucial to understand that the calibre of the notes provided immediately correlate with the quality of the finished product.

Gemini

Gemini is an advanced Generative AI model created by Google DeepMind (Pudasaini, et al, 2024). This Generative AI tool is capable of processing and generating text, code, and images, just like other AI tools. Important features of Gemini encompass its capabilities to integrate deep learning techniques to understand complex queries and provide insightful responses that improve decision-making. Gemini is used across multiple domains, including higher education, where it contributes to academic research and the much-needed personalized learning. Rasul et al (2024) advocate for responsible Generative AI usage to maintain academic integrity. The authors argue that higher education institutions must develop clear guidelines to ensure responsible AI use so as to prevent over-reliance and maintain the authenticity of student work. Higher education institutions can therefore enhance educational experiences, improve efficiency, and foster innovation in academic settings, only if they leverage Generative AI capabilities. Figure 5 below shows the similarity report for Gemini.



Figure 5: Gemini AI plagiarism report

Gemini generated usable and high-quality content in comparison to other Generative AI tools. Moreover, the content generated was 100% unique. However, Gemini did not acknowledge the information sources which were used to generate this information.

Deep seek

Deep seek is an advanced Artificial Intelligence (AI) tool that is designed to assist users in retrieving and analysing information across various domains and higher education institutions are not an exception (Kuleto, et al., 2024). The capabilities of Deep seek include natural language processing, data mining, and content generation, making it a versatile asset specifically in higher education settings. The integration of Deep seek into higher education has sparked an endless debate around academic integrity (Rasul, et al., 2024). There is no doubt that the ease of generating and accessing information may lead to misuse such as plagiarism and over-reliance on AI-generated content. Higher education institutions are struggling with these challenges, seeking to balance the benefits of Generative AI with the preservation of internationally accepted academic standards. Multiple studies (Rasul, et al., 2024; Pellerin & Ogandaga, 2021) highlight the urgent need for clear guidelines to govern the ethical use of Generative AI in higher education. Thus, the integration of Deep seek into higher education must be managed carefully so as to uphold academic integrity. Figure 6 shows the similarity report for Deep seek.

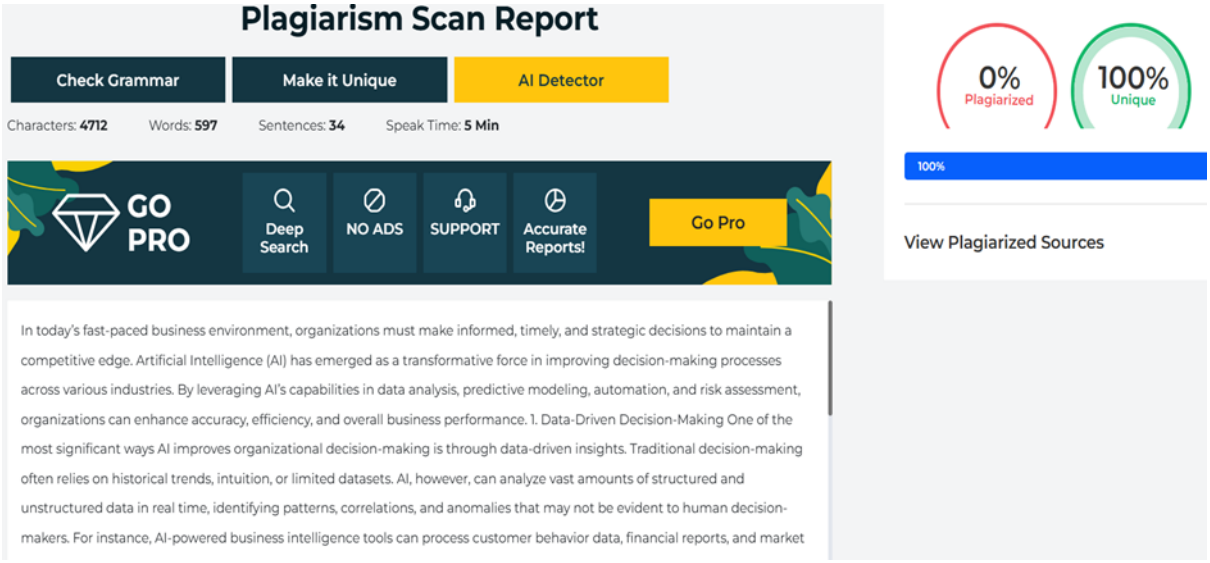


Figure 6: Deep seek AI plagiarism report

Deep seek generated content which was quite relevant to the task given using appropriate prompts. However, the content generated was too generic from an academic point of view. Interestingly, the content generated did not indicate any traces of plagiarism as shown in the report above.

Table 4 shows an evaluation of ChatGPT, Microsoft Copilot, Claude AI, Google Notebook, Gemini and Deep seek in terms of content quality, originality, usability, and ethical considerations. The reports were manually evaluated based on the similarity reports by the selected academics at a private higher education institution in South Africa.

Table 4: Evaluation of the Generative AI tools

Generative AI Tool	Content quality	Originality	Usability	Ethics
ChatGPT	4/5	5/5	5/5	2/5
Microsoft Copilot	3/5	3/5	5/5	4/5
Claude AI	5/5	4/5	3/5	4/5
Google Notebook LM	4/5	2/5	4/5	5/5
Gemini	4/5	4/5	4/5	4/5
Deep seek	4/5	3/5	4/5	4/5

ChatGPT performed well in usability, content quality and originality, but its ethical considerations rely heavily on user awareness of responsible AI use. Microsoft Copilot was convenient due to its integration in the Microsoft Office suite, but the content tended to be too generic. Claude AI performed well across the dimensions of content quality, originality, and ethics. However, the tool

did not perform very well from a usability perspective. Similarly, Google Notebook LM excelled in all dimensions except for the originality facet. The scores from Gemini were very consistent across all four dimensions of content quality, originality, usability, and ethics. Lastly, Deep seek had high scores on content quality, usability, and ethics, except for originality which had a mediocre score. Based on the findings from the case study, literature and industry reports, this study proposes the Ethics framework for academic integrity, presented in Figure 7.

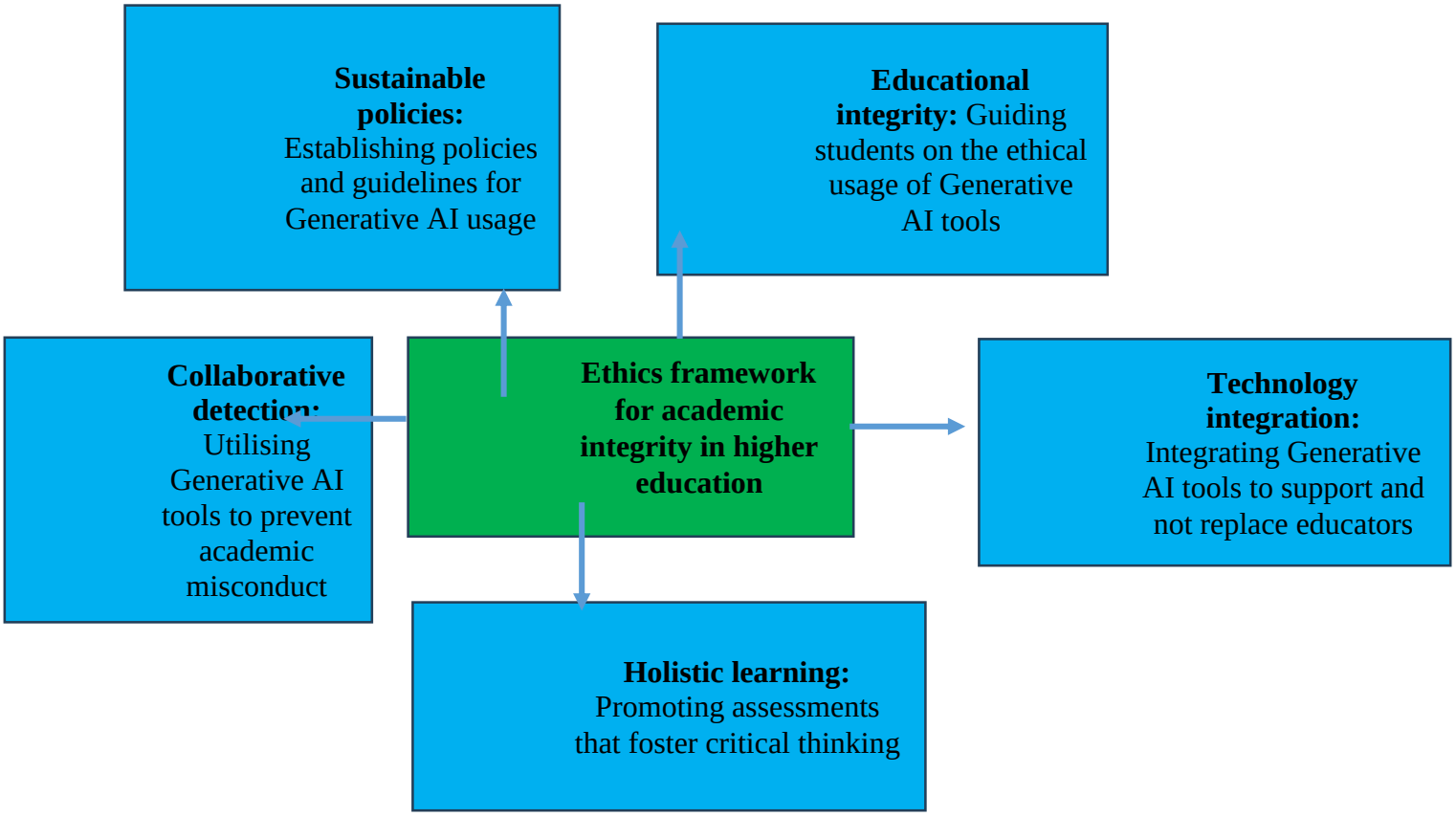


Figure 7: Ethics framework for academic integrity in higher education (Author's own creation)

The Ethics framework is a conceptual model that integrates Generative AI tools into higher education while upholding academic integrity. The core components of the framework, aimed at ensuring responsible Generative AI practices in academic settings, are:

- Educational integrity
- Technology integration
- Holistic learning
- Collaborative detection
- Sustainable policies

Each of the components listed above plays an essential role in encouraging the responsible use of Generative AI while maintaining the academic standards in higher education.

Educational integrity

Educational integrity instructs both students and the faculty on the ethical and responsible use of Generative AI tools. This includes an understanding of the ethical implications, proper citations, and transparent disclosure when using Generative AI tools. The case study highlights the significance of understanding when and how to utilise Generative AI tools appropriately when writing academic work. There is need for ethical practices such as avoiding plagiarism and acknowledging all AI contributions (Sullivan, et al., 2023), a point which is consistent in literature. An example of an acknowledgement tool developed for this study is shown in Appendix 1 of this article.

Technological integration

The technological integration facet of the ethics framework emphasises the seamless integration of Generative AI into assignments and projects. This includes using Generative AI to support learning by providing personalised feedback, explanations, and insights without replacing critical thinking and originality. Tools like ChatGPT could help students structure ideas and get feedback (Sullivan, et al., 2023), but these students should be careful to avoid over-reliance on such tools.

Holistic learning

Holistic learning focuses on creating assignments and projects that encourage critical thinking, creativity, and problem-solving. Michel-Villarreal et al. (2023) emphasize that assignments should be designed in ways that make it challenging for students to rely solely on AI-generated content. Findings from the literature review and industry reports established that assignments structured as open-ended questions or requiring reflection were effective in minimizing Generative AI misuse.

Collaborative detection

Collaborative detection incorporates AI-based detection tools to identify instances of Generative AI misuse, such as AI-generated plagiarism. Collaborative detection involves both educators and students in the integrity process, with transparency about the detection methods. Detection tools ensure originality of students' work (Perkins, et al., 2024). The use of tools that identify AI-generated content is important to uphold academic standards and reinforce transparency. The AI detection tools should be embedded into the Learning Management Systems (LMS). Perkins et al. (2024) advocate for a combination of academic judgment and software to identify AI-generated content in students' assessments.

Sustainable policies

Wang et al. (2024) confirm that sustainable policies seek to develop clear, adaptable policies around the ethical use of Generative AI in higher education. Effective policies should outline when and how Generative AI tools can be used, specifying transparency requirements for disclosing AI assistance (Ateeq, et al., 2024), and clarifying the consequences of misuse. To remain effective over time, these policies should adapt to changes as AI technology and educational needs evolve, ensuring that academic standards are upheld in a sustainable manner. These policies should have clear and consistent guidelines on what constitutes acceptable and unacceptable Generative AI usage.

The Ethics framework for academic integrity provides a balanced and sustainable approach to integrating Generative AI tools in higher education. The framework ensures that AI technology enhances learning experiences while maintaining the integrity of academic work hence, fostering an environment where students can benefit from the capabilities of Generative AI without compromising the ethical standards. Generative AI tools can be effectively utilised to uphold assignment integrity in higher education, and this includes the use of these tools as supplementary aids rather than as primary sources of content creation (Fuchs & Aguilos, 2023). For instance, students can use Generative AI

tools for brainstorming, receiving feedback on drafts, or understanding complex concepts, but with clear guidelines that require them to critically engage with and refine the generated content. Assignments can be designed to demand personal reflection, analysis, or creative problem-solving, making it difficult for Generative AI to produce fully adequate responses without human involvement. Additionally, implementing AI detection tools ensures that any misuse is identified and addressed thereby, maintaining academic integrity across institutions.

The capabilities and usability of different Generative AI tools vary significantly thus, influencing how they support academic tasks (Matsiola, et al., 2024). Tools like ChatGPT are highly versatile in generating text and providing detailed explanations, but they require critical oversight to ensure content accuracy. On the other hand, Microsoft Copilot is particularly effective in assisting with coding and technical writing, but it must be used in a way that encourages learning rather than simple task completion. A comparison of these tools highlights the importance of choosing the correct Generative AI solution based on the specific academic task while enforcing usability features that promote ethical behaviour, such as content verification and transparency.

Higher education institutions should adopt comprehensive policies and best practices that outline clear expectations for Generative AI tool usage (Wang, et al., 2024; Ateeq, et al., 2024; Fuchs & Aguilos, 2023). These policies must ensure compliance with privacy regulations, require explicit consent from students for data collection and use as well as adhere to institutional data privacy policies. They should also include guidelines for proper attribution of AI-generated content, emphasizing transparency when Generative AI tools are used. An example of best practices for Generative AI usage is shown in Appendix 2 of this article. This study suggests that the best practices be customised to each higher education institution's requirements. Higher education institutions can promote responsible use by offering training sessions for students and faculty on the ethical implications and limitations of Generative AI. Best practices include designing assessments that are resistant to AI misuse (McDonald, et al., 2025), incorporating AI detection systems (Perkins, et al., 2024) and establishing a review process for suspected academic misconduct. Moreover, higher education institutions should regularly update their policies to adapt to advancements in AI technology, ensuring that ethical standards are maintained as Generative AI tools evolve.

Validation of findings presented in the Ethics framework

To validate the findings presented in the framework for academic integrity, a total of five (5) interviews were conducted with academics working at a private higher education institution in South Africa. To address concerns of potential selection bias, the study clarifies that the study's aim was not to produce statistically generalizable findings but to generate preliminary perspectives that can inform further research. The questions asked sought to understand how the framework for academic integrity could be used to maintain academic integrity using Generative AI tools. The questions asked are listed below:

- How can Generative AI tools be effectively utilized to uphold academic integrity in higher education?
- How do the capabilities and usability of different Generative AI tools compare in supporting academic activities?
- What are some of the best practices which could be adopted by higher education institutions to guide the responsible use of Generative AI tools?
- In what ways can faculty and students be trained to use Generative AI tools responsibly?

In response to the first question "*How can Generative AI tools be effectively utilized to uphold academic integrity in higher education?*", the interviewees submitted that Generative AI tools should be integrated thoughtfully into the educational process. The interviewees also concur ed that Generative AI tools should be used as supplementary aids rather than as primary sources of content creation. This finding corroborates with Rasul, et al. (2024) who argue that Generative AI should be used as additional learning material in higher education. Students can therefore use Generative AI tools for brainstorming and understanding complex concepts that require critical engagement.

The question *"How do the capabilities and usability of different Generative AI tools compare in supporting academic activities?"* sought to compare the selected Generative AI tools. On this question, the interviewees responded differently. Some highlighted the importance of ChatGPT in generating text and providing detailed explanations while others criticised the tool in a higher education setting. It was confirmed that Microsoft Copilot is highly effective in assisting with coding and technical writing, but the tool must be used in a way that encourages learning rather than simple task completion. A comparison of these tools highlights the importance of choosing the right Generative AI tool based on the specific academic task. Interviewees also highlighted that the Generative AI tools work differently in different disciplines, and this ratifies the point highlighted by Wang, et al. (2024) that Generative AI tools operate in diverse ways depending on the academic or professional discipline in which they are applied. Therefore, a tool that excels at generating content may not be as effective when it comes to delivering precise scientific solutions.

The third question sought to *understand some of the best practices which could be adopted by higher education institutions to guide the responsible use of Generative AI tools*. All the interviewees advocated for the adoption of comprehensive policies that outline clear expectations for Generative AI usage. Nagpal (2024) argues that these policies must ensure compliance with privacy regulation bodies. Furthermore, the interviewees emphasised the issue of transparency where students should declare the usage of Generative AI in their assignments and or projects. Best practices should therefore include designing assessments that are resistant to AI misuse, incorporating AI detection systems, and establishing a review process for suspected academic misconduct. A critical point here is that these policies should be reviewed regularly to maintain academic integrity.

The last interview question sought to *identify how faculty and students should be trained on responsible Generative AI usage.* The academics that were interviewed suggested structured digital literacy programs to allow the ethical use of Generative AI tools. The interviewees suggested training workshops to empower students and faculty in what can be considered as life-long learning or continuous professional development. These sessions should be aimed at transparency in disclosing Generative AI assistance. From the empirical findings, faculty should lead by example through, incorporating responsible Generative AI use into their teaching practices and assignments. On the other hand, students should critically evaluate AI-generated content rather than using it as a substitute for original thinking. This important approach, not only preserves academic standards but also, promotes the development of essential skills in higher education. In addition, higher education institutions should offer ongoing professional development workshops that focus on responsible Generative AI usage. The conclusion from this study is presented next.

Conclusion

The Ethics framework for academic integrity offers significant benefits to the higher education domain, particularly in the responsible use of Generative AI tools. By providing a clear set of guidelines and best practices for ethical AI use, the framework addresses pressing concerns about academic integrity and ensures that educational standards are upheld in an era where AI technologies are becoming increasingly influential. The framework promotes a culture of honesty and responsibility which helps students and educators to navigate the complexities of using Generative AI tools in academic work. Additionally, the framework enhances the quality of education by leveraging Generative AI tools to provide personalised learning support, which can improve student engagement and the understanding of complex subjects. Although the results indicate the potential benefits of an Ethics framework for AI in higher education, broader studies with larger and more diverse samples are needed to extend these findings.

The structured approach to integrating Generative AI into higher education also encourages innovative and creative thinking, as it guides the design of assignments and projects that challenge students to produce original work rather than relying solely on AI-generated content. This can help develop critical thinking skills and better prepare students for the evolving demands of the modern workforce. From a broader perspective, the Ethics framework for academic integrity serves as a valuable model for other institutions and researchers seeking to implement Generative AI ethically and effectively. The framework contributes to the higher education field by offering an adaptable approach that balances the benefits of Generative AI with the need for rigorous academic standards. By fostering ongoing dialogue around data privacy, ethical considerations, and responsible AI use, the framework sets a foundation for future research and policy development, advancing the responsible and beneficial use of Generative AI in higher education.

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Appendix 1: Declaration of Generative AI tools

Acknowledgment of Generative AI Tools Usage

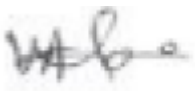
To encourage and support the responsible use of Generative AI in creative work, I would like to extend my appreciation to the various Generative AI tools that played a crucial role in the development of this assignment/research/project.

1. [AI Tool 1: Chat GPT]
2. [AI Tool 2: Microsoft CoPilot]
3. [AI Tool 3: Gemini]

Utilization of Generative AI Tools:

The features and capabilities of these Generative AI tools were instrumental in enhancing the accuracy, depth, and efficiency of this assignment. Their advanced natural language processing and content generation abilities allowed for a more comprehensive exploration of key concepts, ensuring clarity and coherence in the final report. Additionally, these Generative AI tools facilitated quick information retrieval, streamlined content structuring, and provided valuable insights that enriched the overall quality of this work.

Student/Educator name: Alfred Mazorodze

Signature: 

Date: 26 June 2025

Appendix 2: Best practices on Generative AI usage in higher education institutions

Below is an itemised list of 10 best practices derived from this study which could be used to guide Generative AI usage in higher education institutions:

a) Advocate for ethical and responsible use of Generative AI
b) Incorporate Generative AI as a supplementary learning tool, not a substitute
c) Uphold academic integrity and prevent plagiarism
d) Offer training programs for both students and faculty on Generative AI usage
e) Harness Generative AI to enhance personalized learning experiences
f) Promote transparency in the use of AI-generated content
g) Utilize Generative AI to improve academic processes
h) Encourage AI-Driven research and technological advancements
i) Integrate AI-Powered tools to enhance accessibility in higher education

Continuously evaluate and update institutional AI policies