Student's Perspectives on AI and Critical Thinking in Academic Writing

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ABSTRAK

AI telah menjadi hal yang umum di sektor pendidikan, dan pesatnya masuknya alat-alat AI membuat mahasiswa dan dosen kewalahan. Penggunaan alat AI yang akurat menawarkan peluang untuk memajukan pembelajaran mahasiswa; namun, penggunaan yang salah menimbulkan risiko, yang memungkinkan mahasiswa untuk mengabaikan praktik penelitian mendasar dan berpikir kritis demi membiarkan AI menghasilkan tugas atau makalah penelitian mereka. Kecurangan akademik dan plagiarisme telah menjadi masalah utama dalam pendidikan tinggi. Studi ini menyelidiki mengapa mahasiswa menggunakan AI dan bagaimana hal itu membentuk keterampilan berpikir kritis dan penulisan akademik mahasiswa. Berdasarkan teori penggunaan dan kepuasan (UGT) dan teori pembingkaian (FT), penelitian ini mengeksplorasi motivasi mahasiswa untuk menggunakan AI dalam pekerjaan akademik mereka. Pendekatan penelitian kuantitatif digunakan, dengan menggunakan Google Forms untuk pengumpulan dan analisis data. Temuan menunjukkan bagaimana mahasiswa menggunakan alat AI untuk meningkatkan penulisan akademik dan berpikir kritis mereka. Membangun lingkungan penelitian dan pembelajaran yang berkelanjutan membutuhkan kepatuhan terhadap pedoman etika yang mengatur penggunaan alat AI dalam penulisan akademik. Universitas perlu mengembangkan kebijakan yang jelas untuk mempermudah mahasiswa menggunakan perangkat AI secara etis, yang akan membantu mereka berpikir lebih kritis.

Kata Kunci: *Kecerdasan Buatan,* Critical Thinking, *Penulisan Ilmiah, Plagiarisme*

ABSTRACT

AI has become ubiquitous in the educational sector, and the rapid influx of AI tools overwhelms both students and lecturers. The accurate use of AI tools offers opportunities to advance student learning; however, the incorrect use poses risks, which enable students to bypass fundamental research practices and critical thinking in favour of allowing AI to generate their assignments or research papers. Academic dishonesty and plagiarism have become major concerns in higher education. This study investigates why students use AI and how it is shaping students' critical thinking skills and academic writing. Grounded in the uses and gratifications theory (UGT) and framing theory (FT), the research explores students' motivations for using AI in their academic work. A quantitative research approach is employed, using Google Forms for data collection and analysis. The findings reveal how students use AI tools to improve their academic writing and critical thinking. Building a sustainable research and learning environment requires adherence to ethical guidelines governing the use of AI tools in academic writing. The university needs to develop a clear policy to make it easier for students to use AI tools in an ethical way, which will help them think more critically.

Keywords: Artificial Intelligence, Critical Thinking, Academic Writing, Plagiarism

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A. INTRODUCTION

The human mind remains essential in academic writing as a foundation for creativity and critical thought. Writing is a tool that requires thinking about new ideas and concepts in addition to communicating outcomes and AI uses information technology to simulate human-like thinking and reasoning (Koivisto and Grassini, 2023). In education, AI tools are now easily accessible for content generation and knowledge refinement (Zuhri et al., 2022). Students' misuse of AI raises concerns about ethical practices, plagiarism, and academic dishonesty. According to Balalle and Pannilage (2025), academic integrity is an essential part of higher education, and this entails honesty, trust and students behaving morally when it comes to academic honesty. AI tools like ChatGPT, Grammarly, and QuillBot influence academic writing in multiple ways, in which students decide the pathway that benefits them (Balalle and Pannilage 2025). AI has become ubiquitous in the education sector, and the rapid emergence of AI tools overwhelms students. The completion of assignments and meeting deadlines can create pressure, especially when students procrastinate, and then the use of AI becomes a sense of convenience. The UGT clearly explains why students will use AI to fulfil a need and may or may not experience gratification (George et al. 2023; Bylyeva et al. 2023). Students using AI may not fully understand the ethical dilemma.

FT, which deals with opportunity versus threat, presents two frames. The first frame holds that the right to use tools offers opportunities to advance student learning. The second frame deals with risks pertaining to the incorrect use. This poses risks, which enable students to bypass key principles of research practices and critical thinking in favour of allowing AI to generate their assignments or research papers. Academic dishonesty and plagiarism have become major concerns (George et al. 2023). In contemporary education, students'

perspectives on academic dishonesty are crucial, especially as technology facilitates dishonest practices. Understanding how students view cheating ethically and whether they recognise the related dilemmas is essential for addressing issues of integrity in academia (Bylyeva et al. 2023). Ghotbi (2023) states that the increasing reliance on AI tools poses a threat to the development of essential skills such as problem-solving and independent thinking and further notes that the presence of AI in academic settings raises serious concerns about its potential misuse, including plagiarism and cheating in online examinations and other academic tasks, such as generating tests for submissions as one's work, as well as privacy infringement and biased decision-making that does not favour certain groups of people. Therefore, this study was set to investigate the influence of AI on students' critical thinking skills and assess students' motivations, attitudes and why students use AI tools.

B. LITERATURE REVIEW

The Role of AI in Transforming Academic Writing and Learning

AI is understood as the use of information technology and computer systems to replicate human-like thinking (Walter 2024). Butler (2024) describes critical thinking as the evaluation and careful analysis of information and data to make informed decisions. Darwin et al. (2024) argue that AI serves almost the same purpose as critical thinking, which includes the ability to make critically analysed judgements, provide logical reasoning, effective problem-solving, and decision-making. However, Szmyd and Mitera (2024) argued that the introduction of AI in the education sector, particularly in higher learning institutions, is fundamentally reshaping the traditional way of teaching and learning, ushering in a new era of information reception and acquisition to generate academic work. However, the use of AI tools in academic writing is beneficial to both students and academics in such a way that these tools, such as ChatGPT, Grammarly, and Copilot, help students refine their thinking

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and provide logic to their arguments. Academics have integrated AI in their teaching and learning curriculum and use it to detect plagiarism in students' work to help maintain the integrity of academic writing, and the image of learning institutions.

Critical Thinking and Academic Writing in Higher Education

Critical thinking in academic literacy is an important part of students, researchers, and academia's journey, and it enhances one's comprehension, reasoning, and cognitive interests. Guo et al. (2024) argue that writing is an essential and indispensable skill for academic achievement. They argue that learning how to write has been a challenge and complicated critical thinking processes for most students, as writing requires a lot from students, starting from generating ideas, planning, self-motivation, and technical structure, which are draining. All of this requires the student's cognitive abilities. Taken together, these demands highlight that the introduction of AI and its tools, more specifically, ChatGPT, aids students in structuring their thoughts, refining ideas, and generating logically coherent academic writing. Auenthaisong (2025) states that students receive large amounts of information from the internet, and that these AI tools help students to analyse data and extract relevant information more precisely. Students can receive personalised and fast feedback, which facilitates learning. According to Song, Shin, and Shin (2024), tools like ChatGPT, OpenAI, and ClickUp come with many benefits that both students and lecturers cannot resist. Lecturers use these tools to generate and plan lessons, grading, and student assignments (Raza et al., 2025).

Some challenges arose on the theme of critical thinking and academic writing in higher education, as Abarzosa and Balaba (2025) argue that the evolution of something always has some advantages, but it also has some drawbacks. As students continuously and consistently depend on AI tools, they fail to improve some basic cognitive skills and become less functional in academic performance. Basha (2024) further stresses that student over-reliance on AI tools for academic achievement could potentially lead to a decline in critical thinking, gradually fading away from traditional skills, such as memorisation and handwriting, as students copy and paste information from AI sources. Building on this

idea, Melisa et al. (2025) argue that anything can be fruitful until people do not become too dependent on it to the extent that, when something is overused, it may become an addiction. Similarly, this means that when students over-rely on AI tools, they can be addicted to them in the long term, framing these AI tools as the new way of thinking, whether from undergraduate studies to post-graduate studies. Xiong et al. (2025) argue that the student's mind might decline in originality and critical thinking, possibly resulting in a factory reset, and projecting AI as a supplement or thinking paradigm. Furthermore, Raza et al. (2025) note the concerns about the risks associated with academic integrity and ethical awareness, bound to AI-associated cheating, that students neglect the effects of AI tools in their academic work, consistently focusing on the positive aspects of AI.

AI and Academic Integrity

The relationship between AI and academic integrity is a growing area of concern (Ibrahim et al., 2023). Mulenga and Shilongo (2024) identify plagiarism as a serious violation that undermines both student credibility and institutional reputation. Obande and Tsenongu (2024) argue that it directly limits the development of original thought and critical thinking. Mishra (2023) states that upholding academic standards is a shared responsibility between students and lecturers.

Detection has become increasingly difficult as students use AI tools to humanise AI-generated text, blurring the line between original AI produced work. Hutson (2024) mentioned that tools like Turnitin and Quillbot, while widely used, may offer a false sense of security. Yang et al. (2024) state that the risks of false positives, where these tools produce biased results based on familiar writing styles through text matching rather than genuine authorship evaluation. Davis (2025) reports that in a study of 26 postgraduate students, 65% confirmed awareness of their peers using AI for academic dishonesty. Nozibele (2025), reports that the University of Cape Town has decided to discontinue AI detection tools in from October 2025, using ethical AI literacy and innovative curriculum design over automated surveillance.

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This employed the Uses and Gratification Theory (UGT) and the Framing Theory (FT). The UGT clearly explains why students will use AI to fulfil a need and may or may not experience gratification (George et al. 2023; Bylyeva et al. 2023). Students using AI may not fully understand the ethical dilemma. FT, which deals with opportunity versus threat, presents two frames. The first frame holds that the right to use tools offers opportunities to advance student learning. The second frame deals with risks pertaining to incorrect use. This poses risks, which enable students to bypass key principles of research practices and critical thinking in favour of allowing AI to generate their assignments or research papers. Academic dishonesty and plagiarism have become major concerns (George et al. 2023). In contemporary education, students' perspectives on academic dishonesty are crucial, especially as technology facilitates dishonest practices. Understanding how students view cheating ethically and whether they recognise the related dilemmas is essential for addressing issues of integrity in academia (Bylyeva et al. 2023).

C. METHOD

A quantitative research method is a detailed and systematic approach used to gather and analyse data to understand a problem being studied (Tripathi, Giri, and Tripathi 2024). This research study employed a quantitative research method to determine the role of AI in influencing the development of students' critical thinking skills and assisting in preventing plagiarism in their academic writing. The target population of this study was undergraduate students enrolled on an undergraduate degree, who served as the primary participants. A simple random sampling method was used. According to Almalky et al. (2024), the sampling technique ensures that every member of the population has an equal chance to be selected and produces an unbiased sample that is most likely to represent the entire population. The study was limited to students from the Department of Communication Science at the University of Zululand, Faculty of Humanities and Social

Sciences. Upon acquiring ethical clearance from the Research Office, a total of 100 students were surveyed using Google Forms (Geampana and Perrotta 2025). Students were also briefed that this survey was voluntary, their personal information would not be disclosed and that they could withdraw at any stage. To examine associations between key variables, chi-square tests of independence were conducted using cross-tabulated data exported from Google Forms. The chi-square test was selected as it is appropriate for testing relationships between categorical variables (Pallant 2020). Statistical significance was determined at the conventional threshold of $\alpha = .05$. Prior to interpretation, expected cell count assumptions were verified for each test. Where expected cell counts fell below 5 in more than 20% of cells, a sensitivity analysis was conducted by collapsing response categories to confirm the robustness of the omnibus result (Field 2018). Effect sizes were reported using Cramér's V, where V = .10 indicates a small effect, V = .30 a medium effect, and V = .50 a large effect. The following associations were examined: (1) ChatGPT use and belief that AI enhances critical thinking; (2) frequency of AI use and plagiarism-checking behaviour; (3) frequency of AI use and ChatGPT use; and (4) use of AI for idea generation and ability to differentiate accurate from inaccurate AI-generated information.

D. FINDINGS

The results suggest that 67% of students do not use AI tools daily but use them sometimes. Students who indicated that they always were 28%. Still, they are used occasionally, and their existence has been accepted and acknowledged by students.

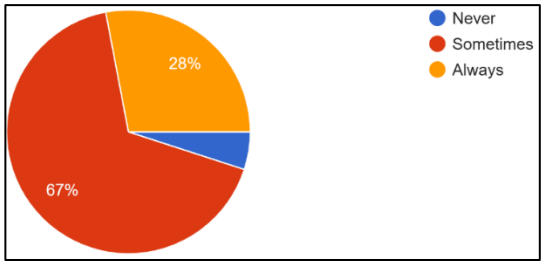

Figure 1. Patterns of AI Use Among Students.

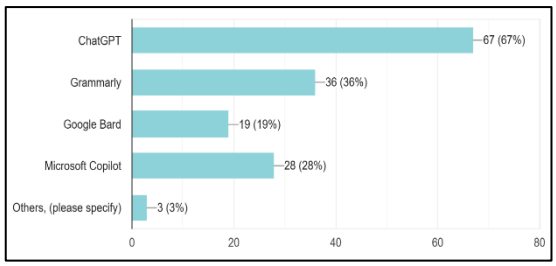

Figure 2. Types of AI tools used in academic writing by respondents.

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Figure 2 illustrates the use of AI tools by students for their academic writing. ChatGPT is the preeminent and most acknowledged AI tool utilised by students for academic writing, chosen by 67% of students. A chi-square test of independence was conducted to ascertain whether students who utilise AI more frequently are particularly inclined to use ChatGPT. The correlation between the frequency of AI usage and ChatGPT utilisation was not statistically significant, $\chi^2(2, N = 100) = 5.12$, $p = .077$. Figure 3. AI tools used for generating ideas for academic writing.

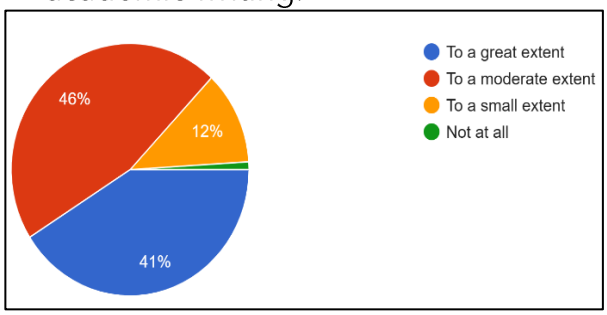

Figure 3 illustrates the extent to which students believe that AI helps them generate ideas for their academic writing.

The data revealed that 46% of students use AI tools moderately, while 41% mentioned that they largely use AI tools. When considering these two variables, AI does influence students' academic writing. 12% of students indicated use to a small extent. 1% mentioned that they do not use AI tools at all. This data suggests that students use these AI tools regularly, and may rely on them for some tasks, yet show a great balance of approach when it comes to using these tools. Overall, this data may imply that students see value in an AI tool, but also likely use their own judgment concerning their use.

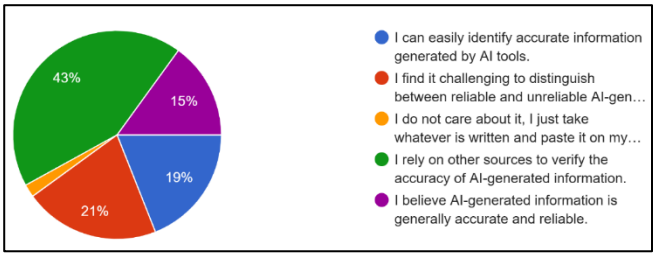

Figure 4. Difference of AI-generated information.

Figure 4 highlights how students differentiate between accurate and inaccurate AI-generated information. It is important to note that 17% of students either use whatever AI makes or think that AI-generated content is always correct.

To ascertain whether students utilising AI for idea generation possess enhanced capabilities to assess AI-generated content, a chi-square test of independence was performed to analyse the correlation between the degree of AI usage for

idea generation (Figure 3) and the students' proficiency in distinguishing accurate from inaccurate AI-generated information (Figure 4). The association was not statistically significant, $\chi^2(4, N = 100) = 1.43$, $p = .839$, with a negligible effect size (Cramér's V = .12

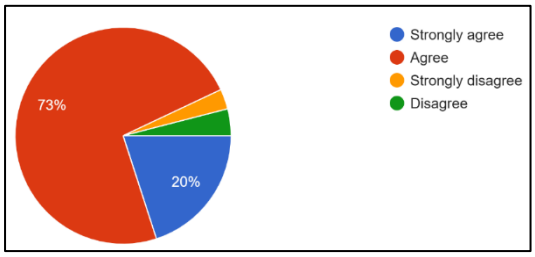

Figure 5. Use of AI Tools for analysing arguments

Figure 5 relates to how students use AI tools to analyse arguments to assist in their critical writing. The results presented here reveal that 73% of the students selected agree, and 20% selected strongly agree, while 4% of the respondents selected disagree, and 3% strongly disagree. A total of 7% of students hold the position that AI tools do not contribute towards assisting them in critical thinking. What is notable is that 93% of students agree with the fact that these AI tools help them analyse arguments and provide evidence more logically in their academic writing. This data may suggest that students have a positive attitude towards the use of AI tools. Furthermore, such a large percentage does not necessarily mean that all of them are using AI Tools correctly.

Response Option	Percentage
Strongly Agree	19%
Agree	65%
Disagree	10%
Strongly Disagree	6%

Table 1: AI tools coherently organise academic papers and assignments.

The results yielded that 19% of students are strongly in favour and 65% of the students agree, which means that generally 84% of students share consensus. It is also important to acknowledge that students who strongly or just disagree total to 16%, which means some students are not convinced.

While there is a larger percentage of students in favour, it is paramount that awareness of the correct use of AI tools is socialised among all students.

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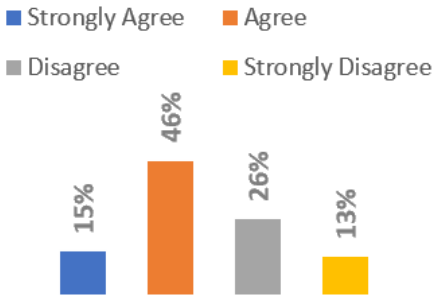

Figure 6. Students' AI Dependence.

Figure 6 relates to students' AI dependence, and considering 15% strongly agree, and 46% agree, indicates dependence or reliance on the AI tools to assist them with their work. However, 26% of students selected Disagree, and a further 13% strongly disagree. This is significant, 39% of students reveal that they are not dependent on AI tools. This does not mean that they do not use AI tools for other purposes, but they indicate that they are non-dependent. What is concerning is that 61% of students suggest that they use AI tools and are likely to pass critical thinking and neglect the traditional way of writing up their academic work and depend on AI. Correct use of AI tools again becomes a major concern among academia. The ethical use of AI must be highlighted and become a part of the daily process of using AI as a tool, and not the other way around.

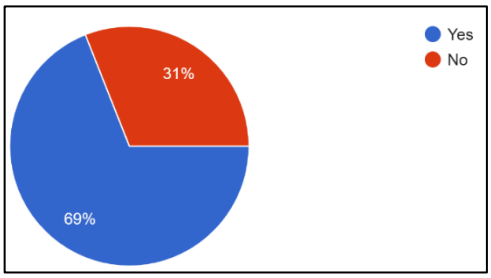

Figure 7. AI tools are enhancing critical thinking.

Figure 7 demonstrates 69% of students believe that AI technologies can help people think more critically over time, while 31% disagree. We used a chi-square test of independence to see if there was a link between using ChatGPT and this belief. The connection was not statistically significant, χ^2 (1, N = 100) = 1.09, p = .297, which means that just using ChatGPT does not mean that a student thinks AI makes them think more critically. This finding is important because it shows that many students believe that AI can help them think critically, no matter what tools are used. This aligns with Melisa et al. (2025), who assert that students' perceptions of AI as an educational tool surpass any specific platform.

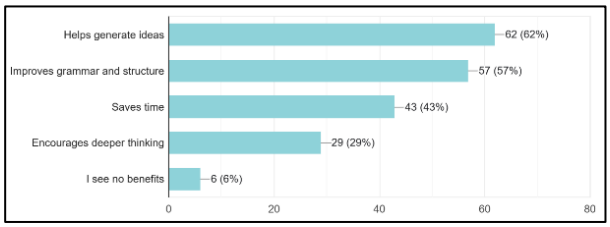

Figure 8. Perceived benefits of AI.

Figure 8 is about the perceived benefits that students get from using AI tools. 62% of students indicated that AI tools help them to generate ideas, and 57% of students mentioned that AI tools help them improve grammar and structure, while 43% say that it helps to save time. Students, also make up of 29% of students indicated that it encourages deeper thinking; however, 6% of students see no benefits. This data suggests that there are many benefits of AI tools, and if used effectively and ethically, they could improve learning and critical thinking.

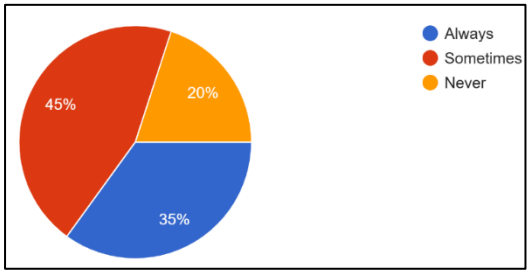

Figure 9. AI tools for checking plagiarism.

Figure 9 shows that 35% of students always check for plagiarism before turning into their work, 45% do so sometimes, and 20% never do this. A cross-tabulation was performed and illustrated via a percentage-based clustered bar chart (Figure 9b) to analyse the relationship between plagiarism-checking behaviour and the frequency of AI tool usage among students. The graph shows that students who use AI tools a lot are more likely to check for plagiarism regularly than those who only use AI tools occasionally or not at all. This suggests that students who use AI tools a lot may be more aware of plagiarism issues. An omnibus chi-square test of independence was conducted to formally assess the observed pattern across all response categories. The result was not statistically significant, χ^2 (4, N = 100) = 1.43, p = .839, with a negligible effect size (Cramér's V = .12), indicating that the correlation between the frequency of AI usage and plagiarism-checking behaviour is minimal.

It is necessary to acknowledge that two expected cells have fewer than five examples, suggesting that the chi-square approximation is adequate, if marginally (Field 2018). A sensitivity study was performed to

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validate the robustness of this conclusion by consolidating the response categories into three overarching groupings. The sensitivity test yielded a non-significant result, χ^2 (2, N = 100) = 0.62, p = .735, so affirming the reliability of the omnibus result and indicating it is not an artefact of the minimal predicted cell numbers.

Thus, while the clustered bar chart indicates a propensity for more frequent AI users to verify plagiarism more regularly, this trend fails to achieve the standard criterion for statistical significance at =.05, and the effect size is minimal. This research indicates that plagiarism-checking behaviour may be influenced by factors beyond mere AI usage frequency, like institutional policy enforcement, individual understanding of academic repercussions, or personal values about academic integrity (Mulenga and Shilongo 2024; Floridi 2023).

Figure 9b: Plagiarism-checking behaviour by frequency of AI use

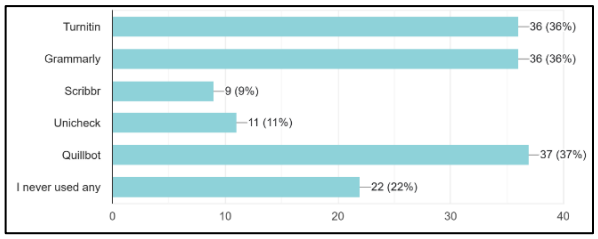

Figure 10. Types of AI detection tools.

Figure 10 focuses on the types of AI-based plagiarism tools that students are familiar with. Students selected Turnitin and Grammarly, totaled to 36% of the respondents, and Scribbr was selected at 9%. Unicheck was at 11% of the respondents; on the other hand, 37% of students selected Quillbot. What is alarming is that 22% of students indicated that they never used any of the AI-based detection tools, and this closely correlates with the variable in Figure 9, where 20% of students mentioned never checking for plagiarism.

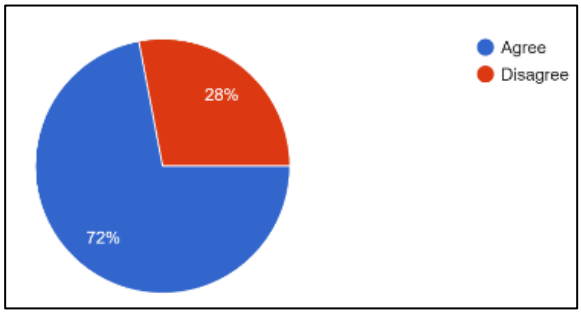

Figure 11. Paraphrasing.

Figure 11 is about investigating how students paraphrase. It was important to ask Students since they tend to use synonyms to bypass the plagiarism checker. Students choose

between two variables, 72% reported that they agree, while 28% of students disagree. This clearly indicates that many students believe that by simply using synonyms, they will reduce their similarity index. Moreover, it also indicates that students do not know how to paraphrase. Using synonyms is simply regarded as word spinning, and this alters the meaning of the original text. Turnitin, for example, still flags similar sentence structures. Students must engage in the writing centre to learn to correct paraphrasing.

E. DISCUSSION

The findings of this study revealed that students use AI daily, and the existence of these tools are acknowledged by students, and ChatGPT is preeminent and used the most by students. This hereby supports the study by Auenthaisong (2025) that states that the diminished utilisation of alternative tools like Meta AI and Microsoft Copilot may suggest a lack of understanding among students or that these tools are regarded as unproductive for academic purposes. Lecturers have observed that excessive dependence on a singular instrument may hinder students' critical thinking and the uniqueness of their academic endeavours, aligning with the conclusions. A statistical test was conducted using chi-square to identify the correlation between the frequency of AI usage and ChatGPT. However, the results indicate that ChatGPT's prevalence is not just attributable to the most frequent AI users; instead, it is utilised widely across students, irrespective of their frequency of interaction with AI tools. This conclusion is significant as it suggests that ChatGPT has emerged as a standard resource among students, regardless of usage frequency, hence raising persistent worries regarding over-dependence and its effects on the formation of critical thinking (Basha 2024; Xiong et al. 2025).

This study also found that students somehow believe that AI-generated content is always correct and use it for whatever they decide. This raises serious concerns about people not thinking critically about what AI makes. This is especially concerning

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because AI tools like ChatGPT are known to hallucinate, which means they make up information that sounds true but is not (Marwala 2025). Moreover, excessive reliance on AI without critical assessment may exacerbate dependency and diminish independent thought over time (Melisa et al. 2025). In correlation between the degree of AI usage for idea generation the results of the independence Chi square test). This means that students' opinions about how accurate AI-generated information is do not change based on whether they use AI to come up with ideas. In other words, using AI more often to come up with ideas does not seem to help students get better at critically judging the information AI gives them.

This is a very worrying finding when it comes to helping people learn how to think critically. It seems that students are using AI to consume content instead of improving their analytical and evaluative skills. This is in line with the framing theory perspective used in this study; AI has been framed by students as a fast and dependable source of information, leading them to accept its outputs without the critical scrutiny that academic writing demands (De Paoli 2024; Nguyen and Hekman 2024). It also supports the argument of Ghotbi (2023), who warned that increasing reliance on AI poses a direct threat to the development of independent thinking and problem-solving skills. The findings show that there needs to be structured AI literacy education that teaches students how to question, verify, and critically evaluate AI-generated content instead of just passively consuming it. From a UGT perspective, students seem to use AI mainly to meet practical needs, like quickly and easily creating content, without getting the satisfaction of better information literacy or critical thinking skills (Le et al. 2024). The framing theory lens helps us understand this better: AI has framed itself as a reliable and authoritative source, and students who work within this frame are unlikely to question its outputs, no matter how much they use it (De Paoli 2024). The chi-square result statistically corroborates the predictions of both theories, indicating that usage

intensity alone, absent structured critical engagement, does not enhance evaluative capacity.

F. CONCLUSION

While students use AI, particularly ChatGPT, for their academic writing, their engagement with AI tools is limited and since the AI space is dynamic, this indicates gaps in awareness and AI literacy must be ongoing. Although students frequently rely on AI, and while some of them blindly use the information, a larger number of them remain skeptical of its accuracy and often verify content acquired from AI by using other sources. Furthermore, AI influences critical thinking in mixed ways: it supports idea generation, argument development, and structural clarity, yet its speed and efficiency encourage over-reliance, reduced reflection, and diminished ownership of academic work (Çelik and Baturay, 2024).

The application of UGT and FT to the findings of this study provides a logical explanation of students' AI behaviours. From a UGT perspective, students are active and motivated users who employ AI tools, particularly ChatGPT, to fulfil practical academic needs: idea generation, structural improvement, and timely job completion. However, the data suggests that this satisfaction is primarily superficial; students derive convenience from AI without attaining the deeper fulfilment associated with improved critical evaluation skills, as evidenced by the minimal correlation between AI usage for idea generation and the ability to discern accurate from inaccurate AI output. From a financial technological viewpoint, pupils have internalised AI as a trustworthy and authoritative framework that is rapid, efficient, and reliable, which deters critical examination of its outcomes (De Paoli 2024). Both theories elucidate why the prevailing trend of AI utilisation in this sample leans towards reliance rather than critical empowerment: students are incentivised to engage with AI (UGT) and have been conditioned to trust it naively (FT). Addressing this dual dynamic must be fundamental to any AI literacy initiative in higher education.

In conjunction with the arguments of previous studies, this study found that in academia, there is a lack of

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regard for AI as a threat to academic integrity, citing concerns about increased plagiarism and unreliable AI-detection tools. The findings reveal that students using AI for paraphrasing and clarity should be considered acceptable rather than seen as misconduct when students are transparent about their use. Ethical awareness workshops and the correct use of AI tools should be a top priority. This is supported by Mishra (2023), who states that maintaining academic integrity and adhering to ethical principles is crucial for both students and lecturers. AI tools are dynamic and have advanced over time. It is becoming harder for academia to differentiate between student and AI-written work since students also use AI tools to humanise AI-written text. So, ethical awareness workshops for ethical and transparent use of AI could be effective.

It is important to note that AI represents a significant source of disruption in higher education. How one uses AI will either affect learning and critical thinking or create dependence. Multiple chi-square tests of independence were conducted to validate observed patterns in the data. None of the tested associations reached statistical significance at $\alpha = .05$. The association between ChatGPT use and belief in AI's enhancement of critical thinking was not significant ($\chi^2(1, N = 100) = 1.09$, $p = .297$). The association between frequency of AI use and ChatGPT use was similarly non-significant ($\chi^2(2, N = 100) = 5.12$, $p = .077$). For the association between frequency of AI use and plagiarism-checking behaviour, the omnibus chi-square test ($\chi^2(4, N = 100) = 1.43$, $p = .839$, Cramér's $V = .12$) returned a negligible and non-significant result, confirmed by a sensitivity analysis ($\chi^2(2, N = 100) = 0.62$, $p = .735$). Finally, no significant association was found between the use of AI tools for generating ideas and students' ability to differentiate accurate from inaccurate AI-generated information ($\chi^2(4, N = 100) = 1.43$, $p = .839$, Cramér's $V = .12$). This last finding is particularly noteworthy: it reveals that using AI to generate ideas does not develop students' capacity to critically evaluate AI output, suggesting that AI engagement in this sample is largely consumptive rather than critically reflective. Collectively, these results

highlight the importance of applying inferential statistical testing alongside descriptive analysis, and underscore the need for larger, multi-institutional studies with greater statistical power to detect associations that this study may have been underpowered to identify.

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