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An Analysis of the Impact of Artificial Intelligence Tools on Student Academic Performance in Higher Education: A Case of Eelo University, Borama, Somaliland

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ABSTRACT:

This study explores the impact of Artificial Intelligence (AI) tools on student academic performance at Eelo University in Borama, Somaliland. As AI becomes increasingly integrated into educational settings, understanding its influence on learning outcomes is crucial, especially in resource-limited contexts. The research addresses the gap in knowledge regarding how AI affects students' learning behaviors, engagement, and academic success. Using a quantitative approach, structured questionnaires were administered to a representative sample of students. The data analysis focused on students' perceptions of AI's benefits and challenges, particularly in understanding complex concepts, managing time, and improving writing skills. Findings indicate a mixed response: many students found AI helpful in enhancing content comprehension and confidence in completing assignments, yet opinions were neutral regarding improvements in academic writing and overall performance. Additionally, concerns about over-reliance on AI and potential academic dishonesty emerged. The study concludes that AI tools hold significant potential to support higher education, but their effectiveness hinges on students' digital literacy and institutional preparedness. To maximize benefits, it is recommended that universities implement targeted AI training programs, promote responsible use, and establish ethical guidelines for AI integration. These measures can ensure that AI enhances learning experiences while mitigating associated risks.

Keywords: ***Artificial Intelligence, Academic Performance, Higher Education, Eelo University, AI Tools, Student Perceptions, Personalized Learning, Somaliland***

1-INTRODUCTION

Artificial Intelligence (AI) can be broadly conceptualized as the capacity for autonomous, human-like cognition, often described as "man-made thinking power" (Choudhury, 2022). The term "artificial" refers to creations or systems manufactured by humans, typically distinguished from naturally occurring phenomena, while "intelligence" encompasses the ability to acquire, apply, and adapt knowledge to solve real-world problems, learn from experience, and adjust to new situations (Legg & Hutter, 2007). This foundational understanding underscores AI's role as a human-engineered system capable of mimicking aspects of natural intelligence.

In recent years, AI technologies have gained considerable prominence in enhancing the quality of higher education. These technologies refer to computer systems capable of performing tasks traditionally requiring human intelligence, such as learning from data, recognizing patterns, and making decisions. Their ability to analyze large datasets rapidly and accurately has made them invaluable tools for improving educational outcomes (Briganti, 2023). AI systems excel at delivering precise data analysis, identifying and resolving complex problems, and supporting continuous learning to refine performance over time. They are adept at engaging with users, recognizing images and sounds, and developing well-structured plans, employing deductive reasoning to aid decision-making (Zaidan, R., 2023).

AI's integration into education offers numerous benefits. It enables students to access and upload academic materials anytime and from anywhere, thereby promoting flexible learning environments. AI streamlines routine administrative tasks, freeing up valuable time for educators and students alike. It also serves as a resource for teaching research skills on societal issues, fostering active community engagement. Furthermore, AI enhances instructional quality and assessment fairness by providing insights into innovative teaching strategies, offering personalized feedback on students' strengths and weaknesses, and supporting their academic and professional development (Almasri, N., 2022). Such personalized approaches help tailor learning experiences to individual preferences and needs, contributing to improved academic performance.

Despite these promising advantages, the incorporation of AI into higher education remains in its nascent stages. The COVID-19 pandemic accelerated a shift toward more personalized and technology-driven teaching approaches, emphasizing better monitoring and assessment strategies. AI tools like chatbots, virtual tutors, and educational games are transforming how students access knowledge, providing instant, tailored assistance that enhances engagement and learning efficiency (Salas-Pilco et al., 2022; Holmes et al., 2022). For instance, AI-powered chatbots understand natural language and

respond intelligently, offering immediate support to learners navigating complex topics. The Artificial Intelligence Index Report 2023 highlights that advanced AI systems, such as ChatGPT, can generate responses that are remarkably human-like, including answering questions and producing essays at a university level (Maslej et al., 2023).

However, the successful integration of AI in higher education requires careful planning, adequate training for educators, and an understanding that these tools are meant to support—not replace—teachers. As Lin (2022) emphasizes, AI serves as a supportive tool designed to enhance teaching strategies and help students reach their full potential. Effective implementation also demands addressing challenges such as technological infrastructure, ethical considerations, and equitable access to ensure that AI benefits all students uniformly.

The societal shift from traditional methods to innovative, technology-driven approaches underscores the importance of understanding AI's role in education. AI's broad scope—from language understanding and problem-solving to autonomous driving and medical diagnosis—makes it difficult to define precisely. Tuomi (2018) notes that interpretations of AI vary widely: some view it as machines capable of thinking or understanding language, while others see it as systems that can perform tasks traditionally associated with human intelligence. Nilsson further describes AI as computer systems that effectively operate within their environment, mimicking human cognitive functions. Hussain et al. (2022) add that AI involves powerful systems equipped with sensors and advanced processing capabilities that enable interactions resembling human cognition.

Despite its diversity, AI stands out as one of the most transformative technologies shaping education globally. While its benefits are widely recognized, especially in fostering personalized learning and improving engagement, there is a pressing need to explore its impact within specific contexts—such as in Somaliland's higher education landscape. In particular, at Eelo University in Borama, where empirical evidence on AI's influence on student academic performance remains scarce, understanding how these tools are being adopted and their effects is crucial. As AI becomes more accessible, the question arises: does it truly enhance learning outcomes, or does it introduce new challenges such as dependency, ethical concerns, and disparities in access?

This research aims to fill this knowledge gap by investigating the influence of AI tools on students' academic performance at Eelo University. It seeks to explore not only the potential benefits—such as increased engagement, personalized learning, and efficiency—but also the challenges, including technological barriers, ethical considerations, and access issues. The findings will provide valuable insights to educators, policymakers, and stakeholders, guiding effective integration strategies that leverage AI's full potential while addressing its limitations. Ultimately, this study endeavors to contribute to a deeper understanding of AI's role in higher education within this specific setting, ensuring that technological advancements support equitable and meaningful learning experiences for all students

2-RESEARCH PROBLEM

The rapid advancement and integration of Artificial Intelligence (AI) tools have profoundly reshaped educational practices across the globe, revolutionizing how students' access, process, and interact with information. Tools such as ChatGPT, Grammarly, Google Bard, and AI-driven learning platforms like Coursera and Khan Academy are increasingly being utilized in academic settings to assist in writing, problem-solving, study planning, and language improvement. These innovations are particularly valuable in enhancing personalized learning, fostering academic independence, and streamlining cognitive tasks. While developed nations have seen extensive research into the pedagogical and cognitive implications of AI tools, the picture remains less clear in many developing regions, including Somaliland.

In the context of higher education institutions in Somaliland—and more specifically, Eelo University in Borama—there is a notable scarcity of empirical evidence on how AI tools influence student learning and performance. While anecdotal evidence and informal observations suggest increasing usage of AI among students, there is limited systematic research that examines the extent to which these tools contribute to academic success, or conversely, hinder students' cognitive development, critical thinking, or academic integrity. The lack of structured frameworks, institutional policies, and faculty awareness around the use of AI in learning adds to the ambiguity and raises critical questions about ethical implications, digital literacy, and the preparedness of both learners and educators to effectively integrate such tools into academic work.

Moreover, the local context presents unique challenges, such as unreliable internet connectivity, limited access to digital devices, and a lack of formal training on AI literacy. These issues may further influence the effectiveness and perceived utility of AI tools in Somaliland's universities. The absence of targeted policies and institutional support also means that students may be relying on AI technologies without clear guidance, leading to inconsistent outcomes and potential misuse.

Given this gap, it becomes imperative to investigate the actual role of AI tools in shaping academic performance at Eelo University. This study therefore seeks to assess not only the prevalence and purpose of AI tool usage among students but also the perceived impact, benefits, and challenges associated with their use. The findings aim to inform educators, university administrators, and policymakers on how to harness the potential of AI in education responsibly and effectively, while mitigating possible risks. By providing localized insights into the interaction between AI tools and student academic achievement, this research aspires to contribute to both academic discourse and practical strategies for integrating technology in higher education in Somaliland

3-RESEARCH QUESTIONS

To guide this investigation into the influence of Artificial Intelligence (AI) tools on academic performance at Eelo University, the study is anchored on key research questions namely:

1. To what extent do students at Eelo University use AI tools in their academic activities?
2. How do students perceive the impact of AI tools on their academic performance?
3. What are the perceived challenges associated with using AI tools in higher education among students?
4. What recommendations can be made to optimize the integration of AI tools in university learning?

4- RESEARCH OBJECTIVES

In alignment with the research questions, this study outlines specific objectives aimed at achieving a comprehensive understanding of the role of AI in the academic lives of university students. These objectives are:

1. To assess the prevalence and patterns of AI tool usage among students at Eelo University.
2. To evaluate students' perceptions of how AI tools influence their academic performance.
3. To identify the challenges experienced by students when using AI tools.
4. To develop recommendations for effective integration of AI tools into university curricula and learning environments

5-RESEARCH METHODOLOGY

The researcher employed a quantitative descriptive survey design to systematically gather data on students' usage patterns, perceptions, and challenges related to artificial intelligence. The study targeted students enrolled at Eelo University across various faculties and years of study, utilizing a stratified random sampling technique to ensure that different groups within the population were adequately represented. Data collection was conducted through structured questionnaires, which were organized into sections covering demographic information, AI usage, perceived impacts, and associated challenges. For data analysis, descriptive statistics such as frequencies and percentages were used to summarize and interpret the responses. Ethical considerations were strictly adhered to, with informed consent obtained from all participants, confidentiality of responses assured, and participation made voluntary to uphold ethical research standards**.**

6-SIGNIFICANCE OF THE STUDY

This study is significant because it provides empirical insights into the current use and impact of AI tools in higher education within Somaliland, a context where such research is limited. Findings will inform university policymakers, educators, and students on the benefits and challenges associated with AI integration. The study aims to guide the development of policies and training programs that promote effective and ethical use of AI tools, ultimately enhancing students' learning outcomes and academic performance. Additionally, it contributes to the global discourse on AI in education by adding context-specific data from Somaliland

7-DATA ANALYSIS, FINDINGS AND DISCUSSION

7.0- SECTION A: DEMOGRAPHIC INFORMATION

This section presents the demographic characteristics of the respondents, including gender, age group, and year of study, which are essential for contextualizing the patterns and implications of AI tool usage among students at Eelo University

Table 1- Gender Distribution of Respondents

Male	71.4%
Female	28.6

Table 2 - Age Group of Respondents

Under 20	42.9%
20–24	57.1%
25–29	0
30 and above	0

Table 3: Year of Study of Respondents

Freshman	78.6 %
Sophomore	14.3 %
Junior	0%
Senior	7.1 %

7.1- Findings, Discussion, and Implications related to student Demographic data

7-1-1-Findings and discussion related to student Demographic data

The demographic profile of the respondents provides essential context for understanding the impact of AI tools on academic performance at Eelo University. Out of the 60 students who responded to the survey, 71.4% were male and 28.6% were female. This male-dominated sample may reflect broader enrollment trends in the institution or specific programs, and it suggests that male students are currently more represented in discussions around AI usage in academics. However, this also indicates the need for more inclusive digital literacy initiatives that target female students to ensure equitable access and engagement with educational technologies.

In terms of age distribution, a majority of the students (57.1%) fell within the 20–24 age range, while 42.9% were under 20. No respondents were aged 25 or above. This clearly indicates that the study's participants were predominantly traditional undergraduate students in the early stages of their academic journeys. Their age range is notable because younger students are often more technologically inclined and more open to experimenting with new tools like AI. This age group is also more likely to be digital natives, having grown up with the internet and smart devices, which may positively influence both the frequency and manner in which they use AI for learning purposes.

Further analysis revealed that a substantial portion of respondents were in their first year of study, accounting for 78.6%, followed by second-year students at 14.3%, and a small percentage (7.1%) in their final year. There were no third-year (junior) respondents. The high representation of freshmen suggests that even students who are relatively new to university-level education are already engaging with AI tools in their learning. This is a significant finding, as it challenges the assumption that AI adoption in academia is limited to more experienced students. Instead, it highlights how quickly educational technologies are being embraced at all levels of university study.

7-1-2: Implications related to student Demographic data

These demographic findings have several implications. First, the concentration of younger, first-year students using AI tools suggests a strong potential for early academic interventions and structured orientation on AI ethics, reliability, and effectiveness. Since these students are forming foundational academic habits, universities have a strategic opportunity to shape responsible usage patterns and reduce the risk of overdependence or misuse. Second, the lack of senior students among the respondents could point to either lower interest or less reliance on AI tools among advanced students—or possibly barriers such as unfamiliarity, perceived irrelevance, or resistance to change. This gap underlines the need for faculty-specific training and the promotion of AI benefits across all academic levels.

The gender disparity in AI tool usage also demands attention. While the study did not explore the reasons for the male dominance in responses, it raises questions about access, encouragement, and confidence levels between male and female students in using AI. Institutions should consider promoting gender-responsive digital education strategies to foster balanced participation in technological advancements.

In conclusion, the demographic characteristics of the sample offer valuable insights into the population most actively engaging with AI tools at Eelo University. The youthfulness of the student body, the early academic stage of most respondents, and the gender imbalance all carry critical implications for how AI integration should be approached. These findings emphasize the importance of tailored AI literacy programs, inclusive digital access strategies, and a stronger institutional framework to support the ethical and effective use of AI tools for all students, regardless of their year of study or gender.

8-SECTION B: STUDENT USAGE OF AI TOOLS

This section explores the extent to which students at Eelo University engage with AI tools in their academic activities, including the types of tools used, frequency of usage, and the specific academic purposes for which they are employed.

Table 4- Student Experience with Artificial Intelligence Tools

Have You Ever Used Artificial Intelligence (AI) Tools in Your Learning	
Yes	92.9%
No	7.1%

Table 5 – Types of AI Tools Used for Academic Purposes

Which Of the Following AI Tools Have You Used for Academic Purposes?	
Chat GPT	78.6 %
Deep Seek	0 %
Both ChatGPT and DeepSeek	21.4 %
Others	7.1 %

Table 6: Frequency of AI Tool Usage Among Students

How frequently do you use ai tools for academic purposes?

Daily	28.6 %
Weekly	35.7%
Occasionally	28.6 %
Never	7.1 %

Table 7 - Academic Purposes for Using AI Tools

Writing Assignments	28.6 %
Checking Grammar/Plagiarism	7.1 %
Studying or Revising	21.4 %
Generating Ideas or Summaries	14.3 %
Solving Academic Problems	21.4 %
All of the Above	28.5 %

8-1:Findings, Discussion, and Implications related to student's Usage of AI Tools

8.1.1: Findings and Discussion related to student's Usage of AI Tools

The findings of the study reveal a high level of engagement with Artificial Intelligence (AI) tools among students at Eelo University. A substantial majority of respondents (92.9%) indicated that they had used AI tools in their academic work, while only 7.1% reported not using them. This result aligns with global trends that show increasing adoption of AI in higher education (Hutson et al. 2022).). The strong uptake among students highlights the growing relevance of these tools in modern academic environments, particularly in supporting student productivity and learning efficiency.

In terms of specific tools used, ChatGPT emerged as the most popular, with 78.6% of respondents stating they had used it. An additional 21.4% reported using both ChatGPT and DeepSeek, while no student reported using DeepSeek alone. Only 7.1% mentioned using other AI tools. This finding suggests that language-based generative AI platforms, particularly ChatGPT, have achieved significant penetration among university students. The dominance of ChatGPT can be attributed to its accessibility, versatility, and perceived usefulness in tasks such as idea generation, academic writing support, and problem-solving—traits noted by prior studies (Jeon, J., & Lee, S. ,2023)).

Regarding frequency of usage, 35.7% of students indicated using AI tools weekly, 28.6% reported daily use, and another 28.6% used them occasionally. Only a small minority (7.1%) never used AI tools. This pattern indicates that AI tools are becoming part of students' regular academic routines, although the variation in frequency suggests differing levels of reliance and purpose. Daily users are likely those who integrate AI support into their daily learning and assignment workflows, while occasional users may apply it strategically for specific tasks.

When asked about the purposes for which they use AI tools, the responses varied. A notable 28.6% of students used AI specifically for writing assignments, while 21.4% used them for studying or revising, and another 21.4% used them for solving academic problems. Additionally, 14.3% reported using AI for generating ideas or summaries, and 7.1% used AI tools for grammar and plagiarism checks. Interestingly, 28.5% indicated that they used AI tools for all of the above purposes, showing a comprehensive reliance on AI across multiple aspects of academic work. This confirms the multifaceted role AI plays in supporting students' academic performance, consistent with recent literature that emphasizes AI's capacity to assist in cognitive, metacognitive, and procedural learning tasks (Popenici et al., 2017).

8.1.2: Implications related to student's Usage of AI Tools

These findings carry several important implications. Firstly, the widespread adoption of AI tools, particularly ChatGPT, suggests that higher education institutions in Somaliland—like those elsewhere—must urgently consider integrating AI literacy and ethics into the curriculum. Many students appear to be self-guided users of AI, which, while beneficial, can also expose them to potential pitfalls such as misinformation, overdependence, or academic dishonesty. Secondly, faculty development programs must be enhanced to prepare lecturers to guide and supervise students' use of AI in academically productive and ethically responsible ways.

Furthermore, the fact that students are using AI tools for a diverse range of academic activities indicates that these tools are not merely supplemental but are becoming essential components of students' learning strategies. Universities must therefore re-evaluate their instructional designs and assessment models to account for the presence and influence of AI in student work. Policies should be framed not to discourage usage, but to ensure responsible and effective integration aligned with learning objectives.

In conclusion, the high rate of AI usage among students at Eelo University, especially the popularity of tools like ChatGPT and their regular application in academic tasks, underscores the transformative impact of AI in higher education. To harness the full benefits while minimizing risks, universities must take proactive steps to develop digital competency frameworks, update academic policies, and foster an environment where AI can support—not replace—deep learning and academic integrity

9.SECTION C: PERCEIVED IMPACT OF AI ON STUDENT ACADEMIC PERFORMANCE

This section examines students' perceptions of how AI tools have influenced various aspects of their academic performance, including their understanding of complex concepts, writing skills, study habits, confidence, and ethical considerations

Table 8: Students' Perceptions of the Impact of AI Tools on Academic Performance

Statement	Response in percentages				
9. AI tools help me understand complex academic concepts better.	15.4	7.7	30.8	23.1	23.1
10. The use of AI tools has improved my academic writing skills.	23.1	7.7	46.2	15.4	7.7
11. AI tools help me manage my study time more effectively.	30.8	23.1	15.4	23.1	7.7
12. Using AI tools increases my confidence in completing assignments.	7.7	23.1	23.1	38.5	7.7
13. My academic performance has improved since I started using AI tools.	15.4	0	53.8	30.8	0
14. I rely too much on AI tools for my academic tasks.	46.2	23.1	30.8	0	0
15. AI tools promote independent learning.	25	16.7	25	16.7	16.7
16. AI-based feedback is more helpful than human feedback in some cases.	16.7	0	41.7	25	16.7
17. There are risks of academic dishonesty when using AI tools.	25	8.3	41.7	16.7	8.3
18. AI tools should be integrated into university learning platforms.	8.3	16.7	25	16.7	33.3

9.1- Findings, Discussion, and Implications related to Perceived Impact of AI on Students Academic Performance

9.1.1 :Findings and Discussion related to Perceived Impact of AI on Students Academic Performance

The responses from students regarding the perceived impact of AI tools on their academic performance reveal nuanced and varied perspectives. A closer analysis of the data suggests that while a majority of students recognize certain benefits of AI tools, there is a significant proportion that remains neutral or expresses concerns, indicating the complex and evolving role AI plays in higher education.

When asked whether AI tools help them understand complex academic concepts, responses were generally positive, with 46.2% either agreeing or strongly agreeing. However, 30.8% remained neutral, and 23.1% disagreed to some extent. This suggests that while AI is increasingly seen as a supportive learning aid, its effectiveness in delivering conceptual understanding is not uniformly experienced. This finding supports existing literature that indicates AI tools can enhance comprehension through personalized explanations but may not substitute for traditional instruction in all contexts (Popenici et al., 2017).
On the issue of academic writing, 46.2% of students took a neutral stance on whether AI has improved their writing skills, while 30.8% disagreed or strongly disagreed, and only 23.1% agreed or strongly agreed. This indicates that students may be using AI tools like ChatGPT or Grammarly passively—for correction or idea generation—without necessarily developing deeper writing competencies. Such usage could lead to surface-level engagement rather than critical writing skill development, as noted in study by Nworgu (2015).

Time management was another area of divided opinion. A combined 53.9% disagreed or strongly disagreed that AI helps them manage their study time more effectively. Only 30.8% expressed agreement, while 15.4% were neutral. This could suggest that although AI tools are accessible, students may not yet be leveraging their full potential in planning and productivity, perhaps due to lack of training or awareness about AI time management features.
Confidence in completing assignments was more positively perceived, with 46.2% agreeing or strongly agreeing that AI increased their confidence. However, a significant 23.1% remained neutral, and 30.8% disagreed. This mixed perception reflects that while AI offers support, it may not sufficiently address underlying academic insecurities or challenges for all students.

Notably, when asked if their academic performance had improved since using AI, 30.8% agreed, and 53.8% remained neutral, with 15.4% disagreeing. This indicates a cautious optimism among students, where tangible improvements are acknowledged but not universally evident. It aligns with previous research suggesting that while AI can enhance performance when integrated effectively, the benefits depend on user engagement, tool appropriateness, and task complexity (Pannu, A., 2015).

The concern over dependency is clearly reflected in the responses to the statement "I rely too much on AI tools for my academic tasks." A majority—69.3%—either strongly disagreed or disagreed, and 30.8% remained neutral. No student agreed or strongly agreed. This shows that students do not perceive themselves as over-reliant, although the high rates of usage reported earlier may suggest otherwise. This mismatch between perception and practice warrants further qualitative investigation.

On whether AI tools promote independent learning, responses were mixed: 33.4% agreed or strongly agreed, 41.7% disagreed or strongly disagreed, and 25% remained neutral. This reflects a fundamental debate in educational circles—whether AI fosters or hinders learner autonomy. It may be that students use AI to supplement rather than initiate learning, and their level of self-regulation determines how independently they engage with AI resources.
When comparing AI-based feedback to human feedback, 41.7% of students were neutral, 41.7% agreed or strongly agreed, and only 16.7% disagreed. These responses suggest that students are increasingly open to the potential of automated feedback systems, especially for quick, accessible insights, although they may still value human judgment for complex or personalized assessments.

A majority of respondents (41.7%) remained neutral about the risks of academic dishonesty associated with AI use, while 33.3% acknowledged the risks, and 33.3% disagreed. This indicates an awareness of the ethical dilemmas posed by AI but perhaps a lack of clear institutional guidelines or discussions on the subject.

Finally, when asked if AI tools should be integrated into university learning platforms, 50% either agreed or strongly agreed, while 25% remained neutral and another 25% disagreed. This reflects a forward-looking sentiment among many students, highlighting a willingness to see AI embedded into formal learning structures, provided its use is properly guided.

9-1-2: Implications from the Perceived Impact of AI on Students Academic Performance

The findings from this section offer important insights for educational policymakers and university administrators. First, the generally positive yet cautious perceptions of AI suggest a need for structured AI integration strategies in university curricula. These strategies should include clear pedagogical frameworks, ethical guidelines, and training modules that educate students on responsible and productive AI usage.
Second, the notable levels of neutrality in many responses point to a gap in awareness or informed judgment. Universities should therefore implement workshops or orientation programs to help students critically evaluate the role of AI tools in their learning and performance.
Third, the mixed responses regarding academic writing improvement and study time management indicate that AI cannot replace foundational academic skills and should be used as a complement rather than a substitute. Therefore, academic support centers should offer blended support—combining human guidance with AI-enhanced tools—to maximize learning outcomes.
Lastly, the emerging perception that AI feedback can rival or exceed human feedback suggests potential in developing AI-driven formative assessment tools. However, ethical use policies must be clearly articulated to avoid misuse, dependency, or academic dishonesty

10-Section D: Challenges of Using Artificail Intelligence Tools

This section explores the challenges students face in using AI tools for academic purposes, including issues related to awareness, internet access, critical thinking, ethical use, information accuracy, institutional attitudes, and the ability to assess reliability

Table 9: Challenges Faced by Students in Using AI Tools for Academic Purposes

Statement	Response in percentages				
19. I am not fully aware of how to use AI tools effectively in my studies.	16.7	16.7	41.7	18.7	8.3
20. Most AI tools require internet access, which is not always reliable for me.	25	0	33.3	25	16.7
21. I worry that using AI tools might reduce my critical thinking or creativity.	18.2	0	36.4	9.1	36.4
22. There is a lack of training or guidance on the ethical use of AI in academics.	8.3	16.7	33.3	33.3	8.3
23. Some AI-generated content is inaccurate or misleading.	18.2	9.1	36.4	27.3	9.1
24. My lecturers discourage or restrict the use of AI tools in learning.	8.3	16.7	41.7	25	8.3
25. I find it difficult to evaluate whether the information from AI tools is reliable.	16.7	25	25	16.7	25

10.1 Findings, Discussion, and Implications Related to Challenges in Using AI Tools

10.1.1: Findings and Discussion

The responses regarding challenges in using Artificial Intelligence (AI) tools for academic purposes reveal multiple layers of barriers and concerns among students at Eelo University. These include technical limitations, lack of knowledge, ethical concerns, and issues related to the credibility and acceptance of AI-generated content in academic settings.

A substantial portion of students (41.7%) reported being neutral about their awareness of how to use AI tools effectively, while 25% (16.7% disagree, 8.3% strongly agree) agreed to some extent that they lack this awareness. This suggests a widespread uncertainty or limited confidence among students regarding their competency in using AI for academic enhancement. Such findings emphasize the need for targeted training or integration of digital literacy modules into the academic curriculum, echoing concerns raised in the literature by Siau (2018) regarding Education in the age of artificial intelligence:
Access to reliable internet emerged as a notable challenge. While 33.3% of students were neutral on this issue, 41.7% (25% agree, 16.7% strongly agree) acknowledged that poor internet access hindered their use of AI tools. Only 25% disagreed. This finding highlights infrastructural limitations that can significantly impede students' equitable access to AI benefits—a concern especially relevant in developing contexts like Somaliland.

One of the more thought-provoking insights relates to the potential cognitive risks associated with AI. A striking 45.5% of students (9.1% agree, 36.4% strongly agree) expressed concern that AI tools might reduce their critical thinking or creativity, while 36.4% were neutral. This sentiment reflects ongoing academic debates around AI's potential to either enhance or diminish learners' intellectual engagement, particularly if students depend on AI outputs without critical evaluation (Chatterjee et al., 2020)

Ethical considerations are also a growing concern. While one-third of students (33.3%) agreed that there is a lack of training or guidance on the ethical use of AI, a similar portion (33.3%) remained neutral. This suggests a significant gap in institutional support or awareness regarding responsible AI use. The absence of clear ethical frameworks could lead to inconsistent use, academic dishonesty, or misuse of AI tools, as emphasized by Jiao, et al. (2022). Concerns about the accuracy of AI-generated content also featured prominently. Over 36.4% of respondents were neutral, while 36.4% (27.3% agree, 9.1% strongly agree) agreed that AI sometimes produces misleading or inaccurate information. This is a critical issue, especially when students rely on AI tools for assignments or learning, underscoring the importance of developing students' information evaluation skills and encouraging triangulation of sources.

Institutional attitudes toward AI use also appear to shape student experiences. A notable 41.7% were neutral on whether lecturers discourage AI use, while 33.3% (25% agree, 8.3% strongly agree) indicated some level of discouragement. This could reflect ambiguity or inconsistency in instructors' attitudes and policies toward AI, possibly leaving students uncertain about what is acceptable. Clear institutional policies and faculty development are needed to address this inconsistency.

Finally, when asked whether they find it difficult to assess the reliability of AI-generated information, 41.7% (25% agree, 16.7% strongly agree) affirmed this difficulty, while 25% were neutral. This demonstrates a gap in critical information literacy, reinforcing the need for academic guidance to help students become more discerning users of AI content.

10.1.2: 1Implications for Higher Education Institutions

Implications for higher education institutions, especially in developing contexts like Eelo University, underscore the importance of adopting strategic approaches to AI integration. One of the primary areas to address is capacity building and digital literacy. The findings reveal a significant gap in students' awareness and understanding of effective AI use, highlighting the urgent need for structured digital literacy programs. Universities should work to embed AI competencies within their curricula, ensuring that students develop the skills necessary to navigate, utilize, and assess AI tools responsibly and ethically. Another critical area is infrastructure development. Unreliable internet access remains a fundamental barrier to equitable AI usage, particularly in developing regions. To overcome this challenge, institutions should consider investing in improving internet infrastructure and forming partnerships with technology providers. These efforts can help bridge the digital divide, ensuring that all students have fair and consistent access to AI tools and resources necessary for their academic activities.

Finally, addressing policy, ethical considerations, and faculty engagement is essential for sustainable AI integration. Universities need to develop clear policies on AI usage, including guidelines for acceptable use, academic integrity, and ethical standards. Ethical training workshops for both students and staff can foster responsible AI use. Additionally, faculty members should be actively involved through professional development initiatives that align AI tools with pedagogical goals. Establishing transparent communication and consensus on AI policies will create a supportive academic environment. While challenges exist, strategic and proactive measures can transform these obstacles into opportunities for Eelo University to lead in ethical and impactful AI adoption in higher education.

11-GENERAL RECOMMENDATIONS

Based on the study's findings, several practical recommendations can be made to enhance the responsible and effective use of AI tools in higher education at Eelo University and similar institutions. First, integrating AI literacy into the curriculum is essential. This can involve developing short training sessions, workshops, or dedicated modules that equip students with knowledge about ethical AI use, responsible tool application, avoiding plagiarism, and critically evaluating AI-generated content. Such educational initiatives will help students develop the skills needed to navigate AI technologies responsibly.

Second, improving technological infrastructure is critical. The study revealed that many students face unreliable internet access, which limits their ability to use AI tools consistently. The university should therefore invest in enhancing campus-wide internet connectivity and providing access to necessary digital resources, ensuring equitable opportunities for all students to benefit from AI-enabled learning. Third, establishing clear and consistent policies on AI use is necessary. These policies should specify appropriate contexts for AI application, outline acceptable behaviors, and clarify consequences for misuse, helping align expectations among students, faculty, and administrators.

Additionally, faculty members need targeted training on AI integration. Workshops and professional development sessions can help educators understand AI's capabilities and limitations, enabling them to guide students effectively and incorporate AI into teaching practices. Promoting ethical and reflective use of AI is equally important; students should be made aware of potential risks like diminished critical thinking and creativity, encouraging responsible usage and intellectual independence. Establishing mechanisms for student feedback will also allow the university to continuously improve policies and training based on actual user experiences.

Finally, ongoing monitoring and evaluation of AI's impact on academic performance and engagement will enable the institution to make informed adjustments and ensure that AI benefits are maximized. Implementing these recommendations will help Eelo University foster an environment where AI is used ethically, responsibly, and effectively to enhance learning outcomes

12-CONCLUSION

This research examined how students at Eelo University in Borama, Somaliland, utilize AI tools, their perceived effects, and the challenges faced. The results show widespread adoption, with 92.9% of students having used AI, particularly tools like ChatGPT. Students employed AI for various academic activities such as writing, studying, brainstorming, and grammar checking, primarily on a weekly or occasional basis, indicating moderate integration into their academic routines. Most users were young (under 24) and in their first year, which may explain their enthusiasm for adopting new technologies. While many acknowledged AI's potential to enhance understanding, save time, and increase confidence in completing assignments, there was overall neutrality or uncertainty about its true impact on academic performance. This reflects both the opportunities and current limitations of AI in higher education. Several challenges were identified, including limited awareness, unreliable internet connectivity, ethical concerns, difficulty in assessing the accuracy of AI outputs, and fears that AI might undermine critical thinking skills. Additionally, the absence of formal training and mixed attitudes from faculty further hinder effective AI integration. In summary, although students see the benefits of AI tools, there is a pressing need for structured guidance, improved infrastructure, and institutional policies to promote responsible and effective use. The study emphasizes the importance of integrating AI thoughtfully into educational practices to support student growth while maintaining academic integrity.

13-APPENDICES

13.1 Appendix 1: Questionnaire

The following appendix presents the structured questionnaire used to collect data for the study titled *"An Analysis of the Impact of Artificial Intelligence Tools on Student Academic Performance in Higher Education: A Case of Eelo University, Borama, Somaliland."* The instrument is divided into four sections: demographic information, usage of AI tools, perceived impact on academic performance, and challenges encountered in using AI tools. The responses gathered through this questionnaire formed the basis for the study's data analysis and interpretation

Section A: Demographic Information

Please tick (✓) the appropriate answer.

1. **Gender**

☐ Male
☐ Female

2. **Age Group**

☐ Under 20
☐ 20–24
☐ 25–29
☐ 30 and above

3. **Year of Study**

☐ Freshman
☐ Sophomore☐ Junior
☐ Senior

4. **Have you ever used Artificial Intelligence (AI) tools in your learning?**

☐ Yes
☐ No

Section B: Usage of AI Tools

6. Which of the following AI tools have you used for academic purposes? (You may tick more than one)

☐ ChatGPT
☐ Grammarly
☐ Google Bard
☐ Turnitin
☐ AI-based Learning Apps (e.g., Coursera, Khan Academy AI, Quizlet)
☐ Others (Please specify): _____

7. How frequently do you use AI tools for academic purposes?

☐ Daily
☐ Weekly
☐ Occasionally
☐ Rarely
☐ Never

8. For what purposes do you use AI tools? (Tick all that apply)

☐ Writing assignments
☐ Checking grammar/plagiarism
☐ Studying or revising

☐ Generating ideas or summaries
☐ Solving academic problems

Section C: Perceived Impact of AI on Academic Performance

Please indicate the extent to which you agree or disagree with the following statements.

(1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree)

Statement	1	2	3	4	5
9. AI tools help me understand complex academic concepts better.					
10. The use of AI tools has improved my academic writing skills.					
11. AI tools help me manage my study time more effectively.					
12. Using AI tools increases my confidence in completing assignments.					
13. My academic performance has improved since I started using AI tools.					
14. I rely too much on AI tools for my academic tasks.					
15. AI tools promote independent learning.					
16. AI-based feedback is more helpful than human feedback in some cases.					
17. There are risks of academic dishonesty when using AI tools.					
18. AI tools should be integrated into university learning platforms.					

Section D: Challenges of Using AI Tools

Please indicate the extent to which you agree or disagree with the following statements.

(1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree)

Statement	1	2	3	4	5
19. I am not fully aware of how to use AI tools effectively in my studies.					
20. Most AI tools require internet access, which is not always reliable for me.					
21. I worry that using AI tools might reduce my critical thinking or creativity.					
22. There is a lack of training or guidance on the ethical use of AI in academics.					
23. Some AI-generated content is inaccurate or misleading.					
24. My lecturers discourage or restrict the use of AI tools in learning.					
25. I find it difficult to evaluate whether the information from AI tools is reliable.					

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