



Assessment of Artificial Intelligence in Students' Research

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ABSTRACT

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This study examines the growing influence of artificial intelligence (AI) tools on student research in higher education, focusing on both their opportunities and challenges. AI-powered writing assistants, literature review platforms, citation generators, and data analysis tools are increasingly integrated into academic workflows. Findings show that these tools enhance efficiency and quality by automating repetitive tasks such as grammar checking, citation management, and data organization. Students reported positive impacts,

with weighted mean scores indicating agreement that AI improves clarity in writing (3.81), supports data analysis (3.71), and strengthens overall research quality (3.85). These opportunities allow learners to devote more time to higher-order skills such as critical analysis, argumentation, and creative idea generation. However, the study also highlights significant challenges. Students expressed concerns about limited training (3.65), difficulties in trusting AI-generated



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results (3.68), and the need for greater institutional support (3.70). Neutral responses regarding access barriers (3.28) and effective tool usage (2.97) suggest uneven readiness across the academic community. Ethical issues such as academic integrity, over-reliance on technology, and risks of unintentional plagiarism further complicate AI's role in research. The finding shows the underscore of the dual nature of AI in higher education: it offers powerful opportunities to enhance research productivity and learning outcomes, yet it also presents risks that must be carefully managed. The study concludes by recommending comprehensive institutional guidelines, targeted training programs, and ethical frameworks to ensure responsible integration of AI. By balancing technological innovation with the core values of scholarship, higher education institutions can maximize AI's benefits while safeguarding essential research competencies.

INTRODUCTION

The integration of artificial intelligence (AI) in higher education is rapidly reshaping the way students conduct academic research. AI tools such as writing assistants, citation generators, and data analysis platforms offer significant opportunities to improve efficiency, accuracy, and overall quality (Chui et al., 2018; Marr, 2020). By automating tasks like proofreading, organizing references, and analyzing large datasets, these technologies allow students to devote more time to higher-order skills such as critical analysis, argumentation, and creative idea generation.

In the ASEAN region, universities are beginning to explore AI's role in enhancing research productivity and teaching innovation. For example, studies in Malaysia and Singapore highlight how AI-powered platforms are being piloted to support literature reviews and data analysis, while Philippine institutions are experimenting with AI-driven learning management systems to improve student engagement. Despite these emerging initiatives, there remains limited empirical research on how students themselves perceive and integrate AI tools into their research workflows within the ASEAN context. At the same time, challenges accompany these opportunities. Concerns about academic integrity, plagiarism, and over-reliance on AI tools raise questions about the preservation of critical thinking and independent research skills (Ateeq et al., 2024; Cotton et al., 2024). Students may struggle with trusting the accuracy of AI-generated outputs or lack sufficient training to use these tools responsibly.

This study addresses a clear research gap by examining both the opportunities and challenges of AI integration in student research output, with a particular focus on higher education in the Philippines. By explicitly analyzing student

perceptions and experiences, the research contributes original insights into how AI can be responsibly integrated into academic practice in the ASEAN region. The findings aim to inform institutional policies, ethical frameworks, and training programs that balance technological innovation with the core values of scholarship.

REVIEW OF RELATED LITERATURE

Opportunities

Generative AI in education and research: Opportunities, concerns, and solutions

As exploring the rapidly evolving role of generative artificial intelligence (AI) in education and research, emphasizing both its transformative potential and the ethical dilemmas it presents (Alasadi and Baiz, 2023). The article outlines how AI is reshaping educational practices by enabling new modes of content creation, personalized learning, and efficient research processes. However, these advancements also raise significant concerns.

AI-assisted enhancement of student presentation skills: Challenges and opportunities

According to Chen et al. (2022) Many students, particularly those learning English as an additional language, struggle with confidence when presenting, while faculty members often find it hard to provide individualized feedback to large numbers of students. The study investigates an AI-assisted platform designed to give students more opportunities to practice presentations independently, without requiring direct faculty involvement.

Artificial Intelligence in studies—use of ChatGPT and AI-based tools among students in Ge

The Researchers investigated the use of AI-based tools, such as ChatGPT and GPT-4, among university students in Germany. Conducted through a nationwide survey, the study aims to analyze how students are utilizing these AI tools and explore key characteristics relevant to their academic needs. With over 6,300 student participants, the results reveal that nearly two-thirds of students use or have used AI-based tools in their studies, with ChatGPT and GPT-4 being the most mentioned tools. Engineering, mathematics, and natural science students report the highest usage rates. The study highlights that students primarily use AI tools to clarify their understanding of subject-specific concepts and to assist with explanations, illustrating the diverse ways AI is integrated into their academic work (Von Garrel and Mayer, (2023).

According to Velasco (2024), AI improves research efficiency by streamlining

tasks like information retrieval and data analysis, this allows students to spend less time on repetitive or administrative aspects of research and focus more on developing research questions, interpreting results, and drawing meaningful conclusions. Increasing student engagement and confidence through user-friendly AI assistance, especially those who may feel overwhelmed by the complexity of academic research, can benefit from AI-driven platforms that break down complex processes into manageable steps. Students who might otherwise struggle with the demands of academic research.

Based on the study by Xia et al. (2024) AI (GenAI) is generative that can transform assessment in higher education by benefiting students, teachers, and institutions. For students, it provides immediate, diverse, and unbiased feedback that supports self-directed and self-regulated learning. Teachers gain opportunities to innovate assessment methods and improve digital literacy/ At the institutional level, GenAI prompts policy updates, encourages interdisciplinary programs, and promotes AI literacy. Overall, GenAI enhances feedback, fosters innovation, and drives educational reform. GenAI is changing education by giving students quick and fair feedback, helping them learn independently. It allows teachers to try new assessment methods and boosts their tech skills. Schools also benefit by updating policies, encouraging cross-disciplinary learning, and increasing knowledge about AI.

Challenges

Many students face technical difficulties and lack proper training in how to use AI tools effectively. There are concerns about how students' over-reliance on AI, which could hinder the development of their critical thinking and independent research skills. Additionally, AI systems can produce inaccurate or misleading information, posing risks to the integrity of academic work losing comprehensive international policies and guidelines on AI usage further complicates its effective implementation. Students with varying levels of access to AI can exacerbate existing inequalities. These challenges underscore the need for careful consideration and strategic planning in integrating AI into student research activities.

Based on the study of Ocen et al. (2025), advances in artificial intelligence facilitate academic dishonesty, including fabrication of data and plagiarism. AI tools have led to falsification, fabrication, and plagiarism, posing dilemmas in maintaining ethical standards in research. The study also warns that over-reliance on AI may result in passive learning and diminish critical thinking skills among students. In addition, the lack of transparency in AI algorithms can result in misinterpretation of data, since researchers may not fully comprehend the decision-making processes behind these systems. These challenges underscore the need for the development of regulatory frameworks and ethical guidelines to ensure the responsible use of AI in student research

Exploring opportunities and challenges of artificial intelligence and machine learning in higher education institutions

Kuleto et al. (2021) examine the role of artificial intelligence (AI) and machine learning (ML) in higher education institutions (HEIs), focusing on their potential to improve educational efficiency and adapt to individual learners' needs. As digital technologies reshape how people learn and access information, AI and ML are increasingly seen as key drivers of innovation in education. Through literature review and a survey of 103 Serbian students, the study assesses awareness, usage, and perceptions of AI and ML in HEIs. Findings indicate that these technologies enhance student engagement, support collaborative learning, and offer a more accessible and responsive research environment. Statistical tools, including correlation and regression analysis, confirm the positive impact and highlight both opportunities and challenges of implementing AI and ML in academic settings.

Vision, challenges, roles and research issues of Artificial Intelligence in Education

As the researchers explore the evolving role of Artificial Intelligence in Education (AIED), highlighting how AI technologies can transform educational environments by offering personalized feedback, adaptive learning experiences, and data-driven decision support for teachers and policymakers. AIED applications leverage AI's ability to simulate human reasoning, enabling systems to make predictions, judgments, and tailored interventions to support diverse learning needs (Hwang et al., 2020). The paper also emphasizes the interdisciplinary challenges faced by researchers in integrating AI with educational theories and practices. To address this, the authors propose a framework that outlines how AIED can be implemented across various teaching and learning scenarios. And also, they identify ten key research areas—ranging from intelligent tutoring systems to ethical considerations in AI use—to guide future work in this emerging field. The study also provides direction on the types of contributions the journal seeks to promote ongoing advancement in AIED research.

The Challenges Involved in Implementing AI in the Education Field using MMA Method

Narkabilova et al. (2024) explore the challenges and potential of implementing artificial intelligence (AI) in education using the MMA (Model-Method-Approach) framework. The study emphasizes the value of Natural Language Processing (NLP) and machine learning in enhancing students' reading comprehension and writing through personalized, AI-powered systems. Tools such as automated essay scoring and real-time feedback applications provide students with instant, individualized support, helping foster deeper engagement with learning materials. Intelligent Tutoring Systems (ITS) further personalize learning, contributing to a more inclusive and equitable literacy education. The

paper also discusses the role of AI in addressing issues related to information and communication technologies, social justice, and inclusive education.

FRAMEWORK

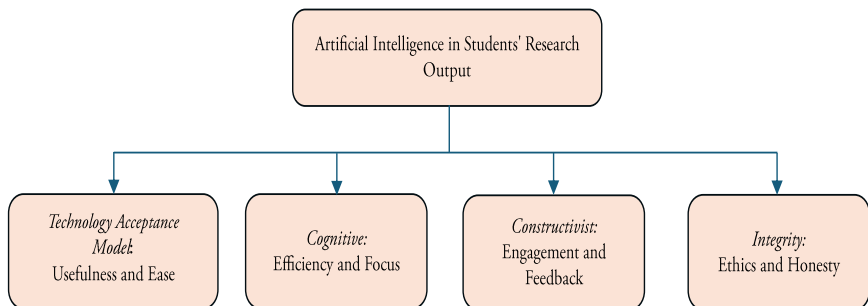
This study is grounded in several contemporary theories that explore the intersection of technology and learning in higher education. One key theoretical framework applied is the Technology Acceptance Model (TAM), which was developed by Davis (1989) and later extended in the context of AI. According to TAM, students' acceptance of technology, including AI tools, depends on two primary factors: perceived ease of use and perceived usefulness (Venkatesh et al., 2012).

Another relevant framework is Cognitive Load Theory (Sweller, 1988), which argues that individuals have a limited capacity for processing information. AI tools in research could help alleviate cognitive overload by automating time-consuming tasks like literature reviews and data management, thereby allowing students to focus more on higher-order cognitive processes such as critical thinking and content creation.

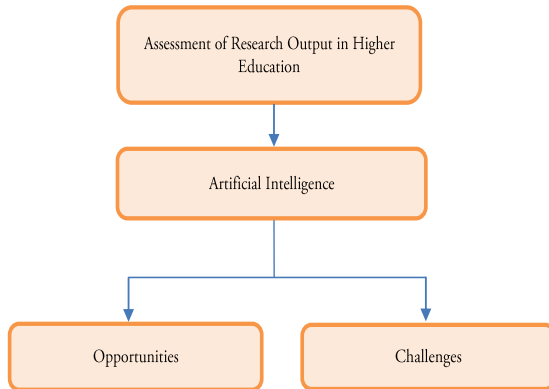
The Constructivist Learning Theory (Piaget, 1973), which posits that learners actively construct their knowledge through experiences, also underpins this study. AI tools support students' active learning by providing dynamic, personalized feedback and resources, enabling them to engage more deeply with research topics.

Finally, Academic Integrity Theory (Whitley, 1998) provides an important framework for understanding the ethical challenges of using AI in research. As AI tools become more integrated into the research process, concerns about plagiarism, authorship, and the responsible use of AI arise.

Figure 1



Each pillar interacts with the core construct: Effective, ethical, and engaging use of AI to improve student research outcomes.

Figure 2

The paradigm for assessing student research output in higher education using Artificial Intelligence (AI) highlights both the opportunities and challenges students encounter throughout their research journey. AI presents vast opportunities by enhancing research efficiency, offering real-time feedback, simplifying complex tasks like data analysis, and promoting personalized learning experiences. However, it also introduces challenges such as ethical concerns, overdependence, potential misuse (e.g., plagiarism), and questions about authorship and originality. This paradigm provides a holistic lens to evaluate how AI tools influence students' research processes—improving productivity and engagement while also necessitating responsible and informed usage to uphold academic standards.

STATEMENT OF THE PROBLEM

The research study, specifically, seeks to (1) examine the impact of AI-powered tools, such as writing assistants and citation generators, on the quality and efficiency of student research outputs in higher education, (2) identify the opportunities that AI offers to students in enhancing their research processes, including literature reviews, data analysis, and academic writing, and (3) analyze the challenges students encounter when integrating AI tools into their research workflows and to determine the institutional support and resources needed to address these challenges.

SIGNIFICANCE OF THE STUDY

Students – will help them to Understand limitations and risks of over-reliance on AI in academic work and learn to use AI ethically and effectively to enhance research quality

Faculty- will improved their ability to guide students in using AI tools responsibly and enhanced their strategies for evaluating research originality and academic integrity.

Higher Education Institution - it will support them in updating academic integrity guidelines and research protocols and improved institutional readiness for integrating AI into teaching and research.

Educational Technology Developers - will give them the opportunities to develop features that align with educational ethics and research goals.

Scope and Limitations

This study aims to assess the impact of Artificial Intelligence (AI) tools on student research output at the University of Caloocan City. It focuses on evaluating both the opportunities and challenges that AI presents in academic research processes. The research involves 100 student participants from various colleges within the university, including disciplines such as education, business, computer studies, and social sciences. The study explores how students use AI tools across different stages of the research process, including topic development, writing, data analysis, and editing.

The study is limited to a single institution and a relatively small sample size, which may not fully represent the broader student population of the university or reflect AI usage trends in other educational settings. The findings rely on self-reported data, which may be subject to biases or inaccuracies in recalling AI tool usage.

METHODOLOGY

Research Design

This study adopts a descriptive quantitative research design to systematically assess and measure the use of Artificial Intelligence (AI) tools in the research output of students at the University of Caloocan City. The purpose of this design is to describe the current status, behaviors, perceptions, and challenges related to AI usage among students, based on observable and measurable data collected from a defined population. Descriptive research is appropriate because it does not manipulate variables but instead seeks to observe, record, and analyze existing conditions. Through this approach, the researcher can quantify patterns in students' engagement with AI technologies in academic research—such as frequency of use, types of tasks supported, and perceptions of effectiveness and ethical implications.

Participants

The target population consists of students from different colleges within the University of Caloocan City. A sample size of 100 students will be selected

through purposive sampling to ensure representation across different disciplines and year levels.

Ethical Considerations

With this proposal, the researcher will submit an application for ethical review before the Office of Research Coordination. The main objective of the study will be relayed and explained to the respondents, and their anonymity will be guaranteed. Responses will be treated with utmost confidentiality and appropriated for this research only.

Respondents' participation will be voluntary: they may or may not participate in the survey. They may withdraw their participation at any time, and whatever data they have provided will be returned to them or destroyed.

Instrumentation

The primary research instrument is a structured survey questionnaire designed to collect quantitative data from students of the University of Caloocan City regarding their use and perception of Artificial Intelligence (AI) in academic research.

The questionnaire employs various types of 5-point Likert scales to measure different dimensions of student experience. To assess the frequency of AI usage, a scale ranging from Always to Never is used, allowing participants to indicate how often they utilize AI tools during specific research activities. To evaluate the perceived impact or effectiveness of AI in their academic work, a scale from Highly Significant to Not at All Significant is applied.

This enables the researcher to determine how students perceive AI's role in enhancing research quality, efficiency, or understanding of complex topics. Finally, to capture students' attitudes and beliefs, a scale from Strongly Agree to Strongly Disagree is used for statements related to ethical concerns, academic integrity, and trust in AI tools. These Likert scales provide a standardized and reliable way to quantify student responses, allowing for clear statistical analysis and comparison across various academic disciplines and year levels (Fink, 2017; Tavakol & Dennick, 2021).

Data Gathering Procedure

After finalizing the data collection methods and constructing the survey questionnaire, the researchers will proceed to gather participants for the study entitled *Assessment on Student Research Output with Artificial Intelligence: Opportunities and Challenges in Higher Education.* The sample will consist of students from various colleges at the University of Caloocan City. Once the target number of respondents has been identified, the researchers will seek their consent and confirm their willingness to participate in the study. A brief orientation will be conducted to explain the objectives of the research, the importance of their responses, and the procedures involved in completing the survey. Participants

will be provided with a Google Form link containing an informed consent form, which must be filled out before accessing the actual survey questionnaire. Although the survey is administered digitally, the data collection process will be conducted face-to-face in each class or section to ensure that only the intended student respondents are accessing and answering the form.

Data Analysis

In this study titled “Assessment on Student Research Output with Artificial Intelligence: Opportunities and Challenges in Higher Education,” data gathered from 100 student respondents at the University of Caloocan City will be analyzed using quantitative methods. To provide a clear summary of the results, the researchers will employ descriptive statistics such as frequency and percentage to describe the demographic profile of the respondents and to show how often students use specific AI tools in their research. In addition, the weighted mean will be used to determine the average level of perception among students regarding the benefits, challenges, and ethical implications of using AI in academic research, based on their responses to statements rated on a 5-point Likert scale.

The assessment of the respondents was rated based on a five-point Likert scale found in Table 1, 2, and 3.

Table 1

Scale	Verbal Description
5	Always
4	Often
3	Sometimes
2	Rarely
1	Never

Table 2

Scale	Verbal Description
5	Very Significant
4	Significant
3	Moderately Significant
2	Slightly Significant
1	Not at all Significant

Table 3

Scale	Verbal Description
5	Strongly Agree
4	Agree
3	Neutral
2	Disagree
1	Strongly Disagree

Table 4, 5, and 6 was used as the verbal description of the numerical options in the questionnaire that the respondents will answer. This helped Asses the Student Research Output with Artificial Intelligence Opportunities and Challenges in Higher Education.

Table 4

Scale	Range	Verbal Description
5	4.20 -5.00	Always
4	3.40 - 4.19	Often
3	2.60 – 3.39	Sometimes
2	1.80 – 2.59	Rarely
1	1.00 – 1.79	Never

Table 5

Scale	Range	Verbal Description
5	4.20 -5.00	Very Significant
4	3.40 - 4.19	Significant
3	2.60 – 3.39	Moderately Significant
2	1.80 – 2.59	Slightly Significant
1	1.00 – 1.79	Not at all Significant

Table 6

Scale	Range	Verbal Description
5	4.20 -5.00	Strongly Agree
4	3.40 - 4.19	Agree
3	2.60 – 3.39	Neutral
2	1.80 – 2.59	Disagree
1	1.00 – 1.79	Strongly Disagree

RESULTS AND DISCUSSION

This part of the research includes analyzing and interpreting data for each research question from the questionnaire.

Introduction, Graph, Analysis, and Interpretation

Table 7

Demographic Profile of the Respondents

Year in College	Students	Percentage
First Year	9	9%
Second Year	79	79%
Third Year	10	10%
Fourth Year	2	2%
Total	100	100%

Table 7 shows that data reveals a clear concentration of respondents in the second year of college, with 79% of students identifying as second-year students. This dominant percentage indicates that the survey or study was primarily represented by individuals at this stage in their academic journey, which could significantly influence the overall results and insights. First-year students make up 9%, suggesting a relatively small group who are still in the early stages of adapting to college-level academic work and tools. Third-year students account for 10%, showing a slightly larger, yet still limited, representation of more advanced undergraduates. Lastly, fourth-year students constitute only 2% of the total, indicating minimal participation from those nearing graduation. Overall, the participant pool is heavily skewed toward second-year students, which may reflect either the target demographic of the survey or the level of accessibility and responsiveness among students at this academic level.

Table 8

Frequency of usage	Students	Percentage
Less than 1 hour per week	23	23%
1-2 hours per week	36	36%
3-4 hours per week	26	26%
More than 4 hours per week	14	14%
No time save	1	1%
Total	100	100%

Table 8 shows data that the majority of students use AI-powered tools for research-related tasks to varying degrees each week. The most common usage range is 1–2 hours per week, reported by 36% of students, followed by 3–4 hours at 26%, and less than 1 hour at 23%. A smaller group, 14%, reported using these tools for more than 4 hours per week, indicating a more intensive level of engagement. This distribution suggests that while most students are incorporating AI tools into their routines, the time spent varies, with moderate use being the most typical. The total confirms that 100% of respondents reported some level of engagement, highlighting that AI tools are now a regular part of students’ academic practices.

PROBLEM 1: How do AI-powered tools, such as writing assistants and citation generators, impact the quality and efficiency of student research outputs in higher education?

Table 9

Statement Indicator	Mean	Verbal Interpretation
How often do you use AI-powered writing assistants/tools for your research?	3.31	Sometimes
How often do AI-powered writing assistants improve the quality of your written research papers? (e.g., grammar checkers, style editors)	3.99	Often
How often do AI-powered citation generators save you time in preparing research citations and bibliographies?	3.51	Often
How often do AI tools help you complete research tasks more efficiently? (writing assistants, citation generators, etc.)	3.68	Often
How often do you rely on AI-powered tools to enhance the clarity and coherence of your research papers?	3.38	Sometimes
How often do AI-powered tools increase your confidence in the accuracy and quality of your research output?	3.68	Often
Overall Weighted Mean	3.59	Often

Table 9 shows that based on the data presented, the overall use and perception of AI-powered tools in research appear to be generally positive, with an overall weighted mean of 3.59, verbally interpreted as “Often.” When it comes to the actual usage of AI writing assistants, the mean score of 3.31 (“Sometimes”) suggests that while these tools are being adopted, they are not yet an integral part of every researcher’s workflow. However, when used, their impact on quality is significant, as indicated by a high mean of 3.99 (“Often”), showing that users find them helpful in improving grammar, style, and the overall polish of their papers. Similarly, AI citation generators are frequently relied upon, with a mean of 3.51, suggesting they are valued for saving time and simplifying citation tasks. In terms of overall efficiency, AI tools appear to play an important role, with a mean of 3.68 (“Often”), reflecting their contribution to streamlining various research processes. Nonetheless, when it comes to enhancing the clarity and coherence of research writing, the mean drops slightly to 3.38 (“Sometimes”), indicating that while AI tools provide assistance, researchers may still rely heavily on their own judgment for higher-order writing tasks.

Finally, the confidence boost AI tools give researchers in terms of accuracy and quality is evident, again with a strong mean of 3.68. Collectively, these findings highlight that while full integration is still evolving, AI tools are becoming trusted companions in academic research, particularly for improving efficiency and output quality.

The overall weighted mean of 3.59, interpreted as “Often,” reflects a generally positive perception and consistent usage of AI-powered tools among researchers. This score indicates that, on average, users frequently incorporate AI

tools into their research activities, finding them beneficial across various aspects of the research process. The rating suggests that while AI has not yet become a universal or indispensable component of every researcher's workflow, it is widely recognized for its practical value—particularly in improving writing quality, saving time with citations, and enhancing confidence in the final output. The “Often” interpretation of the overall mean emphasizes a growing reliance on AI technologies, pointing to a trend where these tools are becoming more integrated into academic routines, aiding efficiency, productivity, and quality in research tasks.

Table 10

Statement Indicator	Mean	Verbal Interpretation
To what extent do you feel AI-powered tools improve the efficiency of your research process?	3.71	Significant
Has the use of AI tools helped you meet deadlines more effectively?	4.09	Significant
Overall Weighted Mean	3.90	Significant

Table 10 shows a significant positive impact of AI-powered tools on students' research productivity and time management. With a mean score of 3.71, the first statement shows that students perceive AI tools as significantly improving the efficiency of their research process—helping them work faster and more effectively through tasks such as writing, editing, and organizing information. Even more compelling is the mean of 4.09 for the second statement, suggesting that AI tools are especially beneficial in helping students meet deadlines. This reflects a strong belief that AI assists in managing time better and reducing the stress associated with tight academic schedules. The overall weighted mean of 3.90, interpreted as “Significant,” reinforces the conclusion that AI-powered tools play a meaningful and beneficial role in enhancing both the efficiency and timeliness of students' research work.

PROBLEM 2: What are the main opportunities AI offers to students in terms of improving their research processes, including literature reviews, data analysis, and academic writing?

Table 11

Statement Indicator	Mean	Verbal Interpretation
AI tools help me analyze large datasets more quickly and accurately, enhancing the quality of my research.	3.88	Agree
AI-powered writing assistants significantly improve the clarity and quality of my academic writing.	3.81	Agree
AI-powered tools significantly improve the efficiency of conducting literature reviews for my research	3.59	Agree
Using AI tools for data analysis reduces the amount of time I spend on repetitive tasks during my research process.	3.71	Agree
AI tools help me better organize and structure my research papers, leading to improved overall writing quality	3.85	Agree
Overall Weighted Mean	3.768	Agree

Table 11 shows that respondents generally have a positive perception of AI tools in the context of their research work. All five statement indicators received mean scores between 3.59 and 3.88, which fall under the “Agree” category. The highest-rated item, with a mean of 3.88, suggests that most respondents believe AI tools help them analyze large datasets more quickly and accurately—ultimately improving the quality of their research. Similarly, AI-powered writing assistants were seen as helpful in enhancing the clarity and quality of academic writing (mean = 3.81) and in organizing and structuring research papers (mean = 3.85). Even though the statement about improving literature review efficiency received the lowest score (mean = 3.59), it still reflects general agreement among respondents. Overall, the weighted mean of 3.768 supports the conclusion that AI tools are viewed as valuable resources for streamlining research processes and improving academic output.

PROBLEM 3: What challenges do students face when integrating AI tools into their research workflows, and what institutional support or resources are needed to overcome these challenges?

Table 12

Statement Indicator	Mean	Verbal Interpretation
I face difficulties in understanding how to effectively use AI tools in my research	2.97	Neutral
Limited access to AI-powered tools (e.g., software, platforms) is a significant barrier to integrating them into my research workflow.	3.28	Neutral
I lack sufficient training or resources on how to use AI tools for data analysis, literature review, and academic writing.	3.65	Agree
I find it challenging to trust the accuracy and reliability of AI-generated results in my research.	3.68	Agree
My institution should provide more support (e.g., workshops, tutorials, access to AI tools) to help students integrate AI into their research workflows effectively.	3.70	Agree
Overall Weighted Mean	3.46	Agree

Table 12 reveals a perspective on the challenges associated with integrating AI tools into academic research. The overall weighted mean of 3.46 falls within the verbal interpretation of “Agree,” indicating that while users generally acknowledge the presence of barriers, the extent of these challenges varies across specific areas.

Notably, the highest-rated statements pertain to institutional support and trust in AI-generated outputs. Respondents agree that their institutions should play a more active role in facilitating AI integration through initiatives such as workshops, tutorials, and better access to AI tools (mean = 3.70). This suggests a clear demand for structured and institutionalized learning opportunities. Furthermore, concerns about the accuracy and reliability of AI-generated results (mean = 3.68) reflect an underlying skepticism, which could stem from limited exposure or a lack of familiarity with the capabilities and limitations of AI technologies.

The third statement, with a mean of 3.65, also received agreement, highlighting that insufficient training or lack of resources is a major obstacle. This indicates that many students and researchers may feel unprepared or inadequately equipped to fully leverage AI in research-related tasks such as data analysis, literature reviews, and academic writing.

Meanwhile, the first two statements received neutral responses. The difficulty in understanding how to use AI tools effectively (mean = 2.97) and the perception of limited access to AI-powered platforms (mean = 3.28) reflect mixed experiences. While some respondents may not face significant issues in these areas, others do, leading to a balanced average. This neutrality could imply that understanding and access are not universal barriers, but they still affect a substantial portion of users.

CONCLUSION

Based on the findings in Tables 9.0 and 10.0, AI-powered tools are shown to have a generally positive and growing role in academic research. Researchers and students alike recognize their value, particularly in improving writing quality, streamlining citation tasks, and boosting overall efficiency. While these tools are not yet fully embedded in every academic workflow, they are increasingly trusted for their practical support. AI writing assistants help polish grammar and structure, while citation generators reduce the time and effort needed for proper referencing. Students, in particular, report a significant improvement in research productivity and time management. The tools help them work more efficiently and meet deadlines more consistently, reducing academic stress and improving output quality.

The data presented in Table 11 indicate that respondents hold a generally positive perception of AI tools in relation to their research work. All indicators fall under the “Agree” category, reflecting a shared belief in the usefulness and reliability of AI in academic settings. The highest-rated perception is that AI tools effectively assist in analyzing large datasets more quickly and accurately, which is seen as a key factor in enhancing the overall quality of research. Respondents also find AI-powered writing assistants beneficial for improving clarity, structure, and the overall presentation of academic papers, making the writing process more efficient and refined. Even in areas where the impact was rated slightly lower, such as improving the efficiency of literature reviews, the agreement remains consistent, suggesting that AI still offers meaningful support. Overall, the weighted mean underscores the conclusion that AI tools are considered valuable aids in streamlining research activities, increasing productivity, and supporting the production of higher-quality academic output.

Table 12 highlights that while users generally agree there are challenges in integrating AI tools into academic research, the nature and extent of these challenges vary. The strongest concerns relate to the need for greater institutional support and structured training, as well as skepticism about the accuracy and reliability of AI-generated outputs. Respondents also pointed to a lack of resources and training as significant barriers, suggesting that many feel underprepared to use AI effectively.

RECOMMENDATION

Universities should create specific policies on the acceptable use of AI tools in student research, addressing issues of plagiarism, academic integrity, and responsible technology use. These guidelines should be easily accessible and understandable to students and faculty.

Promote a strong ethical framework needed to guide the use of AI in research. This framework should incorporate principles of transparency, accountability,

and fairness, ensuring that AI tools are used ethically and responsibly.

Implement targeted educational initiatives: Universities should offer training and workshops to students and faculty on the ethical and effective use of AI in research. This training should cover topics such as identifying plagiarism, evaluating the reliability of AI-generated content, and developing critical thinking skills in conjunction with AI tools.

Promote a balanced approach where it is ideal to integrate AI tools strategically, supporting but not replacing essential research skills. Focus should remain on developing critical thinking, independent research, and original thought.

Create a model for responsible AI integration. The Universities should develop a model for responsible AI integration that balances the benefits of technology with the core values of academic scholarship. This model should be regularly reviewed and updated to reflect advancements in AI technology and best practices in academic research.

LITERATURE CITED

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