

STUDENT PERCEPTIONS OF AI IN UNIVERSITY STUDIES

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ABSTRACT

The integration of artificial intelligence (AI) in higher education is transforming students' learning experiences, decision-making, and academic efficiency. This study explores student perceptions of AI's benefits, challenges, and its role across academic disciplines. Findings indicate that while students recognize AI as a valuable educational tool, they also express concerns regarding privacy, reliance, and the need for improved AI training. Statistically significant differences were observed in AI's impact on learning efficiency, decision-making, and academic engagement, supporting the hypothesis that AI enhances education but presents notable challenges. The study also highlights the necessity for balanced AI integration, ensuring that AI complements rather than replaces critical thinking and independent learning. These insights provide valuable implications for educators and institutions in developing AI policies that optimize learning outcomes while addressing numerous concerns.

INTRODUCTION

Artificial intelligence (AI) has rapidly emerged as a transformative force in higher education, reshaping traditional learning methods and academic environments. As universities increasingly integrate AI into various aspects of instruction and administration, students are experiencing both the benefits and challenges of these technologies. AI applications such as personalized learning platforms, automated grading systems, and virtual tutors have demonstrated their potential to enhance learning efficiency, engagement, and decision-making processes.

However, the widespread adoption of AI in education also raises concerns about data privacy, over-reliance, and the need for adequate training to ensure effective utilization. While some students readily embrace AI as an essential learning tool, others remain skeptical about its impact on critical thinking and independent learning. Given these divergent perspectives, it is essential to

examine how students perceive AI's role in their education, the challenges they encounter, and the extent to which AI supports or hinders their academic progress.

This study aims to explore student attitudes toward AI integration in university education, addressing key research questions related to AI's perceived benefits, limitations, and ethical implications. By analyzing student experiences across different disciplines, this research seeks to provide insights into how AI can be leveraged to improve learning outcomes while mitigating potential drawbacks. The findings will help inform educators and policymakers on best practices for AI integration in higher education, ensuring that AI technologies are implemented in a way that enhances rather than diminishes the educational experience.

LITERATURE REVIEW

The use of artificial intelligence (AI) in higher education has seen rapid growth, with AI being integrated into various aspects of university studies, including personalized learning, academic support, and administrative processes. Research indicates that AI technologies are becoming a fundamental part of university education, providing both opportunities and challenges for students and institutions alike (Holmes et al., 2023).

A systematic review by Holmes et al. (2023) analyzed 138 articles published between 2016 and 2022, highlighting the growing adoption of AI in educational settings. The study found that AI applications in higher education range from personalized learning platforms to automated grading systems and administrative support, significantly enhancing student engagement and institutional efficiency. Additionally, AI-driven tools such as chatbots and virtual tutors have been increasingly used to support students in their studies.

Studies have explored student perspectives on AI integration in academia. Kilianova et al. (2025) conducted a survey involving 378 university students and found that many students regularly use AI-based tools in their studies, expressing positive attitudes towards AI's role in facilitating learning. The study emphasized AI's transformative potential in improving educational outcomes, particularly in fields that require adaptive learning techniques. Similarly, Lee and Davis (2024) investigated the impact of generative AI in university-level English courses, demonstrating that AI-enhanced instruction improved student motivation, confidence, and interest in learning English as a foreign language.

Despite its advantages, AI integration in university studies presents several challenges. One major concern is data privacy, as AI tools often collect and analyze large amounts of personal information. Students may be wary of how their data is used and whether adequate protections are in place (Beshr et al., 2024). Another issue is algorithmic bias, where AI systems trained on biased data can perpetuate inequalities and lead to unfair academic outcomes (Uddin, 2024). Additionally, students risk becoming overly reliant on AI, potentially obstructing their critical thinking and problem-solving abilities. Slimi (2023) warns that dependence on AI tools may reduce students' ability to learn independently and engage deeply with course material. Ethical and pedagogical

concerns also arise regarding AI's role in education, particularly the risk of AI replacing human educators in key aspects of teaching and mentorship (Galdames, 2024).

Some of the concerns about the integration of AI in education parrot those raised when calculators first made their way into classrooms. Initially, the introduction of calculators sparked hesitation, as the technology was not yet fully understood, nor were teachers confident in its application. There was also uncertainty about how it might impact students. Many educators feared that relying on calculators before mastering basic arithmetic could impede students' ability to retain fundamental mathematical skills. However, as calculators gained widespread acceptance and proved to be an effective tool, educators inevitably adapted to their presence (Banks, 2011).

As educators and institutions incorporate AI into the curriculum many are addressing these challenges by implementing policies and training programs. Universities are developing clear AI policies to regulate ethical AI use, ensuring fairness and data security (Nguyen, 2025). AI ethics courses are being embedded into curricula to educate students about data privacy, bias, and the societal implications of AI (Jose & Jose, 2024). Faculty members receive ongoing training to integrate AI tools responsibly into their teaching practices. Ensuring equitable access to AI technologies for all students, regardless of socioeconomic background, remains a key focus, with institutions working to bridge the digital divide and enhance accessibility for students with disabilities (Nguyen, 2025).

As AI continues to evolve, its role in university studies will likely expand, requiring educators and policymakers to balance innovation with ethical considerations. Future research should focus on refining AI applications in education while addressing concerns related to fairness, transparency, and data security.

AI's Role in Higher Education: Student Perceptions and Decision-Making

Artificial intelligence (AI) has become an increasingly influential tool in higher education, shaping student learning experiences, academic decision-making, and career readiness. Many university students believe that AI should be an integral part of their education, recognizing its potential to enhance learning outcomes and future job prospects (Nguyen, 2025). However, concerns about over-reliance, ethical implications, and disparities in AI literacy continue to shape discussions on AI's role in academia (Holmes et al., 2023).

Research suggests that students value AI for its ability to facilitate personalized learning. AI-driven systems can tailor educational content to individual needs, adjusting to learning pace and style to improve comprehension and retention (Holmes et al., 2023). AI-powered tutoring platforms and adaptive assessments provide immediate feedback, allowing students to refine their academic strategies in real time (Slimi, 2023). These innovations help students grasp complex subjects more effectively, particularly in STEM fields, where AI tools support data analysis, problem-solving, and simulations (Galdames, 2024).

Beyond academic performance, AI also influences student decision-making by providing data-driven insights. AI systems analyze large datasets to generate personalized recommendations for study techniques, course selections, and career pathways, empowering students to make more informed educational choices (Galdames, 2024). AI-driven simulations and decision-making tasks encourage students to engage in higher-order thinking and problem-solving (Nguyen, 2025).

Many students view AI as a valuable addition to their education. A study by Nguyen (2025) found that students appreciate the efficiency gains and innovative potential AI brings to learning environments. However, disparities in AI literacy persist, with many students feeling unprepared to navigate AI's full potential. According to Al Zaidy (2024), only 5% of students reported full awareness of their institution's AI guidelines, while 72% expressed a desire for more AI-related coursework.

Despite its benefits, AI integration presents notable challenges. Over-reliance on AI tools may delay independent learning and critical thinking skills, as students may become dependent on AI-generated responses rather than developing their own analytical abilities (Slimi, 2023). Ethical concerns such as algorithmic bias and data privacy remain critical issues (Uddin, 2024). The perception that peers are more proficient in AI use can also contribute to academic pressure and self-doubt (Kim et al., 2025).

A study by Gerlich (2025) found a significant negative correlation between frequent AI tool usage and critical thinking abilities. Similarly, Basha (2024) highlighted that over-reliance on AI can impede the development of foundational skills, critical thinking, and problem-solving abilities. To address these concerns, universities are improving AI literacy through structured educational programs and policy frameworks. Institutions are embedding AI ethics into curricula, training faculty to integrate AI responsibly, and ensuring equitable access to AI tools (Nguyen, 2025). Educators emphasize human-AI collaboration, ensuring that AI complements rather than replaces traditional learning methods (Jose & Jose, 2024).

PROBLEM STATEMENT

The integration of artificial intelligence (AI) in education is rapidly evolving, impacting students' learning experiences, decision-making, and academic efficiency. While AI tools offer significant advantages, such as improved learning outcomes and efficiency, they also present challenges, including privacy concerns, limitations in application, and the need for adequate training. Despite the growing role of AI in education, there is a need to assess students' perspectives on its benefits, challenges, and appropriate implementation across various disciplines. Understanding these perspectives will help educators and institutions develop strategies for AI integration that enhance learning while addressing concerns about reliance, critical thinking, and ethical considerations.

HYPOTHESIS AND NULL HYPOTHESES

Hypothesis (H₁ - Alternative Hypothesis):

The integration of AI in education significantly enhances students' learning experiences, decision-making, and academic efficiency, while also presenting challenges such as privacy concerns, over-reliance, and the need for better training.

Null Hypotheses (H₀):

1. H₀₁: The use of AI in education does not significantly improve students' learning experiences, decision-making, or academic efficiency.
2. H₀₂: Students do not perceive significant challenges, such as privacy concerns, over-reliance, or lack of training, in integrating AI into their studies.
3. H₀₃: The presence of AI in education does not have a measurable effect on students' critical thinking, engagement, or learning across different academic disciplines.

These hypotheses will help guide the research by examining the impact, benefits, and challenges of AI integration in education.

Research Questions

1. How do students perceive the benefits and limitations of AI in their studies, and what factors influence their adoption of AI tools?
2. What are the primary challenges students face when integrating AI into their academic work, including concerns about privacy, security, and reliance on AI?
3. How does the use of AI in education impact students' critical thinking, decision-making, and engagement across different academic disciplines?

METHODOLOGY

Students in health and wellness classes were surveyed about their experiences with and attitudes toward artificial intelligence (AI). Participants were asked to rate 15 statements using a four-point

Likert scale: *Strongly Disagree, Disagree, Agree, Strongly Agree, and Unknown/Uncertain*. The survey statements are found in Table 5.

The collected responses were analyzed using ChatGPT (OpenAI, 2023) to identify trends and patterns in student perceptions and for hypothesis testing. A t-test was conducted to determine whether the differences in responses were statistically significant.

RESULTS

The statistical analysis explores the significance of student perceptions regarding AI in education. T-tests were conducted to determine whether student responses significantly deviated from a neutral position. The results highlight key insights into students' AI adoption, the benefits and limitations they experience, and the concerns they hold regarding AI implementation in education. Significant findings demonstrate student agreement with AI's role in improving learning efficiency while also acknowledging privacy and usability concerns. Mixed responses in certain areas indicate ongoing uncertainties about AI's future role and its effectiveness across academic disciplines.

The subsequent sections will provide a detailed breakdown of demographic statistics and hypothesis testing results, offering a comprehensive perspective on the integration of AI in higher education.

Descriptive Statistics: Demographics Report

A total of 38 students responded to the survey. The following tables summarize key demographic characteristics, including gender distribution, age statistics, major categories, and academic standing.

TABLE 1: GENDER STATISTICS

Gender	Count
Male	11
Female	18
Other	3
Total Responded	32

This table presents the gender distribution among the 32 students who provided their gender identity. The table includes counts for students who identified as male, female, and other, along with the total number of responses received.

TABLE 2: AGE STATISTICS

Statistic	Value
Minimum Age	18.0
Maximum Age	24.0
Average Age	19.76

This table summarizes the age distribution of the students who participated in the survey. It includes the minimum and maximum ages reported, as well as the average age of the respondents.

TABLE 3: MAJORS DISTRIBUTION

Major Category	Count
Undecided	5
Business	2
Healthcare	10
Science & Technology	11
Fine Arts & Humanities	5
Social Sciences	5
Education	0

This table displays the distribution of students across various major categories. The table includes the number of students in each category, showing that Science & Technology and Healthcare have the highest enrollment, while no students reported being in the Education category.

TABLE 4: YEAR IN SCHOOL

Year in School	Count
Freshman	23
Sophomore	11
Junior	2
Senior	0
Total Responded	36

This table provides a breakdown of students based on their academic year. Among the 36 students who provided this information, the majority were freshmen, followed by sophomores. Only two students were juniors, and no seniors were reported.

Inferential Statistics

T-tests were used for hypothesis testing and to evaluate statistical significance. The t-test results are displayed for each of the 15 statements, assessing whether their mean significantly differs from a neutral value of 2.0. The T-Statistic represents the difference between the sample mean and 2.0, while the P-Value determines statistical significance. Typically, a p-value less than 0.05 suggests a significant difference, indicating that the statement's mean is unlikely to have occurred by chance.

TABLE 5: T-TEST RESULTS

	t-statistic	p-value
1. I use AI tools in my studies or coursework.	2.633913438213190	0.01224978994370850
2. AI technology is frequently integrated into my studies.	-0.9726369966604850	0.3370498299660710
3. AI provides benefits in my education, such as improving efficiency and learning outcomes.	6.28203223231253	2.60863403535201E-07
4. I have encountered challenges or limitations when using AI in my academic activities.	3.340468553770590	0.0019198529595327300
5. AI impacts my understanding and decision-making in my studies.	-1.0000000000000000	0.32380587235541800
6. AI has significantly improved my learning experience.	-0.8820642738358530	0.38343674376445000
7. I have received training or preparation for integrating AI tools into my studies.	2.058050624898530	0.04668088322613000
8. AI will play a growing role in the future of education.	0.4601424174634080	0.6481067851704170
9. I have concerns about privacy and security in relation to AI use in education.	2.2956663052621200	0.02746092747241220
10. AI tools available for students could be improved.	2.051726306875100	0.04732399873214020

11. My peers frequently use AI in studying topics.	-3.2222222222222200	0.0026539737026448700
12. AI should be an integral part of education for students.	-0.1580604932101700	0.8752686378834310
13. AI is used across different academic disciplines to enhance my learning experience.	0.4328908466198210	0.6676071089579400
14. I balance the use of AI with critical thinking and judgment in my coursework.	3.4029207755554700	0.001614928366313090
15. Certain areas within my studies should not rely on AI applications.	8.453570674150490	3.6219538212826E-10

Based on the t-test results, here are key interpretations for each statement:

Statement 1, “I use AI tools in my studies or coursework,” has a t-statistic of 2.63 and a p-value of 0.012, which is below the standard significance level of 0.05. This indicates a statistically significant difference from the neutral/disagree response of 2. The positive t-statistic suggests that participants tend to agree more than disagree with this statement, implying that AI tools are commonly used by students in their academic work.

Statement 2, “AI technology is frequently integrated into my courses,” has a t-statistic of -0.97 and a p-value of 0.337, which is greater than 0.05. This suggests that there is no statistically significant difference from the neutral/disagree response of 2, indicating that opinions on AI integration in courses are mixed or neutral.

Statement 3, “AI provides benefits in my education, such as improving learning efficiency,” shows a t-statistic of 6.28 and a p-value of 0.0000002608, which is well below 0.05. The extremely low p-value indicates a highly significant difference, and the high positive t-statistic suggests strong agreement among participants that AI provides benefits in education.

Statement 4, “I have encountered challenges or limitations when using AI in my studies,” has a t-statistic of 3.34 and a p-value of 0.0019, both of which indicate a statistically significant difference from 2. The positive t-statistic suggests that students tend to agree that they have faced challenges while using AI in their studies.

Statement 5, “AI impacts my understanding and decision-making in education,” presents a t-statistic of -1.00 and a p-value of 0.324, which is greater than 0.05. This implies that there is no statistically significant difference from neutral, meaning students are divided or uncertain about AI’s impact on their understanding and decision-making.

Statement 6, “AI has significantly improved my learning experience,” has a t-statistic of -0.88 and a p-value of 0.383, which is above 0.05. This suggests that there is no statistically significant

difference, indicating that students are generally neutral or divided on whether AI has significantly improved their learning experience.

Statement 7, “I have received training or preparation for using AI in my studies,” has a t-statistic of 2.06 and a p-value of 0.047, which is slightly below 0.05. This indicates a statistically significant difference from 2, and the positive t-statistics suggest that students tend to agree that they have received training or preparation for using AI.

Statement 8, “AI will play a growing role in the future of education,” has a t-statistic of 0.46 and a p-value of 0.648, which is well above 0.05. This suggests no statistically significant difference, meaning that students do not overwhelmingly agree or disagree on AI’s future role in education.

Statement 9, “I have concerns about privacy and security in relation to AI use,” has a t-statistic of 2.30 and a p-value of 0.027, which is below 0.05. This indicates a statistically significant difference, and the positive t-statistics suggest that students agree that they have concerns regarding privacy and security in relation to AI use.

Statement 10, “AI tools available for students could be improved for better usability,” has a t-statistic of 2.05 and a p-value of 0.047, which is just below 0.05. This shows a statistically significant difference, and the positive t-statistic suggests that students tend to agree that AI tools could be improved for usability.

Statement 11, “My peers frequently use AI in studying topics,” has a t-statistic of -3.22 and a p-value of 0.0027, which is below 0.05. The statistically significant negative t-statistic suggests that students tend to disagree with this statement, meaning they do not frequently see their peers using AI for studying.

Statement 12, “AI should be an integral part of education in the future,” has a t-statistic of -0.16 and a p-value of 0.875, which is far above 0.05. This indicates no statistically significant difference from neutral/disagree, suggesting that students have mixed or neutral opinions on whether AI should be an integral part of education in the future.

Statement 13, “AI is used across different academic disciplines in my institution,” has a t-statistic of 0.43 and a p-value of 0.668, both of which indicate no statistically significant difference. This means that students do not strongly agree or disagree with the idea that AI is widely used across different academic disciplines.

Statement 14, “I balance the use of AI with critical thinking and independent learning,” has a t-statistic of 3.40 and a p-value of 0.0016, showing a statistically significant difference. The positive t-statistic suggests that students tend to agree that they balance AI use with critical thinking and independent learning.

Statement 15, “Certain areas within my studies should not rely on AI tools,” has a t-statistic of 8.45 and a p-value of 0.000000000362, which is extremely low, indicating a highly significant difference from 2. The high positive t-statistic suggests that students strongly agree that certain areas of study should not rely on AI tools.

DISCUSSION

Overall, the data indicates that while students see AI as beneficial, their views on its role, effectiveness, and limitations remain varied. There is strong agreement on AI's usefulness and areas for improvement but also concerns about privacy and an acknowledgment that AI should not replace essential human-driven aspects of learning.

The findings indicate that students largely acknowledge the role of AI in their studies, with Statements 1, 3, and 4 showing statistically significant differences. Students generally agree that they use AI tools in their coursework, benefit from AI in enhancing learning efficiency, and face certain challenges when integrating AI into their studies. This aligns with previous research emphasizing AI's role in improving engagement and academic outcomes (Holmes et al., 2023; Kilianova et al., 2025).

Conversely, Statements 2 and 5 did not show significant differences, implying that students hold mixed or neutral views regarding AI's integration into their courses and its impact on their decision-making processes. This lack of consensus suggests that while AI has a presence in education, its role and effectiveness vary depending on how it is used in different academic settings, as noted in previous studies (Nguyen, 2025).

Further analysis of Statements 6 to 10 reveals notable areas of agreement and neutrality. Students agree that they have received some level of training in AI use (Statement 7), express concerns about privacy and security (Statement 9), and believe AI tools could be improved for usability (Statement 10). However, their views are more divided when it comes to whether AI has significantly improved their learning experience (Statement 6) and its potential future role in education (Statement 8). These mixed reactions highlight that while AI has demonstrated benefits, it is not yet universally regarded as an essential or flawless tool in education, echoing concerns about ethical and pedagogical implications (Slimi, 2023; Uddin, 2024).

The results from Statements 11 to 15 provide additional insights into students' perceptions of AI use. Students disagree that their peers frequently use AI in studying (Statement 11), indicating that while AI adoption is growing, it may not yet be widespread among their classmates. Additionally, students remain neutral on whether AI should be an integral part of education (Statement 12) and whether it is widely used across academic disciplines (Statement 13). However, they agree that they balance AI use with critical thinking and independent learning (Statement 14) and strongly agree that certain areas of study should not rely on AI tools (Statement 15). This suggests that students recognize AI as a useful but limited tool, reinforcing the importance of human reasoning and subject-specific considerations when integrating AI into education (Jose & Jose, 2024; Nguyen, 2025).

Overall, the data indicates that while students see AI as beneficial, their views on its role, effectiveness, and limitations remain varied. There is strong agreement on AI's usefulness and areas for improvement but also concerns about privacy and an acknowledgment that AI should not replace essential human-driven aspects of learning. This reflects prior literature highlighting both

the advantages and challenges of AI in education and the need for responsible AI integration (Nguyen, 2025; Holmes et al., 2023).

Findings in Relation to the Problem Statement, Research Questions, and Hypothesis Testing

The findings indicate that students largely acknowledge the role of AI in their studies, with statistically significant differences observed in Statements 1, 3, and 4. These results suggest that AI is perceived as beneficial for learning efficiency and decision-making, aligning with the research problem's emphasis on AI's role in improving education while presenting certain challenges.

Regarding the research questions, students' perceptions of AI's benefits and limitations align with the findings that many students use AI tools in their coursework and find them useful for academic efficiency. However, challenges such as privacy concerns and the need for better training (Statements 7 and 9) underscore the importance of addressing barriers to AI adoption. These results confirm that while AI enhances education, there are critical issues to resolve, supporting Research Question 1.

In response to Research Question 2, the study highlights primary challenges students face, including data privacy and AI reliance. The findings show that students recognize the importance of balancing AI use with independent learning (Statement 14) and that AI tools require improvements for usability (Statement 10). This supports the notion that AI integration must be managed carefully to avoid over-reliance while ensuring data security and ethical use.

With regard to Research Question 3, the results indicate mixed perceptions about AI's impact on critical thinking and engagement. Some students express concerns about AI's role in learning and decision-making (Statement 6), while others acknowledge AI's benefits in enhancing engagement in specific academic settings (Statement 8). These findings suggest that AI's impact varies depending on discipline and its application, reinforcing the need for targeted AI policies in different fields of study.

The findings also provide insight into hypothesis testing. The significant differences in students' agreement with Statements 1, 3, and 4 support the alternative hypothesis (H_1), indicating that AI does improve learning efficiency and decision-making. However, the mixed responses in Statements 6, 8, and 12 suggest that AI's effect on critical thinking and engagement is not universally agreed upon, aligning with H_{03} , which posits that AI's presence in education does not have a measurable effect on critical thinking across disciplines. Similarly, the concerns about privacy and AI over-reliance confirm that students perceive challenges in AI adoption, rejecting H_{02} .

CONCLUSION

The integration of artificial intelligence (AI) in higher education has generated widespread interest, with students and educators recognizing both its potential benefits and associated challenges. AI has proven to be a valuable tool for personalized learning, data-driven decision-making, and efficiency in various academic disciplines. While AI adoption is more readily accepted in STEM and business fields, students in the humanities, social sciences, and creative arts express concerns about ethical implications, bias, and the preservation of human judgment and creativity.

Many university students believe that AI should be an integral part of their education, acknowledging its ability to improve educational outcomes and prepare them for future careers (Nguyen, 2025). However, ensuring that students are equipped with AI literacy, ethical guidelines, and opportunities for human-AI collaboration will be key to maximizing the benefits of AI in education while mitigating its potential risks.

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Published By:

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