University Students' Perceptions and Attitudes Toward AI Use in Learning: Benefits and Concerns

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Abstract: Artificial Intelligence (AI) has been increasingly utilized in higher education and has influenced the way students learn and complete academic tasks. This study aims to examine university students' perceptions and attitudes toward the use of Artificial Intelligence in the learning process. A descriptive quantitative approach was employed, involving 74 active students from the Geography Education study program. Data collection was conducted via an online questionnaire using a five-point Likert scale, and the data were analyzed using descriptive statistics and score interpretation techniques. Research findings suggest that students' perspectives on the use of Artificial Intelligence fall into the positive category, with 73.5% reporting a positive view. At the same time, students' attitudes toward AI use also fall into a positive category, reaching 74.1%. These findings suggest that Artificial Intelligence is perceived as beneficial in enhancing learning efficiency, motivation, and student Engagement. However, the study also reveals students' concerns regarding potential over-reliance on AI, which may reduce critical thinking skills, as well as issues related to data privacy and security. Based on these findings, this study recommends that universities provide training on Artificial Intelligence (AI) ethics, establish privacy protection guidelines, and implement academic integrity policies.

Abstrak: Artificial Intelligence (AI) semakin banyak dimanfaatkan dalam pembelajaran di pendidikan tinggi dan memengaruhi cara mahasiswa belajar serta menyelesaikan tugas akademik. Penelitian ini bertujuan untuk menganalisis persepsi dan sikap mahasiswa terhadap penggunaan Artificial Intelligence dalam proses pembelajaran. Penelitian ini menggunakan pendekatan deskriptif kuantitatif dengan melibatkan 74 mahasiswa aktif Program Studi Pendidikan Geografi. Pengumpulan data dilakukan lewat kuesioner online dengan skala likert lima poin dan dianalisis dengan statistik deskriptif serta interpretasi skor. Temuan penelitian mengindikasikan pandangan mahasiswa Artificial Intelligence berada pada kategori positif dengan persentase sebesar 73,5%, sedangkan sikap mahasiswa menunjukkan kategori positif dengan persentase sebesar 74,1%. Temuan ini mengindikasikan bahwa Artificial Intelligence dipandang bermanfaat dalam meningkatkan efisiensi belajar, motivasi, dan keterlibatan mahasiswa. Namun demikian, penelitian ini juga mengungkap adanya kekhawatiran mahasiswa terkait potensi ketergantungan berlebihan yang dapat menurunkan kemampuan berpikir kritis serta risiko terhadap privasi dan keamanan data. Berdasarkan temuan tersebut, penelitian ini merekomendasikan Perguruan tinggi perlu menyelenggarakan pelatihan etika Artificial Intelligence (AI), memberikan pedoman perlindungan privasi, serta menetapkan kebijakan integritas akademik.

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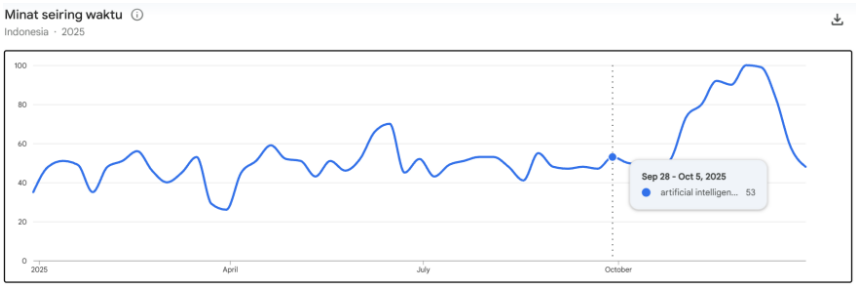
A. Introduction

Artificial Intelligence (AI) has become one of the most rapidly developing technologies and is increasingly utilized across various sectors, including education. The growing public interest in AI is evident in digital search trends. According to Google Trends data, search interest in Artificial Intelligence (AI) in Indonesia throughout 2025 shows an overall upward trend despite some fluctuations. At the beginning of the year, the search index for Artificial Intelligence ranged from 30 to 60, reflecting a relatively stable level of public attention. Subsequently, during the period of 28 September–5 October 2025, search interest in Artificial Intelligence was recorded at an index value of 53. In the following months, the search index increased significantly, approaching 100, indicating a substantial surge in interest compared to the previous period. These data suggest that Artificial Intelligence has become one of the most frequently searched topics among the Indonesian public and that it is increasingly relevant in contemporary digital discourse (Diaz et al., 2025). The search interest in Artificial Intelligence throughout 2025 is illustrated in Figure 1.



Source: Google Trends

Figure 1. Screenshot of Google Trends showing AI search interest

Artificial intelligence can be understood as the capability of digital computing systems or machines operated under computer control to perform tasks that typically require human intelligence (Copeland, 2025). The rapid development of AI technology has significantly transformed multiple sectors, particularly education. In higher education, Artificial Intelligence has the potential to improve learning outcomes by providing personalized and adaptive learning strategies that enhance the effectiveness of the learning process. This potential is realized through the implementation of various applications, including intelligent tutoring systems, automated learning analytics, and digital platforms that support instructional activities (Farahani & Ghasmi, 2024; UNESCO, 2025).

In the context of student learning, Artificial Intelligence is often perceived as a technology that can reduce academic workload, increase efficiency in completing assignments, and broaden access to diverse sources of information. Several studies support this perspective by demonstrating that AI improves learning effectiveness in higher education, particularly by helping students understand complex materials and complete academic tasks more efficiently (Meiditra et al., 2025; Kamil et al., 2025; Christia et al., 2024). These findings reflect a growing research trend that positions Artificial Intelligence as a functional and productive academic support tool. However, the use of Artificial Intelligence

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does not only produce positive outcomes; it also raises several challenges and concerns. Students who excessively depend on Artificial Intelligence without balancing its use with real-world practice may experience a decline in decision-making and problem-solving skills due to limited Engagement with authentic learning contexts (Christia et al., 2024). Furthermore, Ali et al (2023) highlight the potential risk of academic misconduct arising from the use of Artificial Intelligence, such as plagiarism or the completion of academic tasks that rely entirely on machine-generated outputs without sufficient student understanding.

As the primary users of educational technology in higher education, students play a crucial role in determining the effectiveness of Artificial Intelligence implementation. The success of technology integration in learning environments is not solely determined by technological advancement but is also strongly influenced by how students perceive, interpret, and respond to its use. Students' perceptions and attitudes, therefore, become key factors that shape the acceptance and utilization of Artificial Intelligence in academic activities. Recent studies reveal that students' perceptions and attitudes toward the use of Artificial Intelligence remain diverse. On the one hand, students recognize the benefits of AI in improving learning efficiency and supporting academic tasks; on the other hand, they also express concerns related to academic integrity, ethical issues, and potential negative impacts on cognitive skills (Lien, 2025).

Although previous studies have explored the use of Artificial Intelligence in higher education, most research has focused on students' perceptions of the effectiveness and efficiency of AI-assisted learning (Meiditra et al., 2025). Other studies have also investigated students' perceptions related to access to learning resources and the ease of understanding learning materials when using AI technologies (Kamil et al., 2025). However, these studies generally analyze students' perceptions in isolation and have not comprehensively examined students' attitudes toward the acceptance and utilization of Artificial Intelligence in academic activities. Moreover, limited attention has been paid to identifying students' concerns about potential risks associated with AI use in learning contexts. This indicates a research gap that requires a more integrative analysis to understand how students simultaneously perceive, accept, utilize, and critically evaluate the use of Artificial Intelligence in higher education learning environments.

Based on the identified research gap, the novelty of this study lies in its integrative analytical approach that simultaneously examines students' perceptions, attitudes, and concerns regarding the use of Artificial Intelligence in learning. Unlike previous studies that tend to focus on a single dimension, this study combines perception indicators adapted from Darmawan et al (2024)—including satisfaction, knowledge, ease of use, motivation, and student Engagement—with attitude indicators that encompass the dimensions of acceptance and utilization of Artificial Intelligence. By integrating these dimensions into a single analytical framework, this study provides a more comprehensive understanding of how students interpret, accept, and critically assess the role of Artificial Intelligence within the learning process.

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Based on the background and the identified research gap, this study aims to explore how university students perceive and respond to the use of Artificial Intelligence in learning activities. Specifically, this study seeks to examine students' perceptions of Artificial Intelligence in the learning process, analyze their attitudes toward the acceptance and use of AI in academic activities, and identify the main concerns arising from its use in higher education contexts. By addressing these aspects simultaneously, this research provides a more comprehensive understanding of how students interpret the role of Artificial Intelligence not only as a technological tool that supports learning efficiency but also as a technology that raises important ethical and cognitive considerations. The findings of this study are expected to contribute to the growing body of literature on Artificial Intelligence in Education by presenting an integrated perspective on students' perceptions, attitudes, and concerns regarding AI usage. In addition, the results may serve as an empirical basis for higher education institutions in developing policies, ethical guidelines, and AI literacy programs that encourage the responsible and effective use of Artificial Intelligence in academic environments.

B. Method

This study employs a descriptive quantitative research method. Waruwu et al (2025) state that descriptive quantitative research is a method used to describe or explain phenomena or characteristics of a particular population or sample through a quantitative approach.

The population of this study consisted of active students in the Geography Education program, while the research sample comprised 74 Geography Education students from the 2022, 2023, 2024, and 2025 cohorts. A sample is a smaller, more manageable subset of a larger population (Iba & Wardhana, 2024). The sample in this study was selected using a purposive sampling technique (Firmansyah & Dede, 2022), with criteria including active students from the 2022–2025 cohorts who had experience using Artificial Intelligence (AI) in learning activities and were willing to participate as respondents.

This study was conducted during the first semester of the 2025/2026 academic year within the Geography Education Study Program at the Faculty of Teacher Training and Education, Mulawarman University, located on Muara Pahu Street, Gunung Kelua Subdistrict, Samarinda Ulu District, Samarinda City, East Kalimantan.

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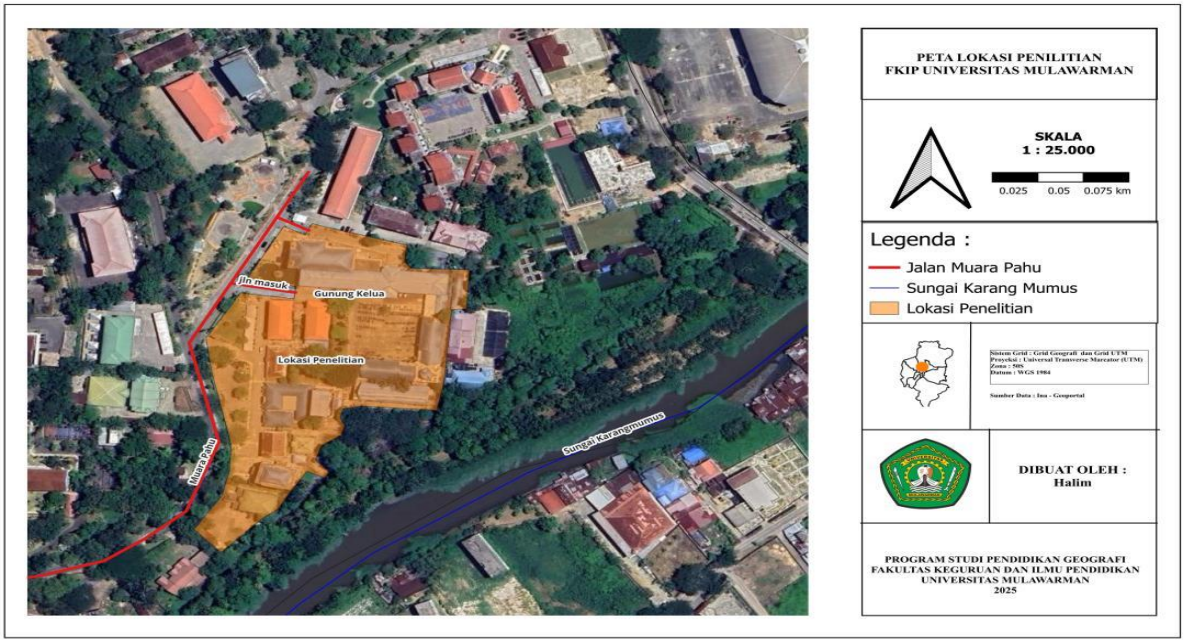

Source: personal collection, 2025

Figure 2. Map of the Research Area

The researchers adopted a quantitative approach as it is considered to place greater emphasis on ethical aspects. Within this approach, relevant variables were first determined based on theoretical foundations and then operationalized through appropriate indicators. Subsequently, the researchers developed a closed-ended questionnaire comprising 27 items to measure perceptions and attitudes. Perceptions were assessed across five dimensions: satisfaction, knowledge, ease of use, motivation, and student Engagement. Meanwhile, attitudes were measured through two dimensions: utilization and acceptance. The research instrument employed a five-point Likert scale, with response categories ranging from 1 = Strongly Disagree to 5 = Strongly Agree.

In this study, data were collected using an online Google Form questionnaire distributed via Google Forms and directly to respondents via WhatsApp. The study adhered to research ethics principles, including obtaining informed consent from each respondent prior to completing the questionnaire and ensuring anonymity and data confidentiality. The collected data were used solely for academic purposes and research analysis. According to Sugiyono (2019), a questionnaire is a data collection method that presents statements related to the research topic to respondents individually. To support the primary data, the researchers conducted a literature review of relevant journals, articles, and reports on the research topic. After data collection, the data were processed using IBM SPSS version 27. Data analysis included validity and reliability tests, descriptive statistics, and interpretation of Likert-scale scores.

The initial stage of analysis involved testing the validity and reliability of the research instrument. Janna and Herianto (2021), as cited in Azizah & Chalimatusadiah (2025), state that validity testing is used to determine whether an instrument is valid or

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invalid. In addition, Azizah & Chalimatusadiah (2025) explain that reliability testing is a technique used to assess the consistency and stability of an instrument when it is administered repeatedly under the same conditions. Validity testing determines how effectively statement items measure the targeted construct, whereas reliability testing examines the internal consistency of the items. In this study, validity and reliability testing were conducted using IBM SPSS version 27, and the results are presented in Table 1 below.

Table 1. Validity Test Summary

Variable	Items	r-count Range	r-table	Result
Perception	X1–X19	0.236 – 0.680	0.228	Valid
Attitude	X20–X27	0.288 – 0.583	0.228	Valid

Source: Author, 2025

Based on Table 1, the results of the validity test indicate that all instrument items meet the required validity criteria. This is demonstrated by the calculated correlation coefficients (r-count) for each item, which exceed the r-table value of 0.228, indicating that each questionnaire item is statistically valid for measuring the intended constructs (Widodo et al., 2023). These findings confirm that the instrument items accurately represent the variables examined in this study, namely, students' perceptions and attitudes toward the use of Artificial Intelligence in learning. Since all 27 items met the validity requirements, none were removed from the instrument. Therefore, the entire set of questionnaire items was retained and subsequently subjected to reliability testing to assess the instrument's internal consistency.

Table 2. Instrument Reliability Test Results

Cronbach's Alpha	N of Items	Description
.864	27	Reliable

Source: Author, 2025

From Table 2, it can be identified that the reliability test results for the 27 instrument items indicate a Cronbach's Alpha value of 0.864. This value exceeds the minimum reliability threshold of 0.60, indicating that the research instrument has a satisfactory level of internal consistency. According to commonly accepted reliability criteria, a Cronbach's Alpha value above 0.60 indicates that the instrument is reliable and capable of producing consistent measurement results when applied to respondents under similar conditions. Therefore, the questionnaire used in this study is considered appropriate for measuring students' perceptions and attitudes toward the use of Artificial Intelligence in the learning process.

After confirming the validity and reliability of the research instrument, the study proceeded to the next stage of the research procedure, which involved data collection, processing, and analysis. The overall stages of the research process conducted in this study are illustrated in Figure 3.

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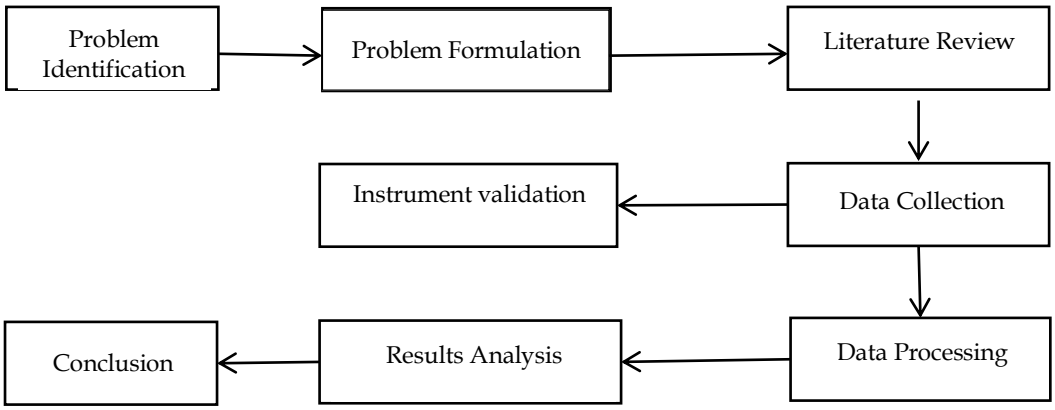

Figure 3. Research Flow

Figure 3 illustrates the overall research flow employed in this study. The research process begins with a literature review to identify relevant theories and prior studies on the use of Artificial Intelligence in education. Based on this review, the researchers identified the problem and formulated the research questions. The next stage involved instrument validation to ensure that the questionnaire items were valid and reliable for measuring the research variables. After the instrument was confirmed to be valid and reliable, data were collected from respondents through the distributed questionnaire. The collected data were then processed and analyzed using descriptive statistical techniques. Finally, the analysis results were interpreted to conclude students' perceptions and attitudes toward the use of Artificial Intelligence in learning.

C. Result

The presentation of the research findings in this study employs descriptive statistical analysis, combined with score interpretation, as an analytical approach to provide a comprehensive, measurable overview of students' perceptions and attitudes toward the use of Artificial Intelligence (AI). Descriptive statistics were selected as the analytical method due to their ability to systematically summarize and present data through measures of central tendency and data dispersion. This study includes descriptive statistical analysis, including the calculation of the mean to identify general trends in students' responses, the median to determine the central point of data distribution, the mode to identify the most frequently occurring responses, and the standard deviation to measure the degree of variability or diversity in respondents' answers. Furthermore, score interpretation involves classifying statistical results into specific categories based on predetermined class intervals. This categorization enables researchers to translate statistical values into more easily understood qualitative descriptions, such as very negative, negative, neutral, positive, and very positive. Through this dual analytical approach, the study presents findings that are not only numerically accurate but also contextually meaningful in describing the perceptions and attitudes of Geography Education students toward the use of Artificial Intelligence (AI) technology.

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Descriptive Statistics

Descriptive analysis of this study includes the calculation of minimum, maximum, mean, standard deviation, and range values. Data processing was conducted using IBM SPSS version 27, and the results are presented in Table 3.

Table 3. Descriptive Statistics Test Results

Descriptive Statistics						
	N	Range	Minimum	Maximum	Mean	Std. Deviation
Perception	74	39	52	91	66.91	7.211
Attitude	74	18	22	40	29.65	3.688
Valid N (listwise)	74					

Source: Author, 2025

Table 3 presents the descriptive statistics for the two variables examined in this study: students' perceptions and attitudes toward the use of Artificial Intelligence (AI) in learning. The results indicate that students' perceptions of AI usage range from 52.00 to 91.00, with a total range of 39.00. The mean perception score is 66.91, accompanied by a standard deviation of 7.211. These findings suggest that students generally demonstrate positive perceptions toward the use of Artificial Intelligence in the learning process. However, the relatively high standard deviation indicates that some variation in responses persists among respondents. The positive perception of students is reflected through several indicators, including satisfaction, knowledge, ease of use, motivation, and student Engagement in learning activities supported by Artificial Intelligence.

Furthermore, the descriptive statistics for the attitude variable show that students' attitudes toward the use of Artificial Intelligence, as measured by indicators of acceptance and utilization, range from 22 to 40. The mean attitude score is 29.65 with a standard deviation of 3.688. These results indicate that students tend to exhibit positive and relatively consistent attitudes toward the use of Artificial Intelligence in the learning process. The mean value approaching the upper limit of the score range suggests that, in general, students accept and use Artificial Intelligence as a supportive technology to complete academic tasks and enhance their learning.

Score Interpretation

Sugiyono (2012) explains that score interpretation criteria can be determined based on the range of possible scores from the Likert scale used in the questionnaire. In this study, each questionnaire item has a maximum score of 5 and a minimum score of 1, resulting in a score range of 20% to 100%. Based on this range, the interval between adjacent interpretation categories is calculated by dividing the difference between the highest and lowest percentages by the number of categories, yielding an interval of 16% $(100\% - 20\%)/5$. These intervals are then used to classify the analysis results into several interpretation

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categories, ranging from very negative to very positive. The score interpretation criteria applied in this study are presented in Table 4.

Table 4. Score Interpretation Criteria

No	Score Range	Category
1	20%-35,9%	Very Negative
2	36%-51,9%	Negative
3	52%-67,9%	Neutral
4	68%-83,9%	Positive
5	84%-100%	Very Positive

Source: Author, 2025

Based on the score interpretation criteria presented in Table 4, the analysis indicates that students' perceptions and attitudes toward the use of Artificial Intelligence (AI) in learning fall within the positive category. The interpretation results of each variable are summarized in Table 5. As shown in Table 5, the perception variable obtained an average percentage score of 73.5%, which is categorized as positive according to the established interpretation criteria. This result indicates that students generally hold favorable views regarding the use of Artificial Intelligence in the learning process. Students perceive AI as a useful technological tool that can support various aspects of learning, including improving access to information, enhancing learning efficiency, and supporting academic task completion.

Furthermore, Table 5 also shows that the attitude variable obtained an average percentage score of 74.1%, which falls within the positive category. This finding suggests that students generally have a positive attitude toward the acceptance and use of Artificial Intelligence in academic activities. The relatively high percentage score indicates that students not only recognize the benefits of AI but also are willing to adopt and use the technology to support their learning activities. Overall, these results imply that Artificial Intelligence is both positively perceived and accepted as a supportive learning technology among university students.

Table 5. Score Interpretation Results of the Variable

Variables	Average Score	Interpretation Criteria
Perception	73,5%	Positive
Attitude	74,1%	Positive

Source: Author, 2025

According to the results presented in Table 5, students' perceptions of the use of Artificial Intelligence (AI) achieved a 73.5% score, placing it in the "Positive" category. Meanwhile, the variable of students' attitudes toward using Artificial Intelligence (AI) obtained a percentage score of 74.1%, which is also classified as "Positive".

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Table 6. Results of the Interpretation of Mean Indicator Scores

Indicator	Mean	Percentage	Category
Satisfaction	13,85	69,2%	Positive
Knowledge	13,77	68,8%	Positive
Ease of use	10,86	54,3%	Neutral
Motivation	14,43	72,1%	Positive
Student Engagement	13,99	69,9%	Positive
Utilization	14,58	72,9%	Positive
Acceptance	15,07	75,3%	Positive

Source: Author, 2025

According to Table 6, Geography Education students' satisfaction with the use of AI falls into the positive category, with an average of 13.85 and a 69.2% percentage. The knowledge aspect is also categorized as positive, with an average score of 13.77 and a 68.8% percentage, indicating that students possess solid knowledge of AI use. Furthermore, the ease-of-use indicator has a mean score of 10.86 and a percentage of 54.3%, placing it in the neutral category, indicating that students have not yet fully experienced optimal ease of use. Meanwhile, the motivation indicator is classified as positive, having an average value of 14.43 and a percentage of 72.1%, reflecting a relatively high level of learning motivation. The student Engagement indicator is also in the positive category, having an average value of 13.99 and a percentage of 69.9%, indicating that students' involvement in the learning process is generally good. In addition, the utilization indicator has an average of 14.58 and a 72.9% percentage. In contrast, the acceptance indicator shows the highest values, with an average of 15.07 and a percentage of 75.3%, both of which fall into the positive category.

D. Discussion

According to the results of the descriptive quantitative approach, Geography Education students generally hold positive perceptions and attitudes toward the use of Artificial Intelligence (AI) in learning. The findings indicate that students' perceptions of AI usage reached 73.5%, while their attitudes toward AI reached 74.1%, both of which fall within the positive category. These results suggest that students view Artificial Intelligence as a supportive technology that can facilitate various academic activities. This finding is consistent with the study by Valino et al (2024), which reported that students have positive perceptions of the use of Artificial Intelligence in the development of learning media. Similarly, Muhaimin (2024) and Batubara et al (2025) found that the majority of university students demonstrate positive attitudes toward the integration of Artificial Intelligence in learning environments. The relatively consistent mean values and standard deviations obtained in this study also indicate that students' responses toward AI usage tend to be relatively uniform.

Several factors may explain the formation of these positive perceptions and attitudes among students. One important factor is students' satisfaction with the use of Artificial Intelligence in completing academic tasks. AI tools offer features that help students improve

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assignment quality, generate ideas, and develop more creative learning outputs. This finding aligns with Nugroho et al (2025), who reported that students perceive Artificial Intelligence as contributing positively to the quality of academic assignments and creative learning processes.

Another factor influencing students' perceptions is their level of knowledge regarding Artificial Intelligence. Knowledge about AI plays an important role in shaping how students understand and utilize this technology. According to Jobin et al (2019), knowledge of Artificial Intelligence encompasses not only technical understanding but also awareness of ethical considerations, data privacy issues, and the broader social implications of technological development. Students with adequate knowledge of AI tend to exhibit more balanced and realistic perceptions of its use in academic contexts.

In addition, the ease of access and flexibility of Artificial Intelligence technologies contribute to students' positive perceptions. AI tools are easily accessible and allow students to obtain information quickly and efficiently when completing academic assignments or searching for learning materials. These findings are consistent with Nugroho et al (2025), who reported that students perceive Artificial Intelligence as a flexible and accessible tool for academic purposes. Similarly, Huang et al (2024) found that adaptive AI technologies reduce perceived difficulties in using digital learning tools and improve students' perceptions of ease of use.

Artificial Intelligence also plays a role in increasing students' motivation and Engagement in learning. The integration of AI technologies in learning activities enables students to access information more quickly and explore learning materials in more interactive ways. Muchminiin et al (2024) reported that the use of Artificial Intelligence in learning activities can increase students' motivation, Engagement, and understanding of course materials. In this regard, AI does not merely function as a technological support tool but also as an innovative learning medium capable of creating more adaptive and personalized learning experiences.

Furthermore, the use of Artificial Intelligence encourages students to become more actively involved in learning activities. AI tools facilitate faster information search, literature exploration, and knowledge discovery. Peliza (2024) reported that students tend to demonstrate higher levels of Engagement and participation in learning when supported by Artificial Intelligence technologies. Similarly, Akhyar et al. (2023), as cited in Balany et al (2025), found that AI applications such as Perplexity enable students to conduct literature searches more efficiently and effectively.

Students' acceptance of Artificial Intelligence in academic contexts is also influenced by their perception that AI contributes to improving the overall quality of education. Putri et al (2023) reported that the use of Artificial Intelligence in higher education learning activities can significantly enhance the quality of learning processes. In addition, AI tools are widely used by students to improve academic writing skills, particularly for grammar checking, improving sentence structure, selecting vocabulary, and generating ideas. Rahmawati et al (2025) found that Artificial Intelligence can assist students in improving the

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quality of academic writing by providing immediate feedback related to grammar and language accuracy. Abbas (2023) also reported that AI technologies support students in correcting spelling, organizing ideas, and overcoming writer's block in academic writing activities.

Despite the generally positive perceptions and attitudes identified in this study, several students expressed concerns about the use of Artificial Intelligence. One of the main concerns is the potential for excessive reliance on AI technologies. Continuous reliance on Artificial Intelligence may reduce students' opportunities to develop independent critical thinking and problem-solving abilities. This concern aligns with the findings of Ulfah (2024), who reported that excessive reliance on Artificial Intelligence may weaken students' analytical and creative thinking skills. In addition, students expressed concerns about data privacy and the potential for personal information leakage when using AI technologies. These concerns align with the findings of Kamil et al (2025), which highlight students' anxiety about data privacy and security issues related to the use of Artificial Intelligence.

Overall, the findings of this study support previous research indicating that university students generally accept Artificial Intelligence as an effective academic support tool. Valino et al (2024) and Meiditra et al (2025) found that Artificial Intelligence improves learning efficiency and supports students in understanding course materials. Similarly, Muhaimin (2024) reported that students demonstrate a positive level of acceptance toward the use of Artificial Intelligence in academic contexts. However, the present study also reinforces findings from previous research emphasizing that students' acceptance of Artificial Intelligence is not entirely uncritical. While students recognize the benefits of AI in improving academic productivity, they also recognize potential risks related to ethical issues, academic integrity, and data privacy (Kamil et al., 2025; Lien, 2025).

The main contribution of this study is to present an integrated analysis that simultaneously examines students' perceptions, attitudes, and concerns regarding the use of Artificial Intelligence in learning. Unlike previous studies that primarily focus on either perceptions or attitudes, this research provides a more comprehensive understanding of how students interpret, accept, and critically evaluate the use of Artificial Intelligence in higher education contexts. These findings contribute to the literature on Artificial Intelligence in Education by highlighting that the successful implementation of AI in higher education depends not only on students' level of acceptance but also on the development of critical awareness, ethical literacy, and institutional policies that promote responsible AI usage.

E. Implication

Research results show that students' positive perceptions and attitudes towards Artificial Intelligence (AI) can be leveraged to support the learning process, particularly by improving learning efficiency, the quality of academic assignments, and student motivation. However, the use of AI needs to be pedagogically directed and limited to avoid fostering dependency while still encouraging students' critical thinking and creativity.

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Theoretically, this study enriches the study of Artificial Intelligence in Education by emphasizing that students' acceptance of AI is not solely based on its practical benefits, but is also accompanied by critical awareness of the risks associated with its use. These findings support the development of technology acceptance frameworks that incorporate reflective and ethical attitude dimensions in the context of higher education.

This study underscores the need for clear institutional policies on AI use in higher education, including guidelines on academic ethics, data privacy, and limitations on AI in academic assignments. Such policies should be supported by AI literacy programs for both lecturers and students to ensure responsible use of AI.

F. Limitation and Suggestion for Further Research

This study has a relatively narrow scope, with respondents from only a single academic program. This condition limits the generalizability of the findings, as the results do not yet reflect the perceptions and attitudes of students from other study programs or higher education institutions. In addition, the use of self-report data may introduce bias; the analysis remains primarily descriptive, and the absence of qualitative data limits the depth of interpretation.

Given the limitations, future research is recommended to adopt a mixed-methods approach by combining quantitative surveys with in-depth interviews to obtain a more comprehensive understanding of the factors influencing students' perceptions and attitudes toward Artificial Intelligence. Further studies may also apply inferential analyses, such as difference tests or relationship analyses, to examine the effects of AI usage intensity on students' critical thinking skills, creativity, and academic performance. Moreover, comparative studies across different academic programs and higher education institutions are necessary to enhance external validity and enrich the empirical literature on the use of Artificial Intelligence in higher education.

G. Conclusion

This study concludes that university students demonstrate positive perceptions and attitudes toward the use of Artificial Intelligence (AI) in the learning process. The findings indicate that students' perceptions of AI reached 73.5% and their attitudes toward AI reached 74.1%, both of which fall within the positive category. These results suggest that Artificial Intelligence is generally perceived as a beneficial technological tool that supports various aspects of learning, including improving learning efficiency, enhancing student motivation, and increasing student Engagement in academic activities.

Despite these positive perceptions and attitudes, the study also reveals several concerns students have about the use of Artificial Intelligence in learning. The primary concerns include the potential for excessive reliance on AI technologies, which may negatively affect students' critical thinking and creativity, as well as concerns about data privacy and security. These findings highlight that although Artificial Intelligence offers

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significant benefits for learning activities, its implementation in higher education should be accompanied by responsible use practices.

Therefore, the integration of Artificial Intelligence in higher education needs to be supported by clear institutional policies, ethical guidelines, and academic integrity regulations. In addition, universities should promote AI literacy among students and educators to ensure that Artificial Intelligence is used as a supportive learning tool rather than a substitute for independent thinking and academic responsibility.

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