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# THE USE OF AI IN LEARNING: A STUDY AT THAI NGUYEN UNIVERSITY OF EDUCATION

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## Abstract

This study investigates the use and attitudes of students towards artificial intelligence (AI) in learning at Thai Nguyen University of Education, with a focus on how AI supports academic activities and the concerns it generates. The findings demonstrate that AI substantially enhances students' access to information, improves their skills, and boosts learning outcomes; however, concerns about over-dependence on technology remain prevalent. Furthermore, the study reveals distinct patterns in AI usage between students in the natural sciences and social sciences, with each group using AI tools for different purposes. Based on these insights, recommendations are made to establish appropriate AI usage guidelines and promote self-directed learning skills. The study highlights the potential of AI to transform higher education, emphasizing the importance of addressing ethical and practical guidelines to ensure the responsible use of AI to maximize its benefits.

## *Keywords:*

Artificial intelligence, students, Thai Nguyen University of Education, Chat GPT, AI usage guidelines.

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## 1. Introduction

### *1.1. Research Context*

Artificial intelligence (AI) and advanced language models, particularly ChatGPT, are creating a revolution in the field of education, significantly impacting modern teaching and learning methods. The emergence of ChatGPT and similar AI systems provides learners with powerful tools to support self-directed learning, personalize content, and enhance academic performance through instant and accurate feedback (Abukmeil, Ferrari, Genovese, Piuri, & Scotti, 2021; Ahmad et al., 2023). This is reflected in the research by Ahmad et al., who highlight that AI tools can create a collaborative platform between humans and chatbots in various fields, including software development (Ahmad et al., 2023).

Applications of ChatGPT, Gemini, and other AI tools in education have also promoted advancements in personalized learning, particularly in vocational training and adaptive learning environments. Aydin and Karaarslan (2022) argue that AI has the potential to support skill training and education, particularly in the healthcare sector, where AI can provide continuous feedback and optimize the learning experience. Additionally, Grassini (2023) explored how AI, particularly ChatGPT, can significantly alter teaching and learning structures through its ability to personalize and support active learning.

Despite the benefits, AI in education also faces many ethical and academic integrity challenges. Cotton et al. (2024) raised concerns regarding ethics and academic integrity when using AI tools in educational contexts, emphasizing the risk of plagiarism and cheating. These concerns regarding the potential negative impact of AI are also supported by the research of Farrokhnia et al. (2024), who conducted a SWOT analysis and pointed out that although AI can support personalized learning and reduce the workload of teachers, it can also lead to issues of ethics and student dependency on technology.

Furthermore, AI models present numerous opportunities for research and innovation in education. According to Dempere et al. (2023), the development of AI tools not only improves learning outcomes but also opens new possibilities for educational research, as AI can assist in the development of adaptive assessment and teaching methods. Meanwhile, AlAfnan et al. (2023) emphasize the importance of developing supporting strategies and policies to ensure that AI is used effectively and responsibly in educational environments.

Several studies also show that AI tools can enhance students' awareness and self-learning skills. Habibi et al. (2023) demonstrated that AI tools provide opportunities for automated and interactive learning, enabling students to access knowledge more quickly and easily. Ansari et al. (2023) conducted a global review and confirmed that AI tools have significant potential to improve teaching and learning effectiveness in higher education institutions, but caution is needed to avoid excessive reliance on this technology.

However, other AI tools also present issues that require careful consideration. Bleumink and Shikhule (2023) studied how to differentiate between student-generated content and AI-generated content, which plays a crucial role in maintaining academic integrity in educational settings. Finally, Chiu (2023) pointed out that the integration of AI in education needs to be supported by clear policies and procedures to ensure that AI is used sustainably and beneficially for students.

### *1.2. Importance of the Study*

Globally, there have been many studies investigating the impact of AI on education, especially in the context of higher education, where students frequently use these tools to support their learning. However, in Vietnam, research evaluating the actual status and impact of AI on learning, particularly in universities, is still quite limited. Thai Nguyen University of Education is one of the pioneering higher education institutions in applying technology to teaching, making it essential and practically meaningful to investigate the extent and ways in which students use AI at this institution.

### *1.3. Research Objectives*

This study aims to investigate the use of AI in learning among students at Thai Nguyen University of Education, evaluate the factors influencing AI usage, and propose recommendations to improve the effectiveness of AI applications in higher education. The specific research questions include:

- What is the prevalence of AI in learning at Thai Nguyen University of Education?
- What factors influence students' use of AI?
- How do students perceive and what are their views on the effectiveness and impact of AI on the learning process?

Answering these questions will not only clarify the actual use of AI at Thai Nguyen University of Education but also provide valuable information for educational administrators in formulating policies to support and guide the effective and safe use of AI in learning.

## 2. Research Methodology

This study is designed using a quantitative approach, employing a survey questionnaire to collect data from students. The quantitative method enables the collection of accurate and objective information about the extent of AI usage in learning, students' perceptions of AI, and the factors influencing AI usage. Additionally, to achieve reliable results, the study combines data analysis to clarify the factors that impact students' attitudes and behaviors toward AI usage.

The participants in this study are students currently enrolled at Thai Nguyen University of Education, from various faculties and disciplines. The study is not limited to a specific group of disciplines, ensuring the representativeness of the sample and allowing the results to be generalized to all students at the university.

The survey questionnaire is designed with 15 questions, divided into four main groups:

- **Group 1: AI Usage** – Surveys the frequency and extent of students' use of AI tools in learning.
- **Group 2: Purposes of AI Usage** – Assesses the reasons and objectives for which students use AI, such as supporting information retrieval, checking grammar, explaining assignments, and completing tasks.
- **Group 3: Effectiveness of AI Usage** – Determines the impact of AI on students' learning skills, confidence, and overall learning effectiveness.

- **Group 4: Attitudes towards AI** – Evaluates students' views and attitudes regarding the role of AI in learning, including their comfort level with using it and concerns about excessive dependence on AI.

The survey questions use a 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), which facilitates easy data collection and enhances the accuracy of analyzing students' attitudes and views.

Data is collected by distributing the survey through Zalo groups. Participation is voluntary. Before responding to the survey questions, students are informed of the research objectives and are assured of the confidentiality of their personal information to ensure the privacy and reliability of the data collected.

The collected data will be analyzed using SPSS 20.0 software. The analysis techniques include:

- **Descriptive Statistics**: Using mean scores and standard deviations to describe the extent of AI usage, purposes, effectiveness, and students' attitudes towards AI.
- **Factor Analysis**: Identifying the main groups of factors that influence students' attitudes and behaviors toward AI usage.
- **Reliability Testing (Cronbach's Alpha)**: Examining the internal consistency of the groups of questions in the survey to ensure the reliability of the survey instrument.

The analysis process will help clarify the factors affecting the level and attitudes towards AI usage in learning, thereby providing a database to develop policies and guidelines for supporting students in using AI more effectively.

## 3. Results

### *3.1. Descriptive Statistics of the Sample*

**Table 1. Classification of Survey Participants by Academic Discipline**

| | | Số lượng | Tỷ lệ (%) |
|---|---|---|---|
| **variable** | Social Sciences | 79 | 51.3 |
| | Natural Sciences | 75 | 48.7 |
| | Total | 154 | 100.0 |

The statistics on the survey participants by academic discipline show a fairly balanced distribution, with 51.3% of the students coming from the Social Sciences group and 48.7% from the Natural Sciences group (Table 1). This reflects the diversity and representativeness of the sample, ensuring that the analysis results are not biased by significant differences between the academic groups. This balance allows the study to provide a more comprehensive evaluation of the current situation and perspectives on AI usage in learning across different disciplines.

**Table 2. Classification of Survey Participants by Year of Study**

| | | Number | Percentage(%) |
|---|---|---|---|
| **Variable** | First year | 60 | 39.0 |
| | Second year | 47 | 30.5 |
| | Third year | 23 | 14.9 |
| | Fourth year | 24 | 15.6 |
| | Total | 154 | 100.0 |

The results in Table 2 show that the majority of survey participants are first-year students (39.0%) and second-year students (30.5%). The number of third-year and fourth-year students is smaller, accounting for 14.9% and 15.6%, respectively. This indicates that younger students, especially first- and second-year students, are more likely to participate in the survey, possibly because they are exposed to new technologies like AI earlier in their academic journey. This also reflects the diverse learning experiences across different years of study.

**Table 3. Classification of Survey Participants by Gender**

| | | Number | Percentage (%) |
|---|---|---|---|
| **Variable** | Female | 108 | 70.1 |
| | Male | 46 | 29.9 |
| | Total | 154 | 100.0 |

Data from Table 3 shows that female students constitute the majority, with 70.1%, while male students make up only 29.9% of the survey sample. This reflects the fact that female students may constitute the majority at the university or may be more inclined to participate in the survey. This result also indicates the need to consider gender as a factor when analyzing attitudes and behaviors regarding AI usage to ensure that the conclusions are generalized and accurate.

### *3.2. Reliability Assessment of the Survey Tool*

**Table 4. Cronbach's Alpha Coefficient**

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | Variable |
|---|---|---|
| **.953** | .953 | 15 |

The Cronbach's Alpha coefficient achieved a value of 0.953, which is very high, reflecting excellent internal reliability of the survey instrument (Table 4). This demonstrates that the observed variables are consistent, making the tool suitable for evaluating various aspects of AI usage in learning. The high Cronbach's Alpha value also ensures that the collected data is stable and reliable, providing a solid foundation for the subsequent quantitative analyses in the study.

**Table 5. Total Item Statistics Results**

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Squared Multiple Correlation | Cronbach's Alpha if Item Deleted |
|---|---|---|---|---|---|
| **Q1** | 48.6753 | 88.848 | .722 | .699 | .950 |
| **Q2** | 48.5584 | 87.490 | .749 | .681 | .949 |
| **Q3** | 48.7532 | 88.030 | .727 | .717 | .950 |
| **Q4** | 48.2987 | 87.034 | .830 | .793 | .947 |
| **Q5** | 48.7987 | 91.325 | .477 | .409 | .956 |
| **Q6** | 48.4091 | 87.917 | .764 | .694 | .949 |
| **Q7** | 48.5130 | 87.624 | .799 | .715 | .948 |
| **Q8** | 48.5260 | 87.885 | .781 | .715 | .948 |
| **Q9** | 48.5584 | 89.725 | .695 | .600 | .950 |
| **Q10** | 48.4675 | 86.970 | .829 | .786 | .947 |
| **Q11** | 48.6623 | 88.212 | .762 | .679 | .949 |
| **Q12** | 48.3896 | 86.449 | .825 | .800 | .947 |
| **Q13** | 48.6104 | 87.285 | .827 | .753 | .948 |
| **Q14** | 48.5974 | 91.013 | .563 | .434 | .953 |
| **Q15** | 48.5455 | 87.439 | .758 | .652 | .949 |

To assess the detailed values regarding the contribution of each question to the overall scale, the research team evaluated the item statistics (Table 5). Most questions had a total correlation coefficient of 0.7 or higher, indicating a strong relationship with the overall survey content. In particular, questions Q4, Q10, and Q12 had total correlation coefficients above 0.8, showing their important role in measuring students' awareness and attitudes toward AI. On the other hand, question Q5 had the lowest total correlation coefficient (0.477), suggesting that this question may need to be reviewed for improvement or adjustment in future surveys. These results show that the survey tool is not only suitable but also highly stable, providing a reliable foundation for evaluating students' perceptions and behaviors regarding AI usage. This strongly supports policy recommendations and training methods related to AI applications in education.

Mean Standard Deviation Number of observed variables

### *3.3. Survey Results by Question Group*

**Table 6. Statistical Results for Each Survey Question**

| Question | Mean | Std. Deviation | Number of observed variables |
|---|---|---|---|
| **Q1** | 3.3506 | .83652 | 154 |
| **Q2** | 3.4675 | .90148 | 154 |
| **Q3** | 3.2727 | .88763 | 154 |
| **Q4** | 3.7273 | .85001 | 154 |

| | | | |
|---|---|---|---|
| **Q5** | 3.2273 | .95331 | 154 |
| **Q6** | 3.6169 | .85710 | 154 |
| **Q7** | 3.5130 | .84201 | 154 |
| **Q8** | 3.5000 | .84211 | 154 |
| **Q9** | 3.4675 | .80170 | 154 |
| **Q10** | 3.5584 | .85549 | 154 |
| **Q11** | 3.3636 | .83875 | 154 |
| **Q12** | 3.6364 | .89163 | 154 |
| **Q13** | 3.4156 | .83784 | 154 |
| **Q14** | 3.4286 | .85449 | 154 |
| **Q15** | 3.4805 | .89458 | 154 |

**Group 1: AI Usage**

Questions in this group, such as Q1, Q2, Q3, have average scores of 3.35, 3.47, and 3.27, respectively, indicating that students use AI tools at a moderate level, primarily in learning. This level of usage shows the popularity of AI among students, though the frequency of usage is not yet very high.

**Group 2: Purposes of AI Usage**

This group focuses on questions such as Q4 (3.73), Q5 (3.23), Q6 (3.61), and Q7 (3.51). The results show that students primarily use AI to search for information, check grammar errors, and assist with assignments. AI is rated the highest for its role in information retrieval (Q4), reflecting the important support AI provides in accessing learning materials.

**Group 3: Effectiveness of AI Usage**

The average scores for questions Q8 (3.50), Q9 (3.47), Q10 (3.56), and Q11 (3.36) show that students perceive AI as helping to increase learning effectiveness, improve skills, and save time. Notably, the question about confidence in grasping knowledge (Q10) received a high score, indicating the positive impact of AI.

**Group 4: Attitudes Toward AI**

Questions such as Q12 (3.63), Q13 (3.41), Q14 (3.42), and Q15 (3.48) reflect positive but cautious attitudes. Students agree that AI is useful and they feel comfortable using it, but they still express concerns about over-reliance on AI, especially its impact on self-directed learning (Q14). This highlights the need for guidelines on the proper use of AI in education.

### *3.4. Survey Results by Academic Discipline*

**Table 7. Statistical Results Classified by Academic Discipline**

| | Academic Discipline | Number | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| **Q1** | Social Sciences | 75 | 3.2400 | .85171 | .09835 |
| | Natural Sciences | 79 | 3.4557 | .81331 | .09150 |
| **Q2** | Social Sciences | 75 | 3.3600 | .95351 | .11010 |
| | Natural Sciences | 79 | 3.5696 | .84252 | .09479 |
| **Q3** | Social Sciences | 75 | 3.2000 | .94440 | .10905 |
| | Natural Sciences | 79 | 3.3418 | .83029 | .09342 |
| **Q4** | Social Sciences | 75 | 3.7067 | .94115 | .10867 |
| | Natural Sciences | 79 | 3.7468 | .75902 | .08540 |
| **Q5** | Social Sciences | 75 | 3.2000 | .97260 | .11231 |
| | Natural Sciences | 79 | 3.2532 | .94011 | .10577 |
| **Q6** | Social Sciences | 75 | 3.5733 | .90305 | .10427 |
| | Natural Sciences | 79 | 3.6582 | .81471 | .09166 |
| **Q7** | Social Sciences | 75 | 3.4667 | .89039 | .10281 |
| | Natural Sciences | 79 | 3.5570 | .79658 | .08962 |
| **Q8** | Social Sciences | 75 | 3.4800 | .89079 | .10286 |
| | Natural Sciences | 79 | 3.5190 | .79841 | .08983 |
| **Q9** | Social Sciences | 75 | 3.4400 | .91887 | .10610 |
| | Natural Sciences | 79 | 3.4937 | .67697 | .07617 |
| **Q10** | Social Sciences | 75 | 3.5200 | .84406 | .09746 |
| | Natural Sciences | 79 | 3.5949 | .87000 | .09788 |
| **Q11** | Social Sciences | 75 | 3.3200 | .88775 | .10251 |
| | Natural Sciences | 79 | 3.4051 | .79290 | .08921 |
| **Q12** | Social Sciences | 75 | 3.6400 | .87980 | .10159 |
| | Natural Sciences | 79 | 3.6329 | .90833 | .10219 |
| **Q13** | Social Sciences | 75 | 3.3600 | .84853 | .09798 |
| | Natural Sciences | 79 | 3.4684 | .82951 | .09333 |
| **Q14** | Social Sciences | 75 | 3.5067 | .87570 | .10112 |
| | Natural Sciences | 79 | 3.3544 | .83264 | .09368 |
| **Q15** | Social Sciences | 75 | 3.4800 | .96366 | .11127 |
| | Natural Sciences | 79 | 3.4810 | .82990 | .09337 |

Table 7 provides deeper insights into the differences in perspectives between students from the Natural Sciences group and the Social Sciences group regarding AI usage in learning. The average scores for most questions are higher in the Social Sciences group compared to the Natural Sciences group, although the differences are not substantial.

Specifically, in the questions about AI usage (Q1, Q2, Q3), Social Sciences students have higher average scores (Q1: 3.46; Q2: 3.57) compared to Natural Sciences students (Q1: 3.24;

Q2: 3.36), indicating that Social Sciences students tend to use AI more frequently. This may be due to the nature of their studies, which require more writing and information retrieval, where AI plays a supportive role.

Regarding learning effectiveness (Q8, Q10), the scores between the two groups are not significantly different, suggesting that both groups assess AI's benefits in improving skills and boosting confidence relatively equally.

However, in the attitude group toward AI (Q12, Q14), Social Sciences students exhibit higher comfort and acceptance of AI but also express similar concerns about dependency on technology (Q14: Natural Sciences: 3.51; Social Sciences: 3.35). This emphasizes that despite some differences, both groups acknowledge both the benefits and risks of AI in learning.

## 4. Discussion

### *4.1. Evaluation of the Results in Relation to the Research Objectives*

The research results have provided a comprehensive picture of the current state of AI usage in learning among students at Thai Nguyen University of Education, helping to clarify the role, awareness, and attitudes of students toward this tool in their learning process. Compared to previous studies, the prevalence of AI in university settings has been affirmed, as most students are familiar with and use AI tools to support information retrieval, enhance skills, and efficiently complete assignments. This aligns with the studies of Aydin and Karaarslan, as well as Grassini, regarding the ability of AI to optimize the learning process through personalization and continuous support.

Factors affecting students' use of AI, such as access to technology and the level of support from instructors, are also important elements influencing the frequency and purpose of AI tool usage. Social Sciences students tend to use AI more frequently due to the demands for information retrieval and writing skills, while Natural Sciences students primarily focus on AI tools that help explain and deepen their understanding of specialized knowledge. This difference suggests that AI is not only a versatile learning tool but also needs to be adjusted to meet the specific needs of different disciplines.

### *4.2. Analysis of Influencing Factors*

Furthermore, students' attitudes toward AI reflect their awareness of both the benefits and risks of this technology. While most students value the usefulness of AI and feel comfortable using it, concerns remain about the risk of becoming dependent on technology, particularly in terms of its impact on self-directed learning. This is consistent with the views of Bleumink and Shikhule regarding the importance of maintaining academic integrity when using AI. This concern highlights the urgent need to develop proper guidelines for AI usage, ensuring that students can leverage the benefits of the technology without negatively affecting their ability to learn independently.

### *4.3. Significance and Limitations of the Study*

Finally, while this study provides valuable insights into the current state and influencing factors of AI usage in learning, it still has some limitations. The sample size is small and may not be fully representative of students at other universities in Vietnam, and the survey method primarily relies on questionnaires, which could be affected by the respondents' subjective biases.

## 5. Conclusion and Recommendations

This study provides an in-depth look at the current state and attitudes of students at Thai Nguyen University of Education toward the use of artificial intelligence (AI) in learning. The results indicate that AI plays a significant role in helping students access information, improve skills, and enhance learning outcomes. Students express satisfaction and comfort when using AI, but they also voice concerns about dependence on this technology, particularly regarding self-directed learning and academic integrity. The differences in the level and purpose of AI usage between students in the Natural Sciences and Social Sciences disciplines highlight the importance of personalizing AI tools to suit the needs of each field of study.

To increase the effectiveness and sustainability of AI usage in learning, the university and instructors should develop detailed guidelines to use AI as a supportive tool, encouraging students to develop self-learning skills and independent thinking. Additionally, organizing training courses on AI usage skills is necessary to help students optimize the use of this tool and better prepare for future job requirements. Furthermore, AI should be integrated into the curriculum of subjects with high practical applications, allowing students to use technology creatively and responsibly. To maintain academic integrity, clear policies regarding AI usage in learning should be proposed to minimize the risks of cheating and over-reliance on technology. Finally, further studies should be conducted to assess the long-term impact of AI on students' skills and creative thinking, providing a foundation for improvements in the application of AI in higher education.

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## 7. Appendix

**SURVEY QUESTIONNAIRE ON STUDENTS' USE OF AI TOOLS**

*Hello students!*

We are conducting a study on the use of artificial intelligence (AI) tools in the learning process of students at Thai Nguyen University of Education. We kindly ask that you take some time to complete this questionnaire. All information you provide will be kept confidential and will only be used for research purposes.

Please respond to the questions based on your level of agreement, using the following scale:

1: Strongly Disagree 2: Disagree 3: Neutral 4: Agree 5: Strongly Agree

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**Group 1: AI Usage**

1.I frequently use AI tools in my learning process.

2. I have used AI tools such as ChatGPT, Gemini, or other AI tools in my learning.

3. The frequency of my use of AI tools has increased over the past year.

**Group 2: Purposes of AI Usage**

4. I use AI tools to assist in information retrieval.

5. I use AI tools to check spelling and grammar errors in my writing.

6. I use AI to explain and gain a deeper understanding of study topics.

7. I use AI to complete assignments or assist in group study sessions.

**Group 3: Effectiveness of AI Usage**

8. Using AI helps me complete assignments more efficiently.

9. AI helps me improve my writing skills and express ideas more clearly.

10. Using AI helps me save time in my learning process.

11. Thanks to AI, I feel more confident in grasping new knowledge.

**Group 4: Attitudes Toward AI**

12. I believe that AI is a useful support tool in learning.

13. I feel comfortable using AI in my learning process.

14. I am concerned that overuse of AI might affect my ability to learn independently.

15. I believe that AI will play a more significant role in future education.

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Thank you for participating in the survey!