

# EXPLORING AI IN EDUCATION: STUDENT PRACTICES AND CHALLENGES AT HANOI UNIVERSITY OF INDUSTRY

KHÁM PHÁ AI TRONG GIÁO DỤC: THỰC HÀNH VÀ THÁCH THỨC CỦA SINH VIÊN TẠI TRƯỜNG ĐẠI HỌC CÔNG NGHIỆP HÀ NỘI

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## ABSTRACT

Artificial Intelligence (AI) has become a powerful tool in the field of education, providing innovative methods to enhance learning, optimize research, and support academic activities. However, the effective and appropriate use of AI in universities remains a challenge. Many students lack awareness, skills, or support from universities to effectively utilize these tools. This paper examines the current use of AI in higher education in general, and among students at Hanoi University of Industry (HaUI) in particular. The current awareness, habits, usage patterns, challenges, and ethical concerns surrounding AI in academic environments are explored based on data collected through a student survey. The findings show a high level of familiarity with AI tools among students, with most using them for writing assistance, research, and problem-solving tasks. The discussion highlights the challenges, the need for universities to implement comprehensive AI training programs, establish clear ethical guidelines, provide better access to AI tools, and raise awareness of university resources. The paper also proposes solutions to address the challenges identified, such as creating personalized support systems, integrating AI into teaching and learning practices. These recommendations aim to help students optimize the exploitation of AI while promoting responsible and ethical usage.

**Keywords:** Artificial Intelligence (AI); academic activities; higher education; AI exploitation; ethical usage.

## TÓM TẮT

Trí tuệ nhân tạo (AI) đã trở thành một công cụ mạnh mẽ trong lĩnh vực giáo dục, cung cấp các phương pháp sáng tạo để nâng cao việc học, tối ưu hóa việc nghiên cứu và hỗ trợ các hoạt động học thuật. Tuy nhiên, việc sử dụng AI hiệu quả và phù hợp trong các trường đại học vẫn là một thách thức. Nhiều sinh viên còn thiếu nhận thức, kỹ năng hoặc sự hỗ trợ từ các trường đại học để sử dụng hiệu quả các công cụ này. Bài báo này xem xét việc sử dụng AI hiện nay trong giáo dục đại học nói chung và trong số sinh viên tại Trường Đại học Công nghiệp Hà Nội (HaUI) nói riêng. Mức độ nhận thức, thói quen, mô hình sử dụng, thách thức và mối quan ngại về đạo đức khi khai thác AI trong môi trường học thuật được khám phá dựa trên dữ liệu thu thập từ việc khảo sát sinh viên. Kết quả nghiên cứu cho thấy mức độ quen thuộc cao với các công cụ AI, hầu hết sinh viên đã sử dụng công cụ này để hỗ trợ viết, nghiên cứu và giải quyết vấn đề. Phần thảo luận nêu bật những thách thức, nhu cầu phải triển khai các chương trình đào tạo AI toàn diện, thiết lập các hướng dẫn đạo đức rõ ràng, cung cấp quyền truy cập tốt hơn vào các công cụ AI và nâng cao nhận thức về các nguồn lực của trường đại học. Bài báo cũng đề xuất các giải pháp để giải quyết các thách thức đã xác định, chẳng hạn như tạo ra các hệ thống hỗ trợ được cá nhân hóa, tích hợp AI vào các hoạt động giảng dạy, học tập. Các khuyến nghị này nhằm mục đích giúp sinh viên tối ưu hóa việc khai thác AI, đồng thời thúc đẩy việc sử dụng công nghệ này có trách nhiệm và có đạo đức.

**Từ khóa:** Trí tuệ nhân tạo (AI); hoạt động học thuật; giáo dục đại học; khai thác AI; sử dụng có đạo đức.

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## 1. INTRODUCTION

The integration of artificial intelligence (AI) into the educational environment has transformed the way students approach study and research. AI tools such as Grammarly, Turnitin, and research platforms such as Semantic Scholar provide students with useful resources for writing assignments, conducting research, and analyzing data. However, many students are still unaware of how to effectively utilize AI tools due to the lack of awareness or understanding of how these technologies work. Additionally, ethical issues associated with the use of AI in education like overreliance, plagiarism, and privacy concerns further complicate the integration of AI into academic activities. At Hanoi University of Industry, as well as in many other institutions, the rapid pace of AI adoption highlights a pressing need to address gaps in student awareness, ethical use, and institutional support. Without this understanding, universities risk leaving students unprepared to fully leverage AI's potential while ensuring responsible and ethical usage. Moreover, with AI's potential to revolutionize education, it is crucial to identify the barriers students face and develop targeted solutions that align with their needs and academic goals.

That is the reason why this paper focuses on exploring how students are using AI tools at Hanoi University of Industry, the challenges students face, and how higher education institutions can better guide students in using AI for academic purposes. Combining theoretical perspectives and quantitative data from student surveys via questionnaires, the paper will examine current practice contexts and make recommendations for improving the use of AI tools in higher education.

## 2. THEORETICAL PERSPECTIVES ON AI IN EDUCATION

There are a few theories that support the role of AI in education by explaining its potential benefits and limitations. Theories that value knowledge construction emphasize that learning is best accomplished through active, proactive engagement of learners. According to Wang, Lee, and Zhou [1], AI tools support this by providing personalized learning experiences that can tailor content to students' needs and interests. Research by Holmes, Bialik, and Fadel [2] also shows that AI provides customized feedback and guidance, allowing students to take control of their learning journey. These tools can adapt based on the student's learning pace, provide immediate support, and suggest new learning

paths. This personalized experience enhances learner autonomy and promotes active learning.

Sociocultural theories emphasize the importance of tools and media in shaping the learning experience. AI acts as a mediator that facilitates interactions between students and educational resources, acting as a "learning companion" that provides instant feedback and support [3]. Furthermore, AI's ability to promote collaborative learning through peer-to-peer interactions is more in line with sociocultural principles.

However, the use of AI in education is still considerably challenging. Luckin et al. [4] mentions that AI should be designed to complement human cognition rather than replace it. There are concerns that AI could undermine creativity, critical thinking and problem solving if students become overly reliant on these tools.

When discussing the future of AI in education, Luckin, Holmes, Griffiths and Forcier [4] have pointed out that educators need to play a central role in guiding the integration of AI, ensuring that human oversight is maintained to address issues such as algorithmic bias, data privacy and the balance between human and machine teaching. The authors stress that, while AI holds great promise, its success in education depends on its ethical implementation and the development of systems that complement rather than replace educators, ensuring that learning remains inclusive and equitable for all students.

In recent years, the role of AI in enhancing student engagement and performance has attracted considerable attention in higher education. Chen, Tallant, and Selig [5] highlight the increasing adoption of generative AI tools by students for learning purposes, such as idea generation, problem solving, and writing assistance. The study found that while students benefit from the efficiency and creativity that AI tools bring, challenges remain in AI literacy, ethical use, and integration into existing academic structures. AI literacy, or the ability to effectively and ethically use AI tools, plays a critical role in ensuring that students can make the most of these resources without compromising academic integrity. The study highlights the importance of university support through training and ethics guidance to promote responsible use of AI in academia.

Similarly, Ma and Siau [6] explore the transformative impact of AI not only in the classroom but also on

students' future careers. AI is reshaping the job market by automating tasks, requiring students to develop both technical skills and soft skills that are increasingly needed in AI-driven industries. The study highlights the need for higher education institutions to adapt their curricula to foster not only technical competencies such as AI literacy but also critical and creative thinking. As AI tools become more prevalent in academic activities, educational institutions must guide students in using AI responsibly while preparing them for the changing demands of the workforce.

### 3. RESEARCH METHODOLOGY

The study used a structured questionnaire to collect data from university students on their awareness, habits, usage patterns, and challenges related to AI tools. The questionnaire included both closed-ended and open-ended questions, allowing for the collection of quantitative and qualitative data. Closed-ended questions focused on awareness, frequency of use of AI, tasks for which students used AI, and challenges they faced in adopting the technology. Open-ended questions invited students to share their personal experiences and suggest solutions to improve the integration of AI into their studies. The answers to open-ended questions in the form of short text were then categorized into two main groups: university guide and AI integration.

The survey was distributed online to ensure a broad reach to students from a variety of disciplines. Data were collected from a sample of 240 students distributed evenly across a variety of disciplines as described in the following table. In this study, a sample size of 30 students per discipline was selected to ensure representation across various academic fields while maintaining manageability in data collection and quantitative analysis. This sample size strikes a balance between obtaining sufficient diversity in responses and the practical constraints of conducting a detailed exploratory study within the scope of this research. By including students from different disciplines, the study aims to capture potential variations in AI usage patterns, challenges, and perceptions that may arise due to discipline-specific requirements or learning environments. Although the questionnaire was distributed randomly online, which could lead to a broader pool of respondents, setting a fixed number of participants per discipline allows for equitable

representation and minimizes the risk of certain disciplines being over- or under-represented. This approach enhances the generalizability of the findings within the context of Hanoi University of Industry and ensures that the recommendations derived from the study are relevant across various fields of study. Results were analyzed quantitatively to identify trends and patterns in AI use, and qualitatively to gain deeper insights into students' experiences.

Table 1. Sample data proportional representation

Disciplines	Number of valid samples collected	Sample rate
Information technology	30	12.5%
Economics	30	12.5%
Languages	30	12.5%
Mechanical	30	12.5%
Electronics	30	12.5%
Tourism	30	12.5%
Fashion design	30	12.5%
Automobile	30	12.5%
<b>Total</b>	<b>240</b>	

### 4. FINDINGS

The findings reveal key insights into the current state of AI usage among university students, including awareness levels, habits, usage patterns, challenges, concerns, resources, guidance, and support from the university. The quantitative results of the survey are summarized in the Table 2.

Table 2. The current state of AI usage among students at HaUI

Category	Question	Response Options	Percentage of Respondents (%)
<b>Awareness of AI Tools</b>	Familiarity with AI tools	Very familiar	36.8%
		Somewhat familiar	56.2%
		Slightly familiar	7.0%
		Not familiar at all	0.0%
<b>Usage of AI Tools</b>	Frequency of AI tool usage	Daily	54.4%
		Weekly	31.6%
		Monthly	7.0%
		Rarely	7.0%
		Never	0.0%

<b>Tasks Using AI Tools</b>	Primary tasks AI is used for	Writing assistance (grammar, sentence structure)	70.2%
		Research (finding sources, data analysis)	69.2%
		Idea generation/brainstorming	42.1%
		Exam preparation	19.3%
		Problem-solving (math, coding)	70.5%
		Learning new skills	41.2%
<b>Challenges in Using AI</b>	Main challenges in using AI	Lack of knowledge on how to use AI	31.6%
		Ethical concerns (e.g., plagiarism, over-reliance)	43.9%
		Concerns about data privacy	33.3%
		Cost or access to premium tools	33.3%
<b>Ethical Concerns</b>	Level of concern about ethical issues in AI usage	Very concerned/Somewhat concerned	80.7%
		Slightly concerned/Not concerned at all	19.3%
<b>University Guide</b>	Clear guidelines on the ethical use of AI	Yes	31.6%
		No	28.1%
		Not sure	40.3%
<b>University Support</b>	Feeling supported by university in using AI	Very well supported	16.1%
		Somewhat supported	41.1%
		Not supported at all	14.3%
		Don't know if support is available	28.5%
<b>University Resources</b>	Awareness of AI workshops or training	Yes, attended workshops	23.2%
		Yes, but didn't attend	35.7%
		No/Not sure	41.1%
<b>Future Role of AI in Education</b>	AI becoming more important in education	Yes, definitely/Yes, somewhat	96.5%
		No/Not sure	3.5%
<b>Concerns About AI in Education</b>	Concerns about AI use in education	Reduced critical thinking skills	64.3%
		Decreased creativity	63.1%
		Over-reliance on AI	83.9%
		Data privacy issues	35.7%
		Lack of human interaction in learning	46.4%

Based on the data showed on the table, a breakdown of key insights is further taken into account as following:

- **Awareness of AI Tools:** The majority of respondents (56.2%) were somewhat familiar with AI tools, while 36.8% were very familiar. Only 7% had slight familiarity, and no respondents indicated being completely unfamiliar. This suggests a high level of awareness among students, though a notable portion may still lack deep knowledge of AI tools.

- **Frequency of AI Tool Usage:** Over half of the students (54.4%) reported using AI tools daily, while 31.6% used them weekly. A small proportion (7%) used them monthly or rarely. This highlights a consistent engagement with AI in academic work, showing its integration into daily learning activities. There is no doubt that students' awareness of AI is linked remarkably with their usage frequency. The students with more awareness of AI tend to use it more frequently than those who have less knowledge about this technology.

- **Tasks Using AI Tools:** AI tools were predominantly used for problem-solving (70.5%), writing assistance (70.2%), and research (69.2%). Other tasks, such as idea generation (42.1%) and learning new skills (41.2%), were also common. Exam preparation (19.3%) showed lower engagement, likely indicating AI is perceived more as a creative and research-enhancing tool rather than a direct study aid.

- **Challenges in Using AI:** The main challenges students faced were ethical concerns (43.9%), followed by data privacy concerns (33.3%) and the cost of accessing premium tools (33.3%). These findings indicate that while AI offers significant benefits, students are wary of over-reliance and potential misuse.

- **Ethical Concerns:** A majority (80.7%) expressed concern over ethical issues such as plagiarism or over-reliance on AI, while 19.3% were less concerned. This may reflect students' awareness of potential academic integrity issues.

- **University Guidance and Support:** Only 31.6% of respondents said their university provided clear guidelines on the ethical use of AI. Meanwhile, 40.3% were unsure about the existence of such guidelines. In terms of support, only 16.1% of students felt very well supported by their universities, while 28.5% didn't know if support was available at all.

- **AI Workshops and Training:** A significant proportion (41.1%) of students were unaware of any AI workshops or

training offered by their universities. 35.7% knew about such resources but did not attend them, showing that there is both a lack of awareness and engagement with existing training programs.

- **Future Role of AI:** The majority (96.5%) of respondents believed that AI will become increasingly important in education, indicating that students recognize the growing relevance of AI tools in the academic landscape.

- **Concerns about AI in Education:** The main concerns expressed were over-reliance on AI (83.9%), reduced critical thinking skills (64.3%), and decreased creativity (63.1%). Concerns about the lack of human interaction in learning (46.4%) and data privacy (35.7%) were also notable.

Additionally, when being asked about the recommendations to improve the specific guidance or resources that are lacking, a considerable number of students suggest that there should be more training workshops or videos on AI usage to help them exploit and practice this advanced technology effectively without violating plagiarism regulations. Some students even suggest inviting AI experts to provide professional guidance and support. Access to premium resources offered by AI is also proposed by few students. To make better use of AI, students indicate that the university should build their own AI system to enhance searching learning materials from the private data managed by the university. This would help to meet the needs of each individual inside the university more properly.

Regarding the integration of AI into academic activities, most students reveal that they expect this should be implemented more deeply to help them improve their academic performance. However, some of the students mention that the use of AI should be guided and controlled strictly to avoid over-reliance or ethical issues which may somehow be involved accidentally.

## 5. DISCUSSION AND RECOMMENDATIONS

The findings show that students at universities are increasingly aware of and using AI tools, especially for writing, research, and problem-solving tasks. However, despite this high level of engagement, students still face a number of challenges that affect their ability to fully integrate AI into their learning routines. The top concerns are ethical issues, especially related to over-reliance on AI and plagiarism, as well as data privacy. These issues suggest that while students recognize the power of AI,

they are aware of its potential downsides and are concerned about maintaining academic integrity.

In terms of support, there is a significant gap in the guidance provided by universities. Only 31.6% of students believe their university provides clear ethical guidance for using AI, and less than half feel supported in learning how to use these tools effectively. This highlights the urgent need for universities to develop comprehensive training programs and clear policies around the ethical use of AI in their academic work. Furthermore, the relatively low attendance rates at AI workshops or training sessions suggest that there may be a disconnect between the resources provided and students' perceptions or motivations to engage with them.

Finally, the fact that most respondents believe that AI will play a more important role in education in the future suggests that students are aware of the changing landscape of academic tools. However, this recognition comes with the fear that AI may lead to a reduction in creativity, critical thinking, and human interaction – skills that are at the core of the educational process.

Referring to the findings and discussion above, the following recommendations can help universities guide students in using AI effectively and ethically for academic purposes:

### 1. Develop Comprehensive AI Training Programs

The findings highlight a significant gap in students' knowledge about AI tools, with many unaware of existing training opportunities (41.1%). Universities should prioritize creating structured AI training programs tailored to different academic disciplines. These programs should address foundational and advanced AI usage, enabling students to effectively utilize AI tools for research, writing assistance, and problem-solving. Integrating these sessions into the curriculum and offering them as part of orientation programs would ensure students gain the necessary skills early in their academic journey.

### 2. Establish Clear Ethical Guidelines for AI Use

Ethical concerns, including overreliance on AI and plagiarism (43.9%), data privacy (33.3%), emerged as prominent challenges in the findings. Universities must develop clear, discipline-specific ethical guidelines that emphasize academic integrity, data security, and the responsible use of AI tools. These guidelines should be actively communicated to students through workshops

and course materials, helping them understand the balance between leveraging AI and maintaining critical thinking and originality in their work. Besides, universities should encourage assignments and activities that require students to critically evaluate AI-generated outputs and demonstrate independent problem-solving. Simultaneously, educational sessions on privacy and data security should equip students with strategies to protect their personal information when using AI tools.

### 3. Increase Accessibility to AI Tools and Resources

Challenges related to the cost and accessibility of AI tools were also frequently reported (33.3%). To address this, universities should negotiate institutional licenses for essential AI platforms like Grammarly and Turnitin, ensuring that all students have access to premium tools. Additionally, promoting open-source AI tools can provide cost-effective alternatives for students. To increase utilization, awareness campaigns and flexible workshop formats should be introduced to encourage students to explore these resources.

### 4. Integrate AI into Teaching and Learning

To bridge the gap between theoretical knowledge and practical application, faculty should incorporate AI tools into classroom exercises and assignments to create personalized support systems. This hands-on approach allows each student to learn how AI can enhance, rather than replace, critical thinking, creativity, and judgment. Faculty can guide students in understanding the appropriate contexts for AI use, ensuring they develop skills for using AI responsibly.

These focused recommendations align directly with the findings and aim to address key challenges while optimizing AI's potential in academic settings. By concentrating efforts on these areas, universities can better support students in using AI productively and ethically.

## 6. CONCLUSION

The rapid development of Artificial Intelligence (AI) presents significant opportunities and challenges in higher education. Findings from this study highlight that while students are increasingly familiar with AI tools, their use is often limited by the lack of knowledge, ethical concerns, and inadequate support from universities. Most students rely on AI for tasks such as writing, research, and problem-solving, but face challenges in integrating AI into their academic work and understanding its ethical implications. To address these

issues, universities must take a proactive approach to equipping students with the skills and knowledge needed to use AI effectively. This includes providing comprehensive AI training programs, establishing clear ethical guidelines, and providing greater access to AI tools. Additionally, raising awareness of available resources and increasing faculty engagement in AI integration can further support students in their learning journey. As AI continues to shape the future of education, it is important for institutions to promote the responsible use of AI, ensuring that students are prepared to take advantage of its benefits while maintaining academic integrity and critical thinking.

The findings from this study also imply that AI will play an increasingly important role in education and that universities must adapt their practices to provide the necessary support and guidance. By addressing the challenges identified, academic institutions can ensure that students are well-equipped to navigate the changing AI landscape in higher education responsibly and effectively.

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## REFERENCES

- [1]. Wang T., Lee J., Zhou X., "The impact of AI-driven learning platforms on student engagement and performance," *Journal of Educational Technology & Society*, 25(3), 45-59, 2022.
- [2]. Holmes W., Bialik M., Fadel C., *Artificial intelligence in education: Promises and implications for teaching and learning*, The Center for Curriculum Redesign, 2021.
- [3]. Zawacki-Richter O., Marín V. I., Bond M., Gouverneur F., "Systematic review of research on artificial intelligence applications in higher education - Where are the educators?," *International Journal of Educational Technology in Higher Education*, 20(1), 12-24, 2023.
- [4]. Luckin R., Holmes W., Griffiths M., Forcier L. B., *Artificial intelligence and the future of learning: Expert panel report*. Centre for Research in Educational AI and Advanced Technologies, University College London, 2021.
- [5]. Chen K., Tallant A. C., Selig I., "Exploring generative AI literacy in higher education: Student adoption, interaction, evaluation, and ethical perceptions," *Journal of Educational Technology & Society*, 2024.
- [6]. Ma Y., Siau K., "AI in education and its implications on student careers," *Journal of Educational Technology Research*, 12(2), 34-45, 2018.

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## THÔNG TIN TÁC GIẢ

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