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The Impact of Artificial Intelligence on University Students' Learning Autonomy and Academic Engagement: Evidence from Vietnam

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ABSTRACT

The rapid development of artificial intelligence (AI) has significantly transformed students' learning practices in higher education. AI tools such as ChatGPT, Gemini, Copilot, Grammarly, and AI-based learning platforms are increasingly used to support information searching, content summarization, assignment preparation, language correction, and self-directed learning. This study examines the perceived impact of AI on university students' learning autonomy and academic engagement in Vietnam. A mixed-methods design was adopted, combining quantitative and qualitative data. Data were collected through a structured questionnaire distributed via Google Forms to university students who had experience using AI tools for academic purposes. The questionnaire included closed-ended questions measuring AI usage patterns, perceived usefulness, learning autonomy, and academic engagement, as well as open-ended questions exploring students' experiences, concerns, and suggestions. Quantitative data were analyzed using descriptive statistics, including frequency and percentage calculations, while qualitative responses were analyzed using thematic analysis. The findings indicate that AI supports students by saving time, improving access to learning resources, enhancing independent learning, and increasing confidence in academic tasks. However, students also expressed concerns about inaccurate information, over-reliance on AI, reduced critical thinking, academic dishonesty, and data privacy. The study emphasizes the need for responsible AI integration in higher education through AI literacy training, clear academic integrity guidelines, validation protocols, and human-centered teaching strategies. The findings contribute to the growing literature on AI in education by highlighting both the benefits and risks of AI use in the Vietnamese university context.

1. Introduction

Artificial intelligence has become one of the most influential technologies in contemporary education. In higher education, AI tools are increasingly used to support teaching, learning, assessment, and academic communication. Students now use AI-powered applications to search for information, summarize academic materials, translate documents, generate ideas, check grammar, prepare presentations, and receive immediate explanations of complex

concepts. These developments reflect the broader transformation of education through digital technologies and intelligent learning systems.

AI in education offers substantial opportunities. Adaptive learning platforms, intelligent tutoring systems, chatbots, and generative AI tools can provide personalized feedback, recommend learning resources, and support students in managing academic tasks more efficiently (Holmes et al., 2019; Luckin et al., 2016; Zawacki-Richter et al., 2019). Prior studies suggest that AI can enhance learning efficiency, improve student engagement, and support personalized learning experiences by adapting educational content to students' needs and learning patterns (Hwang et al., 2020; Chen et al., 2020). In addition, generative AI tools such as ChatGPT have changed the way students interact with information, allowing them to receive immediate responses, simplified explanations, and structured academic support (Qadir, 2023; Wu, 2023).

However, the integration of AI in education also raises several concerns. First, AI-generated content may contain inaccurate, incomplete, or biased information, requiring students to verify outputs carefully. Second, excessive reliance on AI may reduce students' independent thinking, creativity, and problem-solving skills. Third, the use of AI for assignments and examinations raises questions about academic integrity, plagiarism, and authorship. Finally, AI systems may involve data privacy risks, particularly when students share personal information or academic content on digital platforms (O'Neil, 2016; Selwyn, 2022; Williamson, 2017).

In the Vietnamese higher education context, AI adoption among students has increased rapidly, especially after the widespread use of generative AI tools. Many students use AI to support self-study, academic writing, foreign language learning, and exam preparation. Nevertheless, Vietnamese universities are still developing formal guidelines for AI use in learning and assessment. This creates a practical need to understand how students perceive AI, how they use it, and what benefits and challenges they experience.

While previous studies have examined AI's role in academic performance and personalized learning, less attention has been paid to its influence on learning autonomy and academic engagement. Learning autonomy refers to students' ability to take responsibility for their own learning, including setting goals, selecting resources, monitoring progress, and evaluating learning outcomes. Academic engagement refers to students' behavioral, emotional, and cognitive involvement in academic activities, including participation in class, interaction with peers and lecturers, and motivation to complete learning tasks. AI may enhance both autonomy and engagement by providing flexible, individualized, and immediate learning support. At the same time, it may weaken autonomy if students become passive users of AI-generated answers.

Therefore, this study aims to explore the impact of AI on university students' learning autonomy and academic engagement in Vietnam. Specifically, the study addresses the following research questions: RQ1. How frequently do university students use AI tools in academic activities? RQ2. What types of AI tools are most commonly used by students? RQ3. How do students perceive the impact of AI on their learning autonomy? RQ4. How do students perceive the impact of AI on their academic engagement? RQ5. What concerns and challenges do students experience when using AI for learning?

2. Materials and Methods

2.1. Sample

The study used a purposive sampling method to select students who had experience using AI tools for academic purposes. The participants were undergraduate students from Vietnamese universities, mainly from business administration, economics, information technology, and education-related programs. These fields were selected because students in these areas frequently use digital tools for searching information, preparing assignments, writing reports, and conducting group projects.

A total of 150 valid responses were collected. Participants included second-, third-, and fourth-year students. These groups were considered appropriate because they had sufficient exposure to university learning requirements and were likely to have used AI tools in academic activities. Since the study employed non-probability sampling, the findings should be interpreted as exploratory and cannot be generalized to all Vietnamese university students. However, the sample provides useful initial insights into students' perceptions and experiences of AI-supported learning.

2.2. Data Collection and Research Instrument

Data were collected using a self-administered questionnaire distributed through Google Forms. The questionnaire was designed to capture both quantitative and qualitative information. It consisted of 12 items, including eight closed-ended questions and four open-ended questions.

The closed-ended questions focused on whether students used AI, the types of AI tools used, frequency of use, perceived usefulness, perceived impact on learning autonomy, perceived impact on academic engagement, and major concerns related to AI use. Responses were measured using categorical choices and five-point Likert-type scales ranging from 1 = very low to 5 = very high.

The open-ended questions were designed to collect richer qualitative insights into students' experiences. These questions asked students to describe how AI supported their self-learning, how AI influenced their participation and collaboration, what difficulties they encountered, and what suggestions they had for using AI responsibly in higher education.

Before distribution, the questionnaire was reviewed by two lecturers with experience in educational technology and research methodology to ensure clarity, relevance, and content validity. Minor wording adjustments were made to improve readability.

2.3. Data Analysis

Quantitative data were analyzed using descriptive statistics, including frequencies and percentages. This allowed the study to identify general patterns in AI usage, perceived benefits, and concerns among students.

Qualitative data from open-ended questions were analyzed using thematic analysis following the approach suggested by Braun and Clarke (2006). The analysis involved reading responses carefully, identifying meaningful units, developing initial codes, grouping codes into broader themes, reviewing themes, and interpreting the findings. Both vertical and horizontal analyses were applied. Vertical analysis focused on individual responses, while horizontal analysis compared responses across the dataset to identify recurring patterns.

To enhance reliability, the coding process focused on repeated meanings rather than isolated opinions. Themes were developed based on frequency, relevance to the research questions, and conceptual clarity. The integration of quantitative descriptive statistics and qualitative thematic analysis provided a more comprehensive understanding of students' experiences with AI in learning.

3. Results

3.1. Use of AI Tools in Academic Activities

The results show that most students had used AI tools in their academic activities. Specifically, 138 out of 150 respondents, accounting for 92.0%, reported that they had used AI for learning purposes. Only 12 students, or 8.0%, stated that they rarely or never used AI tools.

Regarding frequency of use, 34.7% of students reported using AI several times per week, while 26.0% used AI daily. Another 24.0% used AI several times per month, and 15.3% used AI rarely. These results suggest that AI has become a regular learning support tool for many university students.

Table 1. Frequency of AI use in academic activities

Frequency of use	Frequency	Percentage
Daily	39	26.0%
Several times per week	52	34.7%
Several times per month	36	24.0%
Rarely	23	15.3%
Total	150	100%

The most commonly used AI tool was ChatGPT, used by 82.0% of students. This was followed by Gemini at 41.3%, Grammarly or QuillBot at 38.7%, Copilot at 24.0%, AI-based learning platforms at 28.7%, and other AI tools at 12.0%.

Table 2. Types of AI tools used by students

AI tools	Frequency	Percentage
ChatGPT	123	82.0%
Gemini	62	41.3%
Grammarly/QuillBot	58	38.7%
AI-based learning platforms	43	28.7%
Copilot	36	24.0%
Other tools	18	12.0%

The results indicate that conversational AI tools are the most popular among students. This may be because they are easy to use, flexible, and applicable to various academic tasks such as summarizing texts, explaining theories, generating ideas, and preparing assignments.

3.2. Perceived Impact of AI on Learning Autonomy

Students generally perceived AI as helpful for improving learning autonomy. Approximately 78.7% of respondents agreed or strongly agreed that AI helped them become more proactive in learning. Students explained that AI allowed them to search for explanations independently without waiting for lecturers or classmates. They also reported that AI helped them review lessons, plan assignments, and understand difficult concepts.

The thematic analysis of open-ended responses identified four main ways in which AI supported learning autonomy: saving time, supporting self-study, improving learning organization, and increasing confidence.

Table 3. Main benefits of AI for learning autonomy

Thematic categories	Frequency	Example responses
Saving learning time	61	AI helps me summarize long documents and find information faster.
Supporting self-study	49	AI explains difficult concepts when I study alone.
Improving learning organization	32	AI helps me outline reports and plan assignments.
Increasing confidence	24	AI helps me prepare before class discussions or presentations.

The most frequent theme was time saving. Students noted that AI reduced the time needed to search for materials, translate documents, and summarize academic content. The second major theme was support for self-study. Students used AI as a learning assistant to explain concepts, provide examples, and suggest learning resources. These findings suggest that AI can enhance students' ability to manage their own learning process.

However, some students also expressed concern that AI may reduce genuine autonomy if they use it passively. For example, several respondents stated that they sometimes accepted AI-generated answers without checking or thinking critically. This indicates that AI can support autonomy only when students use it as a tool for learning rather than a substitute for learning.

3.3. Perceived Impact of AI on Academic Engagement

The findings also show that AI influenced students' academic engagement. Around 72.0% of respondents agreed or strongly agreed that AI increased their interest in learning. Students reported that AI made learning more accessible, interactive, and less stressful. They also stated that AI helped them participate more effectively in group work and classroom activities by preparing ideas and materials in advance.

The thematic analysis identified three major impacts of AI on academic engagement: increased participation, improved collaboration, and enhanced motivation.

Table 4. Impact of AI on academic engagement

Thematic categories	Frequency	Example responses
Increased participation	46	AI helps me prepare ideas before class, so I feel more willing to speak.
Improved collaboration	38	AI helps our group divide tasks and develop presentation content.
Enhanced motivation	35	AI makes learning more interesting because I can ask questions anytime.
Limited or neutral impact	21	AI is useful, but it has not changed how I interact with classmates.

Students explained that AI helped them prepare for class discussions, generate ideas for assignments, and improve group project efficiency. Some students used AI to clarify concepts before asking lecturers more specific questions. This suggests that AI may indirectly improve student-lecturer interaction by helping students become better prepared.

Nevertheless, a group of students reported limited or neutral effects. They considered AI useful for completing tasks but did not feel that it significantly changed their academic relationships or class participation. This implies that AI does not automatically create engagement; its impact depends on how students integrate it into their learning habits.

3.4. Concerns and Challenges Related to AI Use

Despite recognizing the benefits of AI, students expressed several concerns. The most common concern was inaccurate information, reported by 54.7% of students. Other concerns included over-dependence on AI, reduced critical thinking, academic dishonesty, and data privacy.

Table 5. Main concerns about using AI in learning

Concerns	Frequency	Percentage
Inaccurate information	82	54.7%
Over-dependence on AI	64	42.7%
Reduced critical thinking	53	35.3%
Academic dishonesty	39	26.0%
Data privacy concerns	22	14.7%

The qualitative responses further clarified these concerns. Four main themes were identified: accuracy of AI-generated information, excessive dependence, academic integrity risks, and lack of contextual understanding.

Table 6. Challenges encountered when using AI

Thematic categories	Frequency	Example responses
Accuracy of information	59	Sometimes AI gives wrong answers, so I need to check other sources.
Over-dependence on AI	41	I am afraid I may rely too much on AI instead of thinking by myself.
Academic integrity risks	28	Some students may copy AI answers directly into assignments.
Lack of contextual understanding	19	AI does not always understand the specific requirements of my course.
Privacy and ethical concerns	15	I worry about sharing personal or academic information with AI tools.

The most serious concern was the accuracy of AI-generated content. Students reported that AI sometimes provided outdated, irrelevant, or fabricated information. This finding is consistent with prior research emphasizing the need to verify AI outputs before using them in academic work (Qadir, 2023; Wu, 2023). Another important concern was over-dependence. Students worried that frequent use of AI might weaken their ability to analyze, write, and solve problems independently.

3.5. Suggestions for Responsible AI Use in Higher Education

Students provided several suggestions for improving the use of AI in higher education. Thematic analysis identified four main categories: AI literacy training, clear academic guidelines, responsible and limited use, and lecturer support.

Table 7. Suggestions for improving AI use in higher education

Thematic categories	Frequency	Example responses
AI literacy training	47	Students should be trained to use AI correctly and check information.
Clear academic guidelines	42	Universities should explain when AI use is allowed and when it is not.
Responsible and limited use	36	AI should support learning, not replace students' own thinking.
Lecturer support	29	Lecturers should guide students on how to use AI for assignments.
Reliable AI tools	18	Universities should recommend trustworthy AI platforms.

Students emphasized that universities should not completely ban AI, because it is already widely used and can support learning effectively. Instead, they suggested that institutions provide clear rules and practical training. This includes teaching students how to ask better prompts, evaluate AI-generated content, cite AI-assisted work when appropriate, and avoid plagiarism.

4. Discussion

This study explored the perceived impact of AI on university students' learning autonomy and academic engagement in Vietnam. The results indicate that AI has become a common academic tool among students. Most respondents used AI regularly, particularly ChatGPT, Gemini, Grammarly, QuillBot, and AI-based learning platforms. This

finding reflects the growing role of AI in higher education and is consistent with previous studies showing the increasing adoption of AI-supported learning technologies (Chen et al., 2020; Holmes et al., 2019; Zawacki-Richter et al., 2019).

The first major finding is that AI can support learning autonomy. Students used AI to summarize materials, explain concepts, search for information, organize assignments, and prepare for class activities. These functions help students become more independent in managing their learning process. AI can act as a personalized learning assistant, allowing students to access explanations and resources at any time. This finding aligns with prior research suggesting that AI can support personalized learning and improve learning efficiency (Hwang et al., 2020; Luckin et al., 2016).

The second major finding is that AI may enhance academic engagement. Students reported that AI helped them participate more confidently in class, collaborate more effectively in group projects, and feel more motivated to learn. AI tools can reduce barriers to participation by helping students prepare ideas, clarify knowledge, and improve communication. However, the findings also show that AI's impact on engagement is not automatic. Some students viewed AI as useful but not transformative. This suggests that AI should be integrated into pedagogical activities rather than used merely as an individual support tool.

The third major finding concerns the risks of AI use. Students were particularly concerned about inaccurate information, over-reliance, reduced critical thinking, academic dishonesty, and data privacy. These concerns are consistent with the literature on AI ethics and responsible AI integration in education (O'Neil, 2016; Selwyn, 2022; Williamson, 2017). AI-generated content may appear fluent and convincing but still contain errors. Therefore, students need to develop digital and AI literacy skills, including the ability to evaluate, verify, and ethically use AI-generated information.

The findings have several practical implications. First, universities should provide AI literacy training for students and lecturers. Such training should focus not only on technical use but also on critical evaluation, responsible prompting, academic integrity, and ethical awareness. Second, universities should develop clear guidelines on acceptable and unacceptable uses of AI in assignments, examinations, and research activities. Third, lecturers should redesign assessment tasks to emphasize critical thinking, reflection, application, and originality. Finally, AI should be positioned as a complementary learning tool rather than a replacement for human teaching, peer interaction, and independent thinking.

This study also has limitations. The sample was limited to 150 students and used purposive sampling, which restricts generalizability. In addition, the study relied on self-reported data, which may be influenced by subjective perceptions. Future studies should use larger and more diverse samples across different universities, disciplines, and regions. Longitudinal research could also examine how AI use affects students' learning autonomy, engagement, academic performance, and critical thinking over time.

5. Conclusions

This study examined the impact of AI on university students' learning autonomy and academic engagement in Vietnam. The findings show that AI tools are widely used by students and are perceived as beneficial for saving time, supporting self-study, organizing academic tasks, and increasing confidence in learning. AI also contributes to academic engagement by helping students prepare for class, participate in discussions, and collaborate in group work.

However, the study also highlights important challenges. Students are concerned about inaccurate AI-generated information, excessive dependence on AI, reduced critical thinking, academic dishonesty, and privacy risks. These concerns indicate that the value of AI in education depends not only on technological availability but also on responsible use, institutional guidance, and students' critical awareness.

To maximize the benefits of AI, higher education institutions should develop structured AI literacy programs, establish academic integrity guidelines, encourage responsible AI use, and support lecturers in integrating AI into teaching practices. AI should be used to complement, not replace, human learning, critical thinking, and academic

interaction. A balanced approach is necessary to ensure that AI contributes to more autonomous, engaged, and responsible learners in the digital age.

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