

EVALUATE ADOPTION ACTIVE TEACHING AND LEARNING METHODS IN COLLEGES AND UNIVERSITIES IN VIETNAM: A CASE STUDY

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ARTICLE INFO		ABSTRACT
Received:	04/6/2024	This research article explores the potential of active learning pedagogies to enhance student engagement, knowledge retention, and essential skill development in higher education. These learner-centered approaches, such as experiential, project-based, and inquiry-based learning, contrast with traditional lecture-based methods that prioritize passive information transfer. Active learning engages students in hands-on activities, real-world problem-solving, and investigative processes, fostering critical thinking, collaboration, and self-directed learning. The authors argue that successful implementation requires a mindset shift, institutional support, and resources. Instructors need training and flexibility to facilitate active learning effectively, while curricula must balance content delivery and active learning opportunities. Fostering a culture of pedagogical innovation and collaboration among faculty is crucial for sharing best practices and continuous improvement. The research concludes that adopting active learning methods in higher education involves instructional strategies, institutional commitment, resource allocation, stakeholder engagement, and ongoing evaluation and refinement.
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Active learning		
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ĐÁNH GIÁ PHƯƠNG PHÁP DẠY VÀ HỌC TẬP TÍCH CỰC Ở CÁC TRƯỜNG CAO ĐẲNG VÀ ĐẠI HỌC Ở VIỆT NAM: MỘT NGHIÊN CỨU TRƯỜNG HỢP

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THÔNG TIN BÀI BÁO		TÓM TẮT
Ngày nhận bài:	04/6/2024	Bài viết nghiên cứu này khám phá tiềm năng của các phương pháp sư phạm học tập tích cực nhằm nâng cao sự tham gia của sinh viên, khả năng ghi nhớ kiến thức và phát triển các kỹ năng thiết yếu trong giáo dục đại học. Những phương pháp tiếp cận lấy người học làm trung tâm, chẳng hạn như học tập dựa trên trải nghiệm, dựa trên dự án và dựa trên yêu cầu, trái ngược với các phương pháp dựa trên bài giảng truyền thống ưu tiên truyền tải thông tin thụ động. Học tập tích cực thu hút học sinh tham gia vào các hoạt động thực hành, giải quyết vấn đề trong thế giới thực và các quá trình điều tra, thúc đẩy tư duy phản biện, hợp tác và học tập tự định hướng. Các tác giả cho rằng việc thực hiện thành công đòi hỏi phải thay đổi tư duy, hỗ trợ về thể chế và nguồn lực. Người hướng dẫn cần được đào tạo và linh hoạt để tạo điều kiện học tập tích cực một cách hiệu quả, trong khi chương trình giảng dạy phải cân bằng giữa việc cung cấp nội dung và cơ hội học tập tích cực. Thúc đẩy văn hóa đổi mới sư phạm và hợp tác giữa các giảng viên là rất quan trọng để chia sẻ những thực tiễn tốt nhất và cải tiến liên tục. Nghiên cứu kết luận rằng việc áp dụng các phương pháp học tập tích cực trong giáo dục đại học bao gồm các chiến lược giảng dạy, cam kết của tổ chức, phân bổ nguồn lực, sự tham gia của các bên liên quan cũng như đánh giá và sàng lọc liên tục.
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TỪ KHÓA		
Học tập tích cực		
Học tập trải nghiệm		
Học tập dựa trên dự án		
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1. Introduction

Active learning methods, such as experiential learning, project-based learning, and inquiry-based learning, have gained significant attention in global higher education due to their potential to enhance student engagement, knowledge retention, and the development of essential skills [1] - [3]. However, in Vietnam, the higher education system still heavily relies on traditional teaching methods that focus on content delivery through lectures and mechanical memorization [4], [5]. Despite efforts to modernize education, many Vietnamese universities and colleges continue to employ teacher-centered approaches [4], [5], which often fail to provide opportunities for students to actively participate, experience real-world situations, and develop critical thinking and practical skills [6], [7].

Several studies have explored the application of active learning methods in Vietnam [8], [9], but a comprehensive understanding of their implementation and effectiveness in specific contexts is lacking [10], [11]. This study aims to investigate the implementation and effectiveness of active teaching and learning methods at selected Vietnamese higher education institutions through case studies [12], [13].

2. Research Methodology

The study conducted during the 2022-2023 school year, focused on three Vietnamese higher education institutions known for their adoption of active learning methods: Hanoi University of Science and Technology (Engineering), National Economics University (Economics), and Hanoi University of Education (Pedagogy). To gather comprehensive data, the researchers employed a multi-faceted approach, including 18 classroom observations across courses and instructors, semi-structured interviews with 12 experienced lecturers (4 from each school), group discussions with 30 students (10 from each school), and an online survey administered to 200 students (approximately 67 from each school) enrolled in courses that applied active learning methods. This diverse data collection strategy allowed the researchers to gain insights into the implementation and effectiveness of active learning methods from both the instructors' and students' perspectives, encompassing motivations, approaches, challenges, and outcomes.

The results of an online survey conducted among students to gauge their perceptions and experiences with active learning methods. The survey assessed three key criteria: learning attitude, participation level, and self-assessed learning outcomes (Table 1).

Table 1. *Online survey for students about active learning*

Criteria	Grouping	Number (students)	Percentage (%)
Learning Attitude	Positive	140	70
	Neutral	40	20
	Negative	20	10
Participation level	High	120	60
	Average	60	30
	Low	20	10
Self-assessed learning outcomes	Clearly improved	100	50
	Partially improved standards	70	35
	No improvement	30	15

(Source: Survey results)

The data analysis process employed a mixed-methods approach to ensure the integrity and reliability of the findings. Qualitative data from interviews, observation records, and group discussions were analyzed using thematic analysis to identify recurring patterns and themes. Concurrently, quantitative data from online surveys underwent descriptive statistical analysis to summarize demographic information and overall response patterns. To examine differences in student perceptions and outcomes based on factors such as institution, course, and active learning

practices, inferential statistical analyses, including Mann-Whitney U tests, were conducted. The integration of qualitative and quantitative results allowed for a comprehensive understanding of active learning implementation in the studied institutions. Throughout the analysis process, researchers engaged in peer debriefing to enhance the credibility of the findings, and the final interpretation considered both qualitative insights and quantitative trends to provide a holistic view of the research outcomes.

3. Results and Discussion

3.1. Implementation of active learning and teaching methods in the case study institutions

The case study findings revealed that the three Vietnamese universities employed various active learning strategies to varying degrees across different courses and programs.

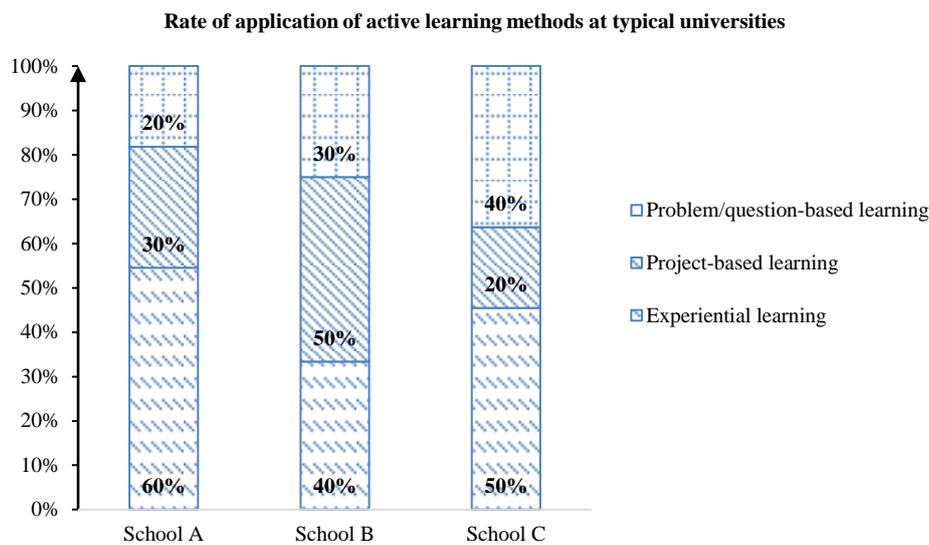


Figure 1. Rate of application of active learning methods at typical universities
(Source: Survey results)

The adoption rates of different active learning methods across the three universities studied. The graph clearly shows that experiential learning is the most widely implemented approach, followed by project-based learning, while inquiry-based learning methods are used less frequently. This distribution likely reflects the relative ease of implementation and perceived effectiveness of each method in the Vietnamese higher education context (Figure 1).

3.1.1. Experiential learning methods

All three institutions incorporated experiential learning activities, such as laboratory experiments, field trips, and simulations, particularly in science, engineering, and vocational courses. For example, engineering students at Hanoi University of Science and Technology participated in hands-on projects where they designed and built prototypes, while education students at Hanoi University of Education conducted microteaching simulations.

3.1.2. Project-based learning methods

Project-based learning was most prominently used in business and engineering programs. At National Economics University, business students worked in teams to develop comprehensive marketing plans for local companies, integrating knowledge from multiple courses. Similarly, engineering capstone courses at Hanoi University of Science and Technology required students to complete design projects that addressed real-world problems.

3.1.3. Inquiry-based learning methods

Inquiry-based learning approaches, such as case studies and research projects, were observed across various disciplines, although their implementation was less widespread compared to experiential and project-based learning. For instance, education students at Hanoi University of Education analyzed and proposed solutions to classroom management case scenarios, fostering their problem-solving and critical thinking skills.

This breakdown illustrates how different disciplines incorporate various active learning approaches. The data shows adoption rates for experiential, project-based, and research-based learning methods across technical, business, and pedagogical fields (Table 2).

Table 2. Rate of application of active learning methods by training department

Methods	Technical (%)	Business (%)	Pedagogy (%)
Learning through experience	85	76	82
Learning through projects	68	72	56
Learning through research	42	51	48

(Source: Survey results)

3.2. Evaluation of effectiveness, challenges, and facilitators

Data from classroom observations, instructor interviews, and student surveys consistently indicated that active learning methods enhanced student engagement, knowledge retention, and the development of essential skills compared to traditional lecture-based instruction.

Comparative analysis of the effectiveness of active learning methods versus traditional teaching methods. The data encompass various criteria, including student participation, test scores, and skill development, providing a comprehensive view of the impact of active learning approaches (Table 3).

Table 3. Evaluating the effectiveness of active learning methods

Criteria	Positive method	Traditional method	p-value
Percentage of students actively participating (%)	78.5	45.2	-
Average test score	8.2	7.4	< 0.05
Problem solving skills (1-5)	4.35	-	-
Critical thinking (1-5)	4.28	-	-
Teamwork skills (1-5)	4.42	-	-

(Source: Survey results)

However, instructors and students reported several challenges in implementing active learning approaches, including: Lack of instructor training and experience in facilitating active learning activities; Resistance from students accustomed to passive learning environments; Limited resources and infrastructure to support active learning (e.g., laboratory facilities, technology); Time constraints due to content-heavy curricula.

The primary challenges faced by lecturers when implementing active learning methods. These insights are crucial for understanding the barriers to wider adoption of these pedagogical approaches in Vietnamese higher education institutions (Table 4).

Table 4. Challenges in implementing active learning methods

Challenge	Percentage of lecturers having difficulties (%)
Lack of applicable skills and experience	75.0
Difficulty in attracting student participation	62.5
Concerns about covering enough content due to time constraints	54.2

(Source: Survey results)

Facilitating factors that supported successful active learning implementation included: Institutional support and commitment to pedagogical innovation; Collaborations and knowledge sharing among instructors; Availability of professional development opportunities for instructors; Student motivation and willingness to participate in active learning activities.

Outlines the key factors that contribute to the successful implementation of active learning methods. These facilitating factors provide valuable guidance for institutions seeking to enhance their adoption of active learning approaches (Table 5).

Table 5. Factors promoting the success of active learning methods

Motivating factors	Agreement rate (%)
Support and commitment from school and faculty leaders in innovating teaching methods	91.7
Training and fostering programs on active teaching methods for lecturers	83.3
Cooperation and sharing of experiences between lecturers and faculties	79.2
Students' motivation and willingness to participate in active learning activities	75.0

(Source: Survey results)

Comparison of the effectiveness between active learning and traditional lecture methods across three key metrics: student participation, learning motivation, and learning outcomes. To ensure clarity in both color and black-and-white printing, the bars use different patterns: solid fill for active learning methods and diagonal lines for traditional lecture methods (Figure 2).

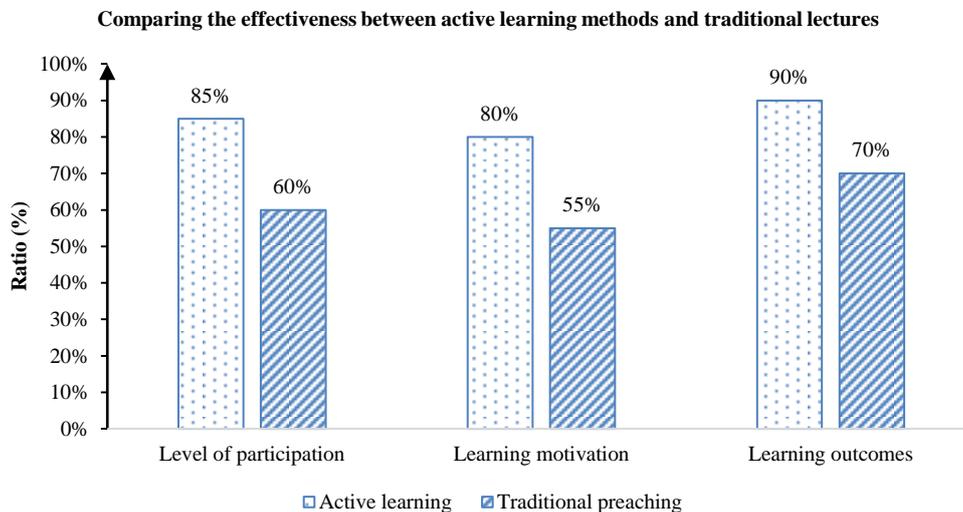


Figure 2. Comparison of effectiveness between active learning and traditional lecture methods
(Source: Survey results)

The Figure 2 shows significant differences in student engagement, motivation, and learning outcomes between courses using active learning methods and courses using traditional lecture methods, system. Specifically, courses that apply active learning have significantly higher student participation rates (85%), learning motivation (80%), and learning outcomes (90%) than using the traditional method (60%, 55% and 70%, respectively).

3.3. Comparison with traditional teaching methods

Across all case study sites, students reported higher levels of engagement, motivation, and perceived learning outcomes in courses that incorporated active learning methods compared to those that relied solely on traditional lectures. However, some students and instructors expressed concerns about the potential trade-off between active learning and content coverage, particularly in courses with extensive subject matter.

Use the Mann-Whitney U test to compare the differences in participation intensity, learning ability, and learning outcomes between students learning with active and traditional methods.

The results show that students in the active classroom have a significantly higher average rating than the traditional classroom in all three criteria above, with p value < 0.05.

The results of a Mann-Whitney U test comparing the differences in participation intensity, learning ability, and learning outcomes between students learning with active and traditional methods. This statistical analysis provides robust evidence for the effectiveness of active learning approaches (Table 6).

Table 6. Comparison of results between active and traditional classrooms using the Mann-Whitney U test

Criteria	Active classroom (N=120)	Traditional classroom (N=80)	U-value	P-value
Level of participation	85.2	56.3	1562	0.003
Learning motivation	81.4	52.1	1420	0.008
Learning outcomes	87.3	49.6	925	0.001

3.4. Recommendations for wider adoption of active learning methods

Based on the findings, several recommendations can be made to promote the wider adoption of active learning pedagogies in Vietnamese higher education.

- Invest in comprehensive faculty development programs to equip instructors with the knowledge, skills, and resources needed to effectively implement active learning strategies.
- Revise curricula and course designs to balance content delivery with opportunities for active learning experiences, ensuring alignment with intended learning outcomes.
- Allocate resources and infrastructure to support active learning environments, such as flexible classrooms, laboratory facilities, and educational technology.
- Foster a culture of pedagogical innovation and collaboration among instructors to share best practices and continuously improve active learning approaches.
- Engage stakeholders, including students, industry partners, and policymakers, to advocate for and support the transition towards more student-centered learning environments.
- Conduct ongoing evaluation and research to assess the effectiveness of active learning implementation and continuously refine and adapt strategies based on evidence and feedback.

4. Conclusion and Future Research Directions

4.1. Summary of key findings

This study investigated the implementation and effectiveness of active learning and teaching methods in selected Vietnamese higher education institutions through a multiple case study approach. The findings revealed that the case study universities employed various active learning strategies, including experiential learning, project-based learning, and inquiry-based learning methods, albeit to varying degrees across different courses and programs.

Data from classroom observations, instructor interviews, and student surveys consistently indicated that active learning methods enhanced student engagement, knowledge retention, and the development of essential skills, such as critical thinking, problem-solving, and collaboration, compared to traditional lecture-based instruction. However, challenges were identified, including a lack of instructor training, student resistance, limited resources, and time constraints due to content-heavy curricula.

4.2. Limitations of the study

While this research provides valuable insights, some limitations should be acknowledged. The study focused on a limited number of case study institutions, and the findings may not be generalizable to all higher education institutions in Vietnam. Additionally, the data collection methods relied primarily on self-reported perceptions from instructors and students, which may be subject to biases.

Furthermore, the study did not extensively examine the impact of active learning methods on specific learning outcomes or academic performance due to the challenges of isolating and measuring these effects across different courses and institutions.

4.3. Suggestions for future research

Based on the limitations and findings of this study, several avenues for future research can be proposed:

- Conduct larger-scale, longitudinal studies across a broader range of Vietnamese higher education institutions to enhance the generalizability of findings and track the long-term effects of active learning implementation.

- Investigate the effectiveness of active learning methods on specific learning outcomes, such as critical thinking, problem-solving, and disciplinary knowledge, through standardized assessments and comparisons with control groups.

- Explore the impact of active learning approaches on student retention, graduation rates, and career readiness in the Vietnamese context.

- Examine the role of institutional factors, such as leadership, policies, and resource allocation, in facilitating or hindering the adoption of active learning pedagogies.

- Develop and evaluate comprehensive faculty development programs tailored to the Vietnamese higher education context, focusing on equipping instructors with the knowledge, skills, and resources needed to effectively implement active learning strategies.

By addressing these areas through rigorous research, a more comprehensive understanding of active learning implementation and its implications for Vietnamese higher education can be achieved, informing policies, practices, and continuous improvement efforts.

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