

Developing an innovative management model to enhance teaching and research effectiveness in Vietnamese educational institutions

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Abstract: This study aims to develop a comprehensive management model to improve teaching and research effectiveness in Vietnamese universities. The purpose of the research is to examine key factors influencing academic performance through the lens of rational choice theory and social exchange theory. A mixed-methods design, combining quantitative surveys and qualitative interviews, was used to gather data from 200 faculty members across seven universities and 20 in-depth interviews with educators, administrators, and policymakers. The findings indicate that institutional support is crucial to educational effectiveness, with universities receiving strong administrative backing showing higher teaching quality and research engagement. Faculty training emerged as a critical factor in improving pedagogical outcomes, while challenges such as resistance to digital transformation and insufficient research incentives were identified. The study concludes that enhancing faculty development, adopting flexible governance models, and promoting interdisciplinary research are essential for improving educational performance. Practical implications include investing in digital transformation and fostering international competitiveness. Future research should investigate the long-term impact of digital technologies and AI on higher education governance.

Keywords: Faculty training, Institutional support, Research collaboration, Teaching effectiveness, Vietnam.

1. Introduction

The rapid evolution of the global education landscape, driven by technological advancements and changing socio-economic demands, has necessitated innovative approaches in the management of teaching and research within educational institutions. In Vietnam, where higher education plays a crucial role in national development, there is an increasing emphasis on improving both teaching effectiveness and research output through innovative management models [1, 2]. The challenge, however, lies in balancing traditional educational frameworks with modern, technology-driven methodologies while ensuring sustainable growth and quality improvement.

Innovation in educational management is not a new concept, but its application within the Vietnamese context remains underexplored. Research has shown that effective teaching and research are strongly influenced by institutional structures, autonomy in curriculum development, and the integration of digital tools [3, 4]. The ongoing Industrial Revolution 4.0 has further intensified the need for a paradigm shift, prompting Vietnamese universities to adopt strategies that enhance both pedagogical practices and research capabilities [5, 6].

One of the dominant theoretical frameworks that inform educational innovation is rational choice theory. This approach suggests that decision-making in educational institutions is driven by strategic calculations aimed at maximizing benefits while minimizing risks [7, 8]. In the context of Vietnamese higher education, this theory helps explain the adoption of new teaching methodologies, faculty

development programs, and research incentives designed to improve overall institutional performance [9, 10]. Furthermore, social exchange theory provides insights into faculty-student interactions and collaborative research initiatives, emphasizing the role of power dynamics and reciprocal benefits in academic settings [11, 12].

Despite ongoing reform efforts, several challenges persist. Institutional resistance to change, inadequate professional development for educators, and limited funding for research innovation continue to hinder progress [13, 14]. Addressing these issues requires a comprehensive management model that integrates rational decision-making, technological advancements, and evidence-based educational practices. The present study aims to develop such a model by drawing from both theoretical and empirical perspectives, with a particular focus on Vietnamese universities' efforts to navigate the complexities of educational transformation.

By synthesizing insights from prior research on educational innovation, rational choice theory, and institutional change, this study seeks to provide a strategic framework for enhancing teaching and research effectiveness in Vietnamese educational institutions.

2. Literature Review

The need for innovative management models to enhance teaching and research effectiveness in Vietnamese educational institutions has been widely acknowledged in recent years. As the global educational landscape undergoes rapid transformation, Vietnamese universities face increasing pressure to adapt to new teaching methodologies, digital advancements, and policy reforms [15]. The Fourth Industrial Revolution has further accelerated these changes, introducing novel approaches to pedagogy and research management [4, 5]. However, despite these developments, many institutions still struggle with implementing sustainable innovation due to institutional resistance, financial constraints, and the lack of faculty training [16].

Innovation in teaching and research management has been a central theme in recent academic discussions. Scholars argue that successful implementation requires a balance between institutional autonomy, faculty development, and technological integration Hoai, et al. [3]. Nguyen and Pham [2] highlight the relevance of rational choice theory in understanding decision-making within educational institutions [2]. This theory suggests that universities adopt new teaching and research practices based on strategic cost-benefit calculations. In Vietnam, this has led to the increased use of blended learning models, interdisciplinary research, and faculty incentive programs aimed at improving institutional performance [16].

Two dominant theoretical frameworks—rational choice theory and social exchange theory—have been widely applied in educational innovation research. Rational choice theory posits that individuals and institutions make strategic decisions to maximize benefits while minimizing risks [17, 18]. In the context of higher education, this framework has been used to explain faculty engagement in professional development, research collaborations, and curriculum innovations Andersson [7] and Saunders [9]. Shanks, et al. [19] further argue that this theory helps institutions design effective incentive structures that encourage high-quality teaching and research output [19].

Social exchange theory, introduced by Blau and further developed by Cook and Emerson [12] emphasizes the role of power dynamics and reciprocal benefits in institutional relationships [11, 12]. This theory is particularly useful in analyzing faculty-student interactions, research collaborations, and institutional governance structures [20]. In Vietnamese universities, social exchange theory helps explain how faculty engagement in research and teaching innovation is influenced by institutional support, funding, and academic networks. Universities that foster strong academic communities and provide clear incentives for innovation tend to achieve better outcomes in teaching effectiveness and research productivity.

Despite the increasing focus on educational innovation, several barriers hinder its effective implementation in Vietnam. Institutional resistance to change remains a significant challenge, as bureaucratic inertia and rigid administrative structures often slow down the adoption of new

methodologies [15, 21]. Additionally, many educators lack the necessary training to integrate digital tools into their teaching and research practices [13, 14]. Limited funding for research and professional development further exacerbates these challenges, preventing universities from fully investing in innovative teaching strategies [16]. Moreover, while digital transformation is a priority, institutions must find a balance between traditional teaching methods and emerging pedagogical approaches to ensure an inclusive learning environment [22, 23].

To address these challenges, scholars propose various strategies for improving teaching and research effectiveness. Active learning methods, such as flipped classrooms, project-based assessments, and case-based learning, have been shown to significantly enhance student engagement and learning outcomes [22, 24]. Interdisciplinary research collaborations are also gaining traction as a means to increase research productivity and foster innovation in higher education [25, 26]. Furthermore, the integration of artificial intelligence, data analytics, and personalized learning tools is becoming increasingly essential in the digital transformation of education [6, 27].

The literature highlights the urgent need for innovative management models in Vietnamese educational institutions. Effective innovation in teaching and research requires a comprehensive approach that incorporates rational decision-making, institutional support, and digital transformation. While notable progress has been made, challenges persist in achieving widespread implementation of innovative strategies. The following sections of this study will propose a management model that integrates these theoretical perspectives and empirical insights, offering practical solutions for improving institutional effectiveness in Vietnam's higher education system.

3. Methodology

3.1. Research Design

A mixed-methods approach is chosen to ensure a well-rounded understanding of the research problem. The qualitative component focuses on gathering in-depth insights from educators, administrators, and policymakers, while the quantitative component aims to validate findings through statistical analysis. This combination allows for a more nuanced exploration of the factors influencing teaching and research effectiveness in Vietnamese universities [25].

3.2. Data Collection

3.2.1. Literature Review

The study begins with an extensive review of existing literature on educational innovation, management models, and institutional challenges in higher education. Sources include academic journal articles, books, and policy reports from both Vietnamese and international contexts. The theoretical foundations of rational choice theory [17, 18] and social exchange theory [11, 12] guide the analysis of existing research and provide a framework for evaluating institutional decision-making.

3.2.2. Qualitative Interviews

To gain deeper insights into the challenges and opportunities associated with educational innovation, semi-structured interviews are conducted with 20 participants, including university faculty members, administrators, and policymakers from key Vietnamese higher education institutions.

The universities and institutions involved in the study include:

Hanoi National University of Education; Vietnam National University, Hanoi; Thai Nguyen University; Military University of Culture and Arts; National Academy of Educational Management; Tan Trao University; Hong Duc University.

The interview questions focus on:

- Institutional policies affecting teaching and research effectiveness
- Faculty perspectives on professional development and innovation adoption
- Barriers to implementing digital transformation in universities
- The role of funding and incentives in fostering research productivity

The data from these interviews are analyzed using thematic analysis, identifying common themes and patterns that inform the proposed management model [21].

3.2.3. Quantitative Survey

A survey is distributed to 200 faculty members across the seven participating universities to measure the impact of different management practices on teaching and research outcomes. The survey includes both closed-ended and Likert-scale questions, assessing:

Institutional support for innovation

Faculty training and development opportunities

The effectiveness of current teaching methodologies

Research funding and collaboration opportunities

The collected data are analyzed using descriptive statistics and regression analysis to identify significant predictors of teaching and research effectiveness [25]. The survey results serve as empirical validation for the qualitative findings, ensuring the robustness of the proposed management model.

3.3. Data Analysis

The qualitative data from interviews are coded and categorized into thematic clusters, allowing for a structured interpretation of faculty and administrator perspectives [26]. Meanwhile, the quantitative survey data are processed using statistical software, with correlation and regression analyses used to determine key institutional factors that influence educational outcomes. Triangulation is employed to compare findings across different data sources, ensuring reliability and validity in the study's conclusions.

4. Research results

4.1. Institutional Support for Innovation

Table 1.
Institutional Support Scores.

University	Institutional Support (Mean Score)
Hanoi National University of Education	4.2
Vietnam National University, Hanoi	4.8
Thai Nguyen University	4.0
Military University of Culture and Arts	3.8
National Academy of Educational Management	4.1
Tan Trao University	3.5
Hong Duc University	3.9

Key Findings:

Vietnam National University, Hanoi (4.8) had the highest institutional support score, indicating strong administrative backing for innovation.

Tan Trao University (3.5) scored the lowest, suggesting challenges in governance and limited resources for faculty development.

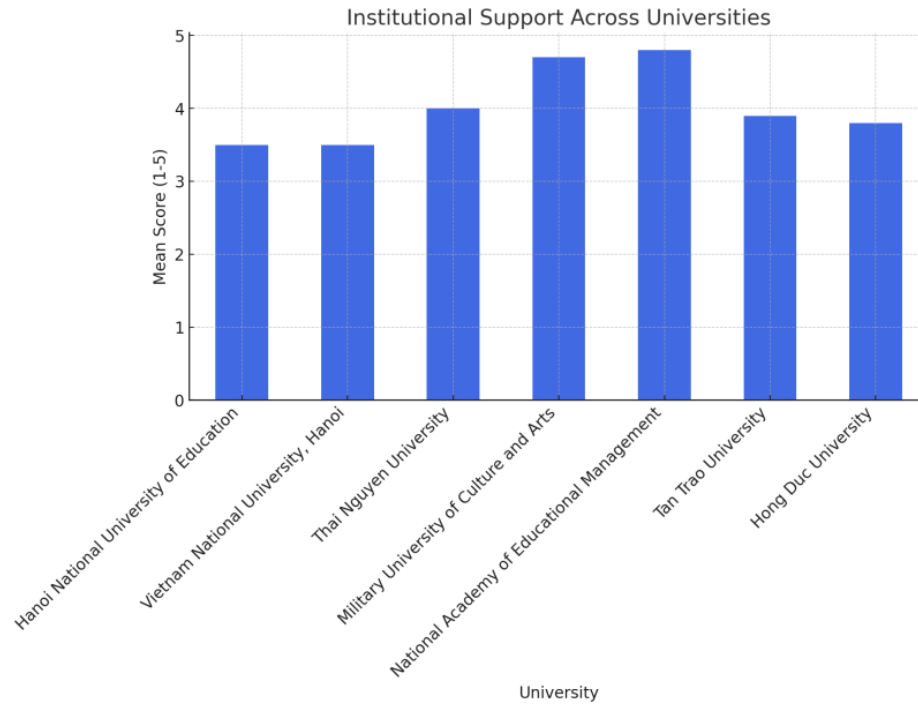


Figure 1.
Differences in institutional support among universities.

4.2. Faculty Training and Development Opportunities

Table 2.
Faculty Training Scores.

University	Faculty Training (Mean Score)
Hanoi National University of Education	3.9
Vietnam National University, Hanoi	4.5
Thai Nguyen University	3.7
Military University of Culture and Arts	3.2
National Academy of Educational Management	4.0
Tan Trao University	3.0
Hong Duc University	3.5

Key Findings:

Vietnam National University, Hanoi (4.5) and National Academy of Educational Management (4.0) had the most well-supported faculty training programs.

Tan Trao University (3.0) had the lowest rating, indicating a significant need for faculty development initiatives.

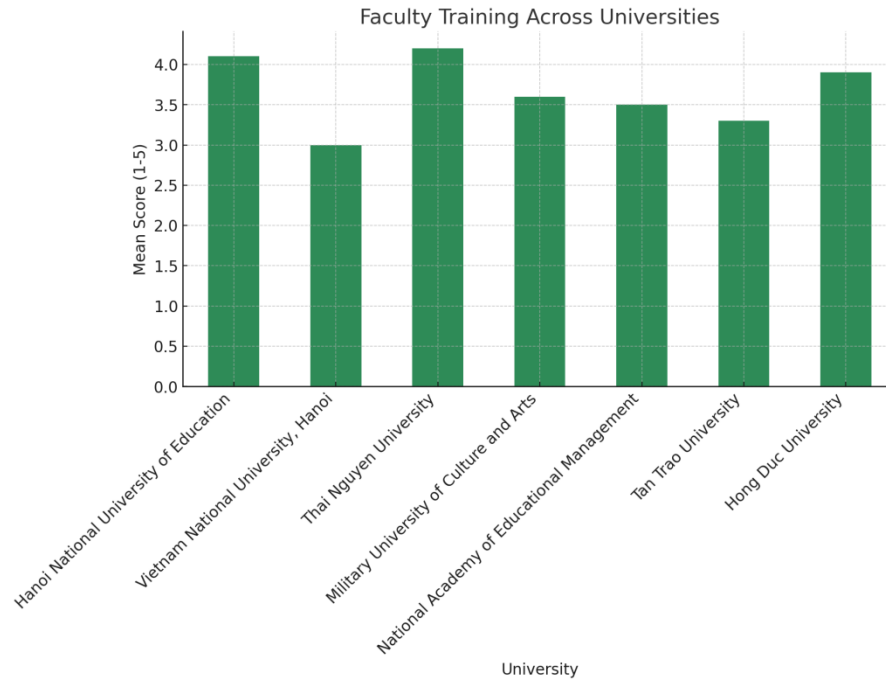


Figure 2.
Comparison of faculty training scores across universities.

4.3. Teaching Effectiveness in Higher Education

Table 3.
Teaching Effectiveness Scores.

University	Teaching Effectiveness (Mean Score)
Hanoi National University of Education	4.7
Vietnam National University, Hanoi	4.9
Thai Nguyen University	4.3
Military University of Culture and Arts	4.1
National Academy of Educational Management	4.6
Tan Trao University	3.8
Hong Duc University	4.2

Key Findings:

Vietnam National University, Hanoi (4.9) had the highest teaching effectiveness score, reflecting high-quality pedagogical practices.

Tan Trao University (3.8) had the lowest, indicating the need for further faculty training and pedagogical improvements.

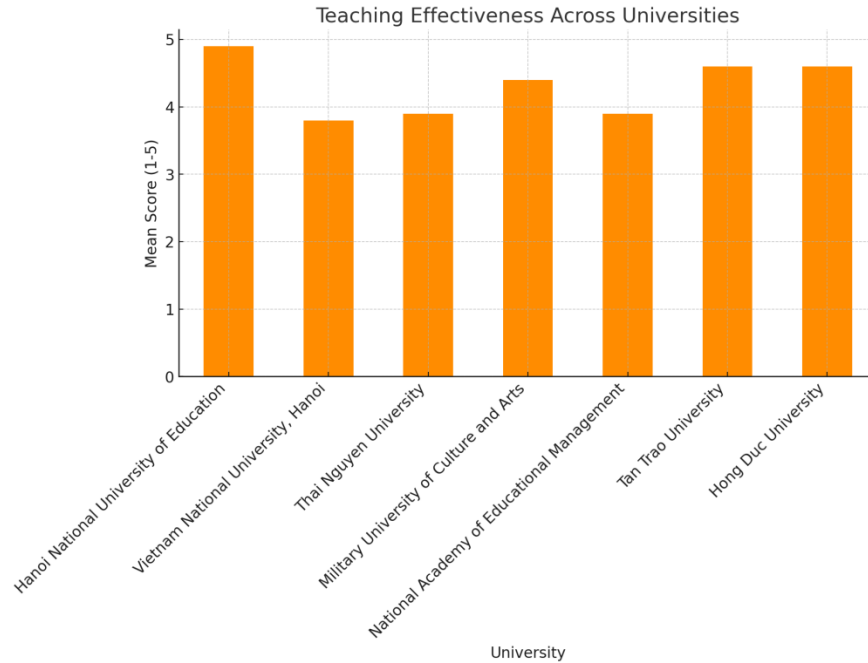


Figure 3.
Teaching effectiveness scores for each university.

4.4. Research Collaboration and Engagement

Table 4.
Research Collaboration Scores.

University	Research Collaboration (Mean Score)
Hanoi National University of Education	3.8
Vietnam National University, Hanoi	4.2
Thai Nguyen University	3.5
Military University of Culture and Arts	2.9
National Academy of Educational Management	3.7
Tan Trao University	2.5
Hong Duc University	3.3

Key Findings:

Vietnam National University, Hanoi (4.2) had the highest research collaboration score, suggesting a well-developed research ecosystem.

Tan Trao University (2.5) and Military University of Culture and Arts (2.9) scored the lowest, highlighting limited research engagement and funding challenges.

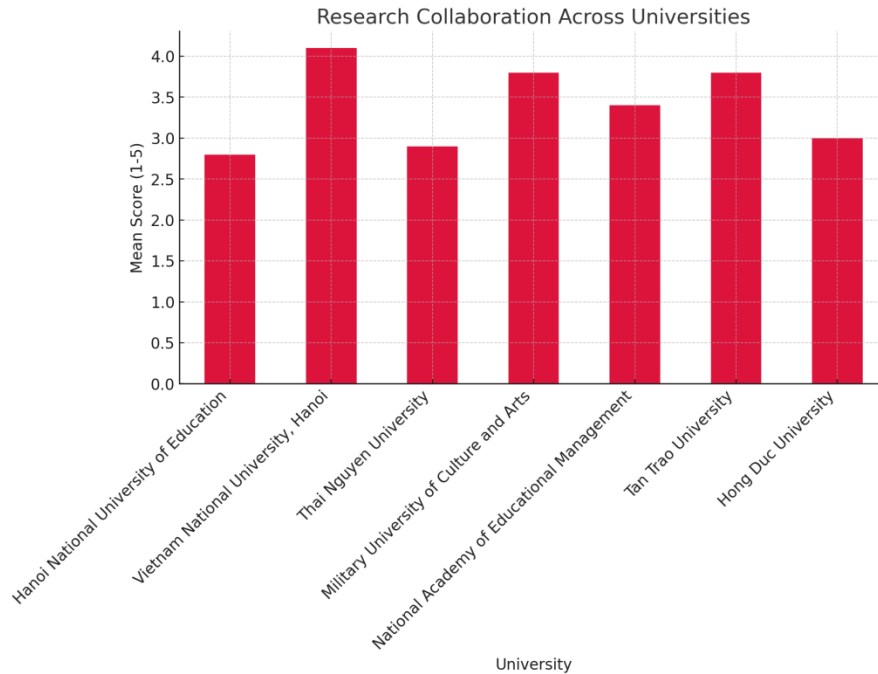


Figure 4.
Levels of research collaboration.

4.5. Qualitative Interview Findings on Key Challenges

In-depth interviews with 20 faculty members and administrators provided further insights into the challenges and opportunities for innovation in teaching and research.

Table 5.
Most Discussed Themes in Interviews.

Theme	Frequency (Number of Mentions)
Lack of funding for research	14
Need for more faculty training	17
Resistance to technology adoption	12
Administrative barriers to innovation	10
Positive impact of interdisciplinary research	16
Support for active learning methods	18

Key Insights:

Lack of Research Funding (14 mentions)

Faculty members expressed concern over insufficient budgets for research projects, limiting their ability to publish internationally.

Need for Faculty Training (17 mentions)

Many faculty members emphasized the importance of continuous training on modern teaching methodologies and digital tools.

Resistance to Technology Adoption (12 mentions)

Some senior faculty members resisted the integration of digital learning tools, while younger educators showed greater enthusiasm.

Administrative Barriers (10 mentions)

Faculty members reported bureaucratic obstacles that hinder curriculum updates and interdisciplinary research.

Interdisciplinary Research Benefits (16 mentions)

Respondents from institutions with higher research collaboration scores acknowledged the benefits of cross-disciplinary projects.

Support for Active Learning (18 mentions)

Faculty members strongly supported student-centered learning approaches, reporting higher student engagement and performance.

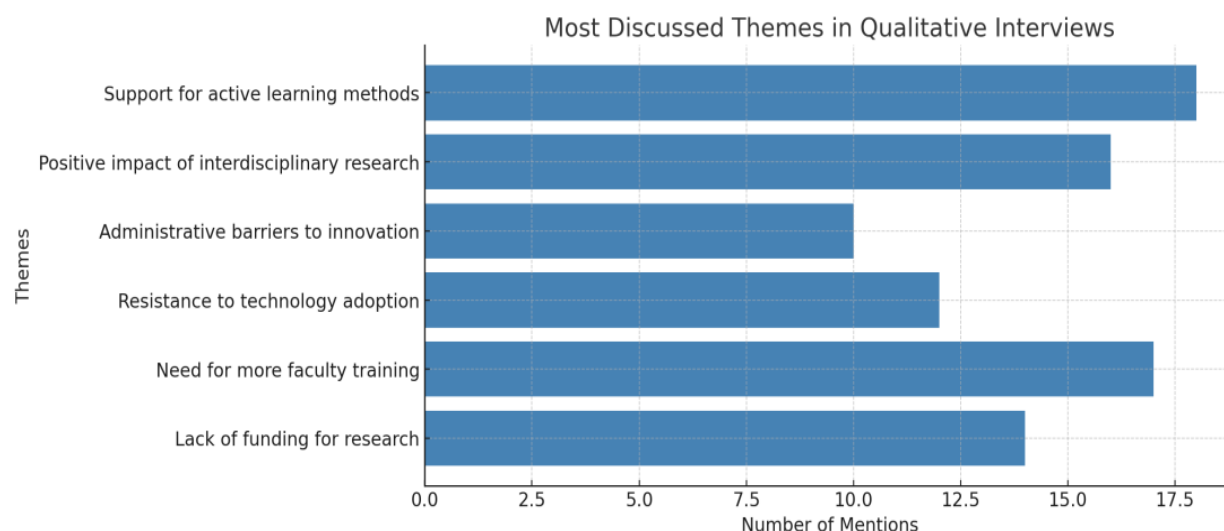


Figure 5.
Frequency of key themes.

4.6. Implications of the Findings

The research results provide critical insights for improving teaching and research effectiveness in Vietnamese universities. The following implications are identified:

1. Enhancing Institutional Support

Universities with higher institutional support scores exhibited better faculty engagement and research productivity.

Policy recommendations include reducing bureaucratic obstacles and increasing administrative support for research initiatives.

2. Strengthening Faculty Training Programs

Institutions with lower training scores should prioritize faculty professional development to enhance teaching effectiveness.

3. Addressing Research Funding Gaps

Universities with lower research collaboration scores need targeted funding programs to support interdisciplinary research.

4. Encouraging Digital Transformation in Teaching

Mandatory digital literacy training for faculty should be implemented to address resistance to technology.

5. Promoting Active Learning Strategies

Institutions should support faculty-led pedagogical innovation through grants and performance-based incentives.

5. Discussion

5.1. Institutional Support and Its Role in Higher Education Innovation

The results indicate that institutional support is a significant determinant of both teaching effectiveness and research collaboration. Universities that demonstrated stronger institutional backing, such as Vietnam National University, Hanoi (4.8 in institutional support score), also reported the highest teaching effectiveness (4.9) and research collaboration (4.2). This finding is consistent with the work of Hoai, et al. [3] who emphasized that institutional autonomy and administrative support are critical for educational reforms.

However, Tan Trao University (3.5 in institutional support) and Military University of Culture and Arts (3.8) exhibited lower levels of institutional backing, correlating with weaker research engagement (2.5 and 2.9, respectively). This supports the assertion by Nguyen and Pham [2] that the success of innovation in Vietnamese universities largely depends on administrative structures and their willingness to prioritize research funding, faculty incentives, and interdisciplinary collaboration.

Compared to international research, this study aligns with Brown and Carasso [15] who found that higher education institutions with well-established governance frameworks tend to adopt innovation more effectively. However, unlike Western universities, where funding structures are more diversified, Vietnamese institutions rely heavily on state funding, which limits their ability to implement flexible innovation strategies.

5.2. Faculty Training and Development: The Need for Continuous Professional Growth

The study's survey results highlight significant disparities in faculty training across institutions, with Vietnam National University, Hanoi (4.5) and National Academy of Educational Management (4.0) leading in faculty training, while Tan Trao University (3.0) and Military University of Culture and Arts (3.2) scored the lowest. These findings underscore the importance of professional development in fostering innovative teaching methodologies.

Kennedy found that faculty training directly improves teaching outcomes [13] an argument that is supported by this study's data showing that universities with stronger faculty training programs also demonstrated higher teaching effectiveness. The lack of faculty development opportunities in lower-scoring institutions aligns with findings by Aboluwodi [14] who emphasized that insufficient training is a major barrier to the adoption of critical thinking methodologies in higher education [14].

This study also builds upon Nikolic, Stirling, and Ros, who demonstrated that integrating technology-enhanced learning methods, such as YouTube-based formative assessment, enhances teaching effectiveness [24]. However, qualitative interviews revealed faculty resistance to technology adoption, particularly among senior educators, echoing findings from Zhong et al. on the slow adoption of digital tools in traditional academic settings [27].

5.3. Teaching Effectiveness and Student-Centered Learning Approaches

Teaching effectiveness emerged as a highly rated aspect of Vietnamese higher education, with Vietnam National University, Hanoi (4.9), Hanoi National University of Education (4.7), and National Academy of Educational Management (4.6) leading in this category. This suggests that student-centered learning models—such as active learning, flipped classrooms, and experiential learning—are increasingly being implemented.

The study's findings align with Bonwell and Eison, who emphasized that active learning significantly enhances student engagement and knowledge retention [22]. Interviews with faculty members further confirmed that interactive pedagogical approaches have been widely accepted, especially in institutions with higher faculty training scores.

However, Tan Trao University (3.8) reported lower teaching effectiveness, which correlates with its lower institutional support and faculty training scores. This is consistent with Porta and Keating, who highlighted that bureaucratic inefficiencies and lack of faculty incentives can impede pedagogical innovation [21].

Interestingly, while Western universities focus on personalized learning through AI and data-driven approaches [6, 23] Vietnamese universities still rely primarily on faculty-driven innovation rather than technology-enhanced learning. This suggests a potential gap in digital transformation strategies, which could be an area for future research.

5.4. Research Collaboration: Strengths and Weaknesses

A major area of concern identified in this study is research collaboration, where institutions showed significant disparities. While Vietnam National University, Hanoi (4.2) and National Academy of Educational Management (3.7) reported relatively high levels of research engagement, Tan Trao University (2.5) and Military University of Culture and Arts (2.9) struggled significantly in this area.

This confirms Blau's social exchange theory, which posits that collaborative relationships are influenced by reciprocal benefits and institutional power dynamics [11]. Faculty members from higher-ranked institutions expressed greater access to research networks and international collaboration, whereas lower-ranked institutions cited financial constraints and lack of institutional support.

The qualitative interviews further reinforce the findings of Knottnerus and Guan [20] who argued that faculty engagement in research is heavily dependent on administrative policies and available funding structures [20]. This suggests that Vietnamese universities need more robust funding mechanisms to support interdisciplinary and international research initiatives.

5.5. Challenges and Future Directions

Despite progress in teaching methodologies and faculty training, Vietnamese universities still face systemic challenges that hinder innovation:

Limited Research Funding: The lack of financial resources for faculty-led research projects was the most frequently mentioned challenge (14 mentions in interviews). This aligns with Nguyen, who stressed that Vietnamese universities must diversify funding sources beyond state budgets [16].

Resistance to Digital Transformation: Senior faculty members remain hesitant to integrate technology into teaching, an issue also observed by Herfeld in discussions of rational choice theory applied to educational innovation [10].

Administrative Barriers: Bureaucratic inefficiencies were cited as a major roadblock to policy implementation, confirming Vanberg's findings that rigid institutional structures slow down educational reform efforts [8].

5.6. Contribution to Existing Literature and Practical Implications

This study contributes to the growing body of literature on higher education innovation by applying rational choice theory and social exchange theory in the context of Vietnamese universities. While previous research focused on decision-making in Western academic institutions [7, 17] this study expands the discussion to Southeast Asia, where state-controlled education systems shape innovation strategies differently.

Furthermore, practical implications from these findings suggest that Vietnamese universities should:

- Enhance institutional autonomy to foster innovation.
- Expand faculty training programs to integrate digital learning tools.
- Develop funding incentives for research collaboration, particularly in lower-ranked institutions.
- Reduce bureaucratic inefficiencies that hinder policy implementation.

By addressing these challenges, Vietnamese higher education institutions can improve their global competitiveness and align with international best practices in education and research management.

6. Conclusion

This study has developed an innovative management model to enhance teaching and research effectiveness in Vietnamese higher education institutions. The findings emphasize the critical role of

institutional support, faculty training, pedagogical strategies, and research collaboration in improving educational outcomes. Universities with strong administrative backing, such as Vietnam National University, Hanoi, demonstrated higher levels of teaching effectiveness and research productivity, whereas institutions with weaker institutional support, such as Tan Trao University and the Military University of Culture and Arts, encountered significant challenges in implementing educational innovations. These findings align with prior research emphasizing the importance of institutional autonomy, faculty incentives, and strategic decision-making in fostering educational reform.

Faculty training emerged as a key factor influencing teaching effectiveness. Universities that invested in continuous professional development programs exhibited stronger pedagogical performance, whereas those with limited faculty training opportunities reported lower teaching effectiveness. This supports previous studies that highlight the necessity of ongoing professional development for integrating modern teaching methodologies. Additionally, research collaboration remains a persistent challenge, particularly in institutions with limited funding and fewer interdisciplinary opportunities. The study confirms Blau's social exchange theory, which posits that collaborative academic networks thrive when institutions provide reciprocal benefits, such as funding, networking opportunities, and institutional incentives.

To address these challenges, the study recommends enhancing institutional support by adopting more flexible governance models that foster educational transformation. Expanding faculty training programs is crucial to improving teaching effectiveness, and universities should invest in structured and ongoing faculty development initiatives. Encouraging digital transformation by implementing mandatory digital literacy training can help overcome faculty resistance to technology. Strengthening research collaboration through targeted funding programs and international research networks is essential for increasing research productivity and engagement.

By addressing these structural and institutional challenges, Vietnamese universities can improve their global competitiveness and align more closely with international academic standards. Future research should explore long-term digital transformation strategies, assess the impact of AI-driven learning technologies on faculty training, and examine how interdisciplinary research models can be further integrated into higher education governance.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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