

PROMOTING DIGITAL TRANSFORMATION IN EDUCATION AND TRAINING TO MEET THE REQUIREMENTS OF SUSTAINABLE NATIONAL DEVELOPMENT

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Abstract: Digital transformation has become an inevitable trend, profoundly reshaping education and training in the context of the Fourth Industrial Revolution and globalization. Grounded in the strategic orientations of the Communist Party of Vietnam, particularly Resolution No. 57-NQ/TW (2024) and Resolution No. 71-NQ/TW (2025), this article examines the role, current state, and key solutions for advancing digital transformation in Vietnam's education and training system.

Based on secondary data analysis, the study demonstrates that digital transformation extends beyond technology adoption to encompass comprehensive changes in governance models, teaching and learning practices, quality assurance, and human resource development. Recent implementation has yielded notable achievements, including the establishment of a national education database and the expansion of online public services. However, persistent challenges remain, such as regional disparities in digital infrastructure, uneven digital competencies among educators, incomplete legal frameworks, and limited investment resources. The article proposes integrated policy solutions to strengthen institutional reform, educational innovation, and digital capacity building, thereby supporting the sustainable development of education and training in Vietnam in the digital era.

Keywords: Digital transformation; Education and training; Digital human resources; Education governance; Vietnam.

1. Introduction

Digital transformation is unfolding rapidly worldwide, becoming an inevitable trend that profoundly affects all spheres of social life. Resolution No. 57-NQ/TW dated December 22, 2024, issued by the 13th Central Committee of the Communist Party of Vietnam on breakthroughs in the development of science, technology, innovation, and national digital transformation, affirms that: "The development of science, technology, innovation, and national digital transformation is the foremost strategic breakthrough and the primary driving force for the rapid development of modern productive forces, the improvement of production relations, the renewal of national governance methods, socio-economic development, the prevention of the risk of falling behind, and the creation of strong momentum for the country to become prosperous and powerful in the new era" (Communist Party of Vietnam, 2024).

In this context, education and training are not

only key sectors that determine the quality of human resources but also a foundational pillar for the country to implement digital transformation effectively. Accelerating the application of digital technologies in education and training enhances creativity, adaptability to change, and the fulfillment of the requirements of sustainable national development.

2. Research overview

In recent years, alongside the national digital transformation process, digital transformation in education and training has become a research topic attracting the attention of numerous scholars, policymakers, and research institutions in Vietnam. Existing studies have approached this issue from various perspectives, including policy and legal frameworks, educational governance, quality assurance, data security, intellectual property rights of digital learning materials, and the practical implementation of digital transformation in educational institutions.

At the macro level, Pham Van Phong (2025),

in “State Management of Education in the Context of Digital Transformation and Globalization – *Emerging Issues*”, Ha Giang (2025) in “Digital Transformation in Higher and Vocational Education: Opportunities and Challenges” clarified the role of state management in coordinating, orienting, and supervising the digital transformation of education, emphasizing the need to renew management thinking, strengthen digital governance capacity, and ensure equity and inclusiveness in access to digital education.

At a broader level, the research report “Digital Transformation in Higher Education: Current Status and Policy Recommendations” by the Vietnam National Institute of Educational Sciences (2023) provided a relatively comprehensive overview of the level of digital transformation across Vietnamese higher education institutions. The report indicated that although many universities have begun applying digital technologies in management and teaching, the transformation process remains fragmented, lacks coherence, and has yet to form a complete digital education ecosystem. Accordingly, the report proposed recommendations for policy improvements, human resource capacity building, infrastructure investment, and strengthened data connectivity across the sector.

Overall, the literature shows that digital transformation in education and training in Vietnam has been examined from multiple perspectives. However, most studies focus on isolated aspects such as legal frameworks, governance, data security, or quality assurance. There remains a lack of integrative and systematic research that comprehensively analyzes the role, implementation practices, and solutions for accelerating digital transformation in education and training in Vietnam, particularly in relation to national strategies for science, technology, innovation, and digital transformation. This research gap provides a critical foundation for further in-depth studies.

3. Research methods

This article primarily employs secondary data analysis, focusing on Resolution No. 57-NQ/TW dated December 22, 2024, of the 13th Central Committee of the Communist Party of Vietnam

on breakthroughs in science, technology, innovation, and national digital transformation; Resolution No. 71-NQ/TW dated August 22, 2025, of the 13th Central Committee on breakthroughs in education and training in the new context; along with government reports and relevant scholarly studies. Based on document analysis, the study synthesizes and generalizes findings to clarify the role, current practices, and solutions for promoting digital transformation in education and training in Vietnam today.

4. Research results

4.1. *The Role of Digital Transformation in Education and Training in Vietnam*

Digital transformation in education and training is the comprehensive application of digital technologies to fundamentally change the operational and governance models of the education system, encompassing policy formulation, teaching and learning, assessment and evaluation, human resource development, digital learning resources, and learner support services. Unlike digitization, digital transformation aims to reshape operational models, management thinking, and learning approaches, making education more flexible, transparent, personalized, and effective.

In Vietnam, digital transformation in education is closely linked to the National Digital Transformation Strategy and programs such as “Digital Government, Digital Economy, and Digital Society,” becoming a key pillar in the fundamental and comprehensive reform of education, the enhancement of human resource quality, and international integration. This process extends beyond technological application to encompass a systemic strategy that affects state governance, teaching and learning organizations, institutional management, learning resource development, learner services, and the linkage between education, the labor market, and society. It not only drives the modernization of education but also plays a decisive role in sustainable national development in the digital era.

Digital transformation significantly improves the quality and efficiency of education and training. It enables a shift from one-way knowledge transmission to interactive, learner-

centered, and personalized learning models. Online learning platforms, learning management systems, and digital resources allow learners to access knowledge anytime, anywhere, at their own pace and capacity—an especially important advantage in a country with a large education system and uneven material conditions. Digital tools also enhance teaching quality through real-time learning assessment, progress tracking, and performance monitoring at both individual and class levels.

Moreover, digital transformation promotes innovation in state management and institutional governance. Digital technologies facilitate a transition from experience-based, administrative command-and-control management to data-driven, outcome-based governance. Through national education databases, decisions regarding school network planning, resource allocation, teacher recruitment and training, and quality supervision can be made more scientifically, transparently, and promptly. Digital transformation also reduces administrative procedures, enhances transparency of information, and strengthens accountability, thereby increasing public trust in educational quality.

Digital transformation expands learning opportunities and promotes social equity. In the context of socio-economic disparities across regions in Vietnam, digital transformation helps narrow the digital divide and enables learners in rural, mountainous, and island areas to access high-quality education similar to that in urban centers. This contributes to reducing educational inequality and fostering lifelong learning by connecting formal and non-formal education and expanding citizens' access to knowledge.

Importantly, digital transformation supports the development of high-quality human resources. In a knowledge-based economy and digital society, digital skills, technological thinking, and lifelong learning capabilities are core competencies. Digital education equips learners with these competencies from early stages, enhancing their ability to work in digital environments and compete internationally. At the same time, integrating technology into education enables teachers to develop pedagogical skills

that incorporate technology, fostering innovation in teaching methods.

Furthermore, digital transformation facilitates international integration and elevates Vietnam's educational standing. It enables Vietnamese educational institutions to participate in global academic networks, implement online and joint training programs, and recognize digital credits and qualifications. This not only improves training quality but also expands opportunities for international cooperation, research, and academic exchange, enhancing Vietnam's educational reputation and position regionally and globally.

In sum, digital transformation in education and training in Vietnam is a strategic, comprehensive, and long-term process that goes beyond technology adoption to reshape governance mechanisms, teaching models, institutional management, and human resource development. Its role is evident in quality improvement, governance innovation, expanded learning opportunities, enhanced learner competitiveness, and strengthened international integration. Effective digital transformation requires synchronized policy reform, completion of the legal framework, infrastructure investment, and human capacity development to ensure sustainable educational development in the digital era.

4.2. The Current State of Digital Transformation in Education and Training in Vietnam

After more than a decade of implementing Resolution No. 29-NQ/TW dated November 4, 2013, on fundamental and comprehensive educational reform, Vietnam has achieved significant accomplishments. Notably, *"Vietnam is among the 21 countries that have early achieved the United Nations' Sustainable Development Goals by 2030 regarding quality education"* (Communist Party of Vietnam, 2025). In line with Party and State policies, digital transformation in education and training has become a strategic orientation amid the Fourth Industrial Revolution and deep globalization. As one of the eight priority sectors in the National Digital Transformation Program, education is expected to generate breakthroughs in teaching

methods, management, and human resource quality (Prime Minister, 2020).

One of the most notable achievements is the establishment and operation of a nationwide education and training database. By 2024, the education sector had completed a centralized database digitizing information for approximately 53,000 educational institutions, nearly 24–25 million students, and over 1.6 million teachers and staff nationwide (Ministry of Education and Training, 2024). This milestone provides a crucial foundation for data-driven educational management, enhanced transparency, reduced administrative procedures, and more scientific policymaking.

Alongside database development, digitalization of educational management has been promoted across levels and localities. Online public services in education have been expanded, with procedures such as admissions, student record management, and diploma verification increasingly conducted digitally. Notably, integrating education data with the National Population Database has improved data accuracy and facilitated the provision of future digital education services (Ministry of Education and Training, 2023).

In terms of educational quality, Vietnam has maintained a certain standing internationally. General education quality ranks among the region's leading indicators, international student inflows are increasing, and vocational education is more closely aligned with labor market needs. According to the OECD's PISA 2022 results, Vietnamese students ranked 31st out of 81 countries in Mathematics, 34th in Reading, and 35th–37th in Science, placing Vietnam in the upper tier within Southeast Asia (Ministry of Education and Training, 2023). Although rankings have slightly declined compared to previous cycles, these results still reflect solid foundational learning outcomes despite limited educational investment relative to developed countries.

Educational internationalization has also progressed. According to UNESCO and national data, Vietnam ranks among countries with a large number of outbound international students, with approximately 130,000–140,000 Vietnamese

studying abroad during 2021–2024 (Ministry of Education and Training, 2024). Conversely, inbound international students reached around 22,000—the highest level in nearly a decade—reflecting improved attractiveness and capacity of Vietnamese education (Ministry of Foreign Affairs – Vietnam Union of Friendship Organizations, 2023).

Nevertheless, significant challenges remain. Digital infrastructure and access to technology vary widely across regions. While many urban institutions have implemented smart classrooms and digital governance systems, numerous remote areas still face limited internet access, insufficient teaching equipment, and inadequate digital skills among teachers and students. If unaddressed, this digital divide risks exacerbating educational inequality. Teachers' and administrators' digital competencies often lag behind the demands of transformation, with many struggling to use online platforms, design digital learning materials, and conduct digital assessments effectively. Training and retraining efforts remain fragmented, leading to superficial technology adoption rather than substantive pedagogical change (Ministry of Education and Training, 2024).

Furthermore, legal frameworks for digital transformation in education—especially higher education—remain incomplete. Existing education laws provide only general principles, lacking specific regulations for digital universities, fully online programs, digital credit recognition, electronic diplomas, or large-scale data governance. Inconsistencies between education law and information technology, cybersecurity, and personal data protection regulations create implementation challenges (Ministry of Education and Training, 2023). Financial resources for digital transformation are also limited and fragmented, while mechanisms for public-private partnerships and socialization remain insufficiently flexible. These constraints highlight the need for accelerated, coordinated digital transformation to ensure effective adaptation of education in the digital era.

5. Discussion

The world is entering a period of profound transformation driven by the Fourth Industrial

Revolution, where knowledge, innovation, and technological adaptability determine national competitiveness. Global educational transformation is reshaping the “new map” of knowledge, with AI, big data, and digital technologies fundamentally altering learning, teaching, and university governance. In response, on August 22, 2025, the Politburo issued Resolution No. 71-NQ/TW on breakthroughs in education and training in the new context, marking a significant shift in Vietnam’s educational development mindset.

The Resolution outlines six guiding principles, emphasizing education as a key driver of sustainable development, positioning people as both beneficiaries and creators of educational policy, aligning education with socio-economic needs, pursuing comprehensive and focused reform, strengthening Party leadership, and building an open, equitable education system. It identifies three strategic breakthroughs: institutional reform, modernization of vocational education, and advancement of higher education as a driver of innovation (Communist Party of Vietnam, 2025).

Digital transformation and innovation are central to these breakthroughs, explicitly framed as the engine of educational reform. The Resolution underscores the development of innovative universities and technology-driven education hubs, the integration of education with research and innovation, and the formation of a digital learning society aligned with the national aspiration to become a high-income, developed country by 2045.

To realize digital transformation in education and training, six integrated solutions are required: completing institutional frameworks; innovating curricula and teaching methods; developing digitally competent teachers and administrators; investing in digital infrastructure and ecosystems; strengthening research, innovation, and international cooperation; and reinforcing Party leadership, state management, and social oversight. These coordinated efforts are essential for building an open, interconnected, modern education system that supports sustainable national development.

6. Conclusion

Accelerating digital transformation in education and training is an inevitable requirement in the context of globalization and the Fourth Industrial Revolution. This process drives innovation in curricula, teaching methods, and the development of smart education ecosystems, thereby enhancing the quality of digital human resources. It forms the foundation for an open, flexible, and modern education system that meets the demands of sustainable national development. Comprehensive integration of digital technologies into education will generate breakthroughs in governance and system operation, strengthening Vietnam’s competitiveness, creativity, and international integration in the digital era. Therefore, digital transformation is not merely a short-term solution but a long-term strategic pathway ensuring a solid foundation for the country’s sustainable and comprehensive development.

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ĐẨY MẠNH CHUYỂN ĐỔI SỐ TRONG GIÁO DỤC, ĐÀO TẠO, ĐÁP ỨNG YÊU CẦU PHÁT TRIỂN BỀN VỮNG ĐẤT NƯỚC

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Tóm tắt: Chuyển đổi số đang trở thành xu thế tất yếu, tác động sâu sắc đến giáo dục và đào tạo trong bối cảnh Cách mạng công nghiệp 4.0 và toàn cầu hóa. Dựa trên các định hướng chiến lược của Đảng và Nhà nước, đặc biệt là Nghị quyết số 57-NQ/TW năm 2024 và Nghị quyết số 71-NQ/TW năm 2025 của Bộ Chính trị khóa XIII, bài viết phân tích vai trò, thực trạng và các giải pháp thúc đẩy chuyển đổi số trong giáo dục và đào tạo ở Việt Nam hiện nay.

Trên cơ sở phân tích tài liệu thứ cấp, nghiên cứu cho thấy chuyển đổi số trong giáo dục không chỉ là ứng dụng công nghệ, mà là quá trình chuyển đổi toàn diện về mô hình quản trị, phương thức dạy – học, bảo đảm chất lượng và phát triển nguồn nhân lực. Thực tiễn triển khai cho thấy Việt Nam đã đạt được những kết quả quan trọng như xây dựng cơ sở dữ liệu giáo dục quốc gia và mở rộng dịch vụ công trực tuyến, song vẫn tồn tại các hạn chế về hạ tầng số, năng lực số của đội ngũ giáo viên, khung pháp lý và nguồn lực đầu tư. Bài viết đề xuất các giải pháp trọng tâm nhằm hoàn thiện thể chế, đổi mới giáo dục và đẩy mạnh chuyển đổi số, góp phần phát triển bền vững giáo dục Việt Nam trong kỷ nguyên số.

Từ khóa: Chuyển đổi số; Giáo dục và đào tạo; Nguồn nhân lực số; Quản trị giáo dục; Việt Nam.