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State Management of Digital Transformation in Education: Current Situation and Solutions

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ABSTRACT: This article analyzes the current situation of state management of digital transformation in education in Vietnam from the perspectives of public management, digital governance, and educational reform in the context of national digital transformation. The study uses document analysis, policy synthesis, analysis of publicly available secondary data, and SWOT analysis. Secondary data were collected from legal documents, government programs and projects, documents of the Ministry of Education and Training, and publicly released information on the implementation of digital transformation in education. The findings show that digital transformation in education has achieved important progress: the education-sector database has been developed with nearly 24.55 million digitized records of teachers, managers, and students; online public services in education have expanded; digital academic records at the primary level have been piloted in 11,400 out of 14,663 schools; and digital competence frameworks for learners, teachers, and school managers have been issued. However, state management of digital transformation in education still faces limitations, including an institutional framework that has not fully kept pace with technological change, fragmented data, uneven digital infrastructure, unequal digital competence among stakeholders, and the need to further strengthen personal-data protection mechanisms in schools. On that basis, the article proposes solutions for improving institutions, standardizing data, developing digital infrastructure, enhancing digital competence, renewing school governance, ensuring data security, and building monitoring and evaluation mechanisms based on outputs and outcomes. These solutions have practical significance for improving the effectiveness and efficiency of state management in education.

I. INTRODUCTION

Digital transformation has become one of the important drivers of national governance reform, socio-economic development, and the improvement of public service delivery. In education, digital transformation is not merely the introduction of computers, software, or online platforms into schools. More fundamentally, it is a process of transforming the ways education is managed, teaching and learning are organized, assessment is conducted, educational services are provided, and connections are established among the State, schools, learners, families, and society.

In Vietnam, digital transformation in education is situated within the National Digital Transformation Program to 2025 with orientations to 2030 and the Project on strengthening information technology application and digital transformation in education and training for the 2022-2025 period, with orientations to 2030. These policy foundations demonstrate the requirement to modernize educational management, develop education data, promote digital learning, improve digital competence, and build an open, flexible education system that is responsive to the Fourth Industrial Revolution (Prime Minister of Vietnam, 2020; Prime Minister of Vietnam, 2022).

In recent years, the education sector has achieved positive results in applying information technology and implementing digital transformation. Many administrative procedures in education have been provided online; data on schools, classes, students, and teachers have gradually been digitized; and platforms for learning management, digital learning resources, online teaching,

online admission, digital academic records, and digital diplomas have been implemented at different levels. Digital transformation has supported management, administration, teaching, assessment, and expanded learning opportunities for students.

However, digital transformation in education also raises new issues for state management. Without an appropriate institutional framework, standardized data, equitable infrastructure, sufficient digital competence, and information security, digital transformation may remain limited to the digitization of procedures and records without generating substantive changes in educational quality and governance effectiveness. Moreover, education is directly related to children, learners, teachers, personal data, equitable access, and human-resource quality; therefore, state management must be cautious, coordinated, and long-term in orientation.

Against this background, the article focuses on three issues: the theoretical basis and requirements of state management of digital transformation in education; the current situation of state management of digital transformation in education; and solutions for improving the effectiveness and efficiency of state management in this field in the coming period.

II. THEORETICAL BACKGROUND AND RESEARCH METHODS

2.1. Theoretical background and analytical framework

State management of education refers to activities carried out by competent state agencies to issue, organize, inspect, and evaluate the implementation of policies and laws on education, thereby ensuring that the education system operates in accordance with national development objectives. In the context of digital transformation, state management of education is no longer limited to the management of curricula, teachers, facilities, finance, and educational quality. It also extends to the management of data, digital platforms, digital infrastructure, information security, digital competence, digital learning resources, and forms of education in the digital environment.

Digital transformation in education can be understood as the process of applying digital technologies, digital data, and digital governance methods to transform the ways education is managed, taught, learned, assessed, and served. Digital transformation differs from simple informatization. Informatization mainly uses technology to support existing processes, while digital transformation requires redesigning processes, changing operating models, taking data as the basis for decision-making, and improving the experiences of learners, teachers, educational institutions, and citizens.

From the perspective of public management, digital transformation in education requires a shift from management based largely on paper records, periodic reports, and administrative commands to governance based on data, information transparency, system interoperability, and real-time feedback. The State plays a role in creating institutions, issuing standards, building data infrastructure, ensuring safety, regulating the education technology market, and supervising quality. Educational institutions are responsible for implementation, school-governance renewal, building digital culture, and developing digital competence among staff and learners.

This article approaches state management of digital transformation in education through six main groups of content: developing institutions, strategies, and plans; managing, connecting, and exploiting education data; developing digital infrastructure, digital platforms, and digital learning resources; enhancing digital competence for managers, teachers, staff, and learners; ensuring information security, personal-data protection, and digital ethics; and conducting inspection, monitoring, evaluation, and evidence-based policy improvement.

Based on the above foundations, the article uses an analytical framework consisting of four groups of criteria: institutions, data, competence, and governance effectiveness. Institutions refer to the completeness, coherence, and adaptability of the policy framework. Data refer to the degree of digitization, standardization, interoperability, and security. Competence refers to the digital capability of managers, teachers, and learners. Governance effectiveness refers to improvements in processes, public-service quality, teaching and learning quality, monitoring capacity, and accountability.

2.2. Research methods

The study uses a qualitative approach, combining document analysis, policy synthesis, analysis of publicly available secondary data, and SWOT analysis. The main sources include documents issued by the National Assembly, the Government, the Prime Minister, and the Ministry of Education and Training on national digital transformation, information technology application in education, electronic transactions, personal-data protection, learners' digital competence, and digital competence for teachers and education managers.

The secondary data used in this article include publicly available information on the implementation of digital transformation and administrative reform by the Ministry of Education and Training; information on the education-sector database; online public services; digital academic records; and digital competence frameworks for learners, teachers, and managers. These data are used as practical evidence and are not interpreted as survey data directly collected by the author.

Document analysis was used to systematize the theoretical and legal foundations. Policy synthesis was used to identify objectives, instruments, and mechanisms of state management in digital transformation in education. SWOT analysis was used to assess strengths, weaknesses, opportunities, and threats, thereby proposing appropriate solutions. As a policy and state-management

study, the article does not aim at statistical generalization but focuses on identifying issues, management implications, and practical solutions.

III. RESEARCH FINDINGS

3.1. Current situation of state management of digital transformation in education

First, the policy system for digital transformation in education has gradually been formed and improved. Decision No. 749/QD-TTg dated June 3, 2020 approving the National Digital Transformation Program to 2025 with orientations to 2030 placed education within the overall national digital transformation agenda. Subsequently, Decision No. 131/QD-TTg dated January 25, 2022 approving the Project on strengthening information technology application and digital transformation in education and training for the 2022-2025 period, with orientations to 2030, provided a sector-specific framework for education. Objectives related to education databases, digital learning resources, online public services, online teaching, school governance, digital competence, and digital infrastructure have been more clearly defined than in previous periods.

Second, the education-sector database has made important progress. According to publicly released information by the Ministry of Education and Training on digital transformation and administrative reform tasks in 2025, the education sector has digitized nearly 24.55 million records of teachers, education managers, and students into the education database. This is an important foundation for renewing management methods, reducing manual reporting, supporting policy-making, and increasing transparency in educational management (Ministry of Education and Training, 2025a).

Third, online public services and administrative reform in education have seen significant changes. The service for registering for the high-school graduation examination recorded 1,029,678 online applications. The service for recognizing bachelor's, master's, doctoral, and equivalent degrees issued by foreign educational institutions for use in Vietnam recorded 9,448 applications. These figures show that digital transformation is not confined to internal sector management but directly affects the delivery of public services to citizens (Ministry of Education and Training, 2025a).

Fourth, digital academic records and electronic records in general education have been implemented with notable progress. The Ministry of Education and Training completed the pilot implementation of digital academic records at the primary level in 11,400 out of 14,663 primary schools, reaching 77.75 percent. At the time of implementation, all participating educational institutions in 63 provinces and centrally governed cities connected and synchronized academic-record data to the digital academic-record database managed by the Ministry. This result provides a practical basis for expanding digital academic records and electronic records, while also raising management requirements related to data standards, electronic authentication, security, and the legal validity of electronic records.

Fifth, state management of digital competence development has advanced. Circular No. 02/2025/TT-BGDDT regulates the digital competence framework for learners, consisting of six competence domains and twenty-four component competences, divided into four levels from basic to advanced across eight stages. In 2026, Circular No. 18/2026/TT-BGDDT issued the digital competence framework for teachers and managers of preschool, general education, and continuing education institutions, consisting of six competence domains and twenty component competences. These documents provide an important basis for training, self-assessment, and digital competence development across the education sector (Ministry of Education and Training, 2025b; Ministry of Education and Training, 2026).

However, alongside these results, state management of digital transformation in education still faces several limitations. The institutional framework has not fully kept pace with the development of new technologies, especially artificial intelligence, open educational resources, learning data, and education technology platforms. Education data are not yet fully consistent across systems, software, and localities. Digital infrastructure remains uneven between advantaged and disadvantaged areas. Digital competence among education managers, teachers, and learners is not uniform. Personal-data protection mechanisms in the educational environment need to be further specified at the school level.

Table 1. Selected results and practical bases for digital transformation in education

Content group	Typical result/basis	Management implication
Education database	Nearly 24.55 million records of teachers, managers, and students have been digitized	Creates a foundation for data-driven education governance
Online public services	1,029,678 online applications for high-school graduation examination registration	Provides evidence of digital transformation in public-service delivery in education
Recognition of foreign degrees	9,448 applications submitted through online public services	Contributes to administrative reform and reduced transaction costs
Digital academic records at the primary level	11,400 out of 14,663 primary schools joined the pilot, reaching 77.75 percent	Provides a practical basis for expanding digital academic records and electronic records

Learners' digital competence	Circular No. 02/2025/TT-BGDDT defines 6 competence domains and 24 component competences	Provides common standards for developing, assessing, and recognizing learners' digital competence
Digital competence of teachers and managers	Circular No. 18/2026/TT-BGDDT defines 6 competence domains and 20 component competences	Provides a basis for training staff to meet digital-education requirements

Source: Synthesized by the author from the Ministry of Education and Training (2025a, 2025b, 2026) and the Government Portal.

3.2. Issues raised for state management

From the above situation, five central issues can be identified for state management of digital transformation in education.

First, it is necessary to shift the focus from "information technology application" to "digital education governance." Information technology application often focuses on software, devices, and administrative tasks, whereas digital education governance emphasizes process redesign, data connection, evidence-based decision-making, and improving the quality of services for learners. Without a change in management thinking, digital transformation may merely move old processes onto digital platforms without creating new value.

Second, education data should be managed as a special type of public asset. Education data are used not only for statistical purposes but also for policy-making, resource allocation, dropout-risk warning, education-quality monitoring, and personalized learning. However, because education data are linked to human beings, especially children, they must be strictly protected in accordance with the legal requirements on personal-data protection and electronic transactions (Government of Vietnam, 2023; National Assembly of Vietnam, 2023).

Third, digital equity in education must be ensured. Digital transformation is meaningful only when it expands learning opportunities rather than deepening the gap between advantaged and disadvantaged students. State management must pay particular attention to connectivity infrastructure, learning devices, appropriate digital learning resources, support for teachers in disadvantaged areas, and policies for vulnerable groups.

Fourth, digital competence should be developed as a component of education quality. Digital competence should not be confined to Informatics as a subject; it needs to be integrated into learning activities, experiential activities, research, communication, and problem-solving. For education managers, digital competence must be associated with data governance, digital administration, information analysis, and risk control.

Fifth, mechanisms for evaluating the effectiveness of digital transformation should be developed. Digital transformation cannot be evaluated only by the number of computers, installed software systems, or digitized documents. It should be assessed by reductions in procedures and processing time, improvements in teaching quality, increased access for learners, greater transparency, citizen satisfaction, and improvements in education management outcomes.

Table 2. SWOT analysis of state management of digital transformation in education

Factor group	Main content	Management implication
Strengths	Clear policy orientations; the sectoral database has been formed; many localities and institutions have experience in using technology	Shift from movement-based implementation to data-driven governance and effectiveness assessment
Weaknesses	Uneven infrastructure; fragmented data; unequal digital competence; some places still view digital transformation as a technical task	Strengthen standardization, interoperability, and position-based capacity building
Opportunities	Rapid development of digital technology, artificial intelligence, open learning resources, and flexible-learning needs	Mobilize public-private cooperation, shared platforms, and high-quality digital learning resources
Threats	Digital divide, data risks, information security, platform dependency, and formalistic investment	Strengthen risk governance, personal-data protection, and regular inspection and monitoring

Source: Proposed by the author based on the situation analysis.

3.3. Solutions for improving state management of digital transformation in education

First, institutions and coordination mechanisms for digital transformation in education should be improved. Regulations should be reviewed and supplemented on education-data standards, platform-connection standards, digital learning resources, electronic records, digital academic records, digital diplomas, online assessment, online classes, the use of artificial intelligence in

education, personal-data protection, and the responsibilities of relevant stakeholders. The coordination mechanism should be consistent from the central to the local level while ensuring flexibility for educational institutions.

Second, the education-data ecosystem should be standardized and developed. Data should be managed according to the principles of being accurate, complete, clean, living, consistent, and secure. Each student, teacher, educational institution, training program, diploma, certificate, and learning result should be managed with an appropriate identifier, ensuring interoperability across levels of education, localities, and management systems. Each educational institution needs a process for data entry, verification, approval, exploitation, and protection.

Third, digital infrastructure and shared digital platforms should be developed. The State should prioritize stable Internet connectivity, minimum devices, appropriate smart classrooms, secure server systems or cloud services, learning-management platforms, school-governance platforms, and security systems for educational institutions, especially in disadvantaged, mountainous, island, and socio-economically difficult areas.

Fourth, digital competence should be enhanced for education managers, teachers, and learners. Education managers need training in digital transformation planning, data governance, digital administration, assessment of technology investment effectiveness, personal-data protection, and risk management. For teachers, professional development should be linked to digital lesson design, blended-learning organization, open-resource use, online assessment, learning-data analysis, and guiding students to learn safely in the digital environment.

Fifth, information security, personal-data protection, and digital ethics should be ensured. Each educational institution needs regulations on data management, access authorization, platform use, information-security incident response, and risk reporting. When cooperating with technology enterprises, management agencies and schools must clearly regulate data ownership, confidentiality responsibilities, data storage locations, processing duration, data deletion mechanisms, and responsibilities in case of incidents.

Sixth, inspection, monitoring, and evaluation of digital transformation should be renewed. A set of indicators for assessing digital transformation in education should be developed at the levels of departments, divisions, schools, and programs. The indicators should cover digital infrastructure, digital data, online public services, school governance, digital teaching, digital competence, information security, citizen satisfaction, and the efficiency of resource use. Evaluation should not only rank institutions but also support policy improvement and institutional development.

Table 3. Framework of solutions for improving state management of digital transformation in education

Solution group	Key content	Expected result
Institutional improvement	Supplement regulations on data, digital resources, AI, platforms, and online assessment	A more coherent legal corridor and fewer management gaps
Data standardization	Develop data standards and processes for data entry, verification, use, and protection	Accurate, complete, clean, living data for management
Infrastructure development	Invest in connectivity, devices, shared platforms, and support for disadvantaged areas	Reduced digital divide and increased access to digital education
Digital competence development	Train managers, teachers, and learners based on competence frameworks and job positions	Substantive digital transformation linked with teaching innovation
Data protection	Regulations on information security, authorization, platform control, and digital ethics education	Reduced data risks and better protection of learners' rights
Effectiveness evaluation	Build indicators, conduct periodic evaluation, and use feedback for improvement	Greater accountability and reduced formalistic investment

Source: Proposed by the author based on research findings.

IV. DISCUSSION

The findings show that state management of digital transformation in education in Vietnam is moving from the initial and expansion stage to a stage that requires greater depth. In the early stage, priorities often included infrastructure, software, initial data, and online public services. However, as digital transformation reaches a higher level, management requirements are no longer limited to whether platforms exist. The key questions are whether platforms are interoperable, whether data are reliable, whether teachers use them effectively, whether learners benefit, and whether educational quality is improved.

A notable issue is the distinction between digitization and digital transformation. If the process only digitizes paper records, transfers forms to software, or organizes online meetings, the education system changes its tools but not its operating mode. Substantive digital transformation should create shorter management procedures, more accurate data, faster feedback, more transparent decisions, and better learning experiences. Therefore, state management should avoid focusing merely on the number of software systems or devices and should instead concentrate on outputs and social impacts.

Another important point is that digital transformation in education must be considered in relation to both management renewal and pedagogical innovation. Technology does not automatically improve educational quality if teaching methods, assessment practices, and school governance remain unchanged. Conversely, when technology is combined with appropriate pedagogical design, learning data, and high-quality digital resources, education can become more flexible, personalized, and equitable. This requires the State to lead by establishing standards, providing resources, and protecting public interests.

From the perspective of public management, digital transformation in education also creates higher requirements for accountability. When data are digitized and connected, management agencies have better conditions to identify problems, allocate resources, evaluate quality, and provide policy feedback. However, this is only possible if data are seriously governed. Incorrect, incomplete, or outdated data may lead to wrong decisions. Therefore, data governance should be regarded as a professional management function, not merely a technical support task.

The study also highlights the importance of digital equity. In education, the digital divide is not only a gap in devices and Internet connectivity, but also a gap in skills, learning resources, family support, self-learning capacity, and access to digitally competent teachers. Without compensatory policies, digital transformation may create greater advantages for those who already have favorable conditions, while disadvantaged groups continue to be left behind.

This article has several limitations. As a policy analysis based on secondary data, it does not use a large-scale quantitative survey to measure satisfaction, digital readiness, or the impact of digital transformation on learning outcomes. Future studies may develop survey indicators for managers, teachers, students, parents, and information-technology staff in different localities. Case studies of localities or educational institutions that have implemented digital transformation effectively should also be conducted to draw lessons that can be scaled up.

V. CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusions

Digital transformation in education is an inevitable trend and an important task in the process of fundamental and comprehensive renewal of education and training. State management of digital transformation in education plays a decisive role in orienting, coordinating, standardizing, supporting, inspecting, and ensuring that digital transformation is implemented with the right objectives, effectiveness, and equity.

The research findings show that Vietnam has made positive progress in policy development, education-sector database construction, online public services, digital academic records, and digital competence development. However, state management still faces limitations such as institutions lagging behind technological change, inconsistent data, uneven infrastructure, unequal digital competence, data-security risks, and the lack of mechanisms for evaluating digital transformation based on outputs and outcomes.

To improve the effectiveness and efficiency of state management, it is necessary to shift from technology application to digital education governance; regard education data as a special type of public asset; link digital transformation with pedagogical innovation and school governance; ensure digital equity; and strengthen accountability through concrete evaluation indicators. Only then can digital transformation truly contribute to improving education quality, modernizing management, and better serving people's learning needs.

5.2. Policy and practical recommendations

First, the legal framework for digital transformation in education should be improved in a coherent, flexible, and up-to-date manner. Priority should be given to regulations on education data, digital learning resources, digital platforms, online assessment, the use of artificial intelligence in education, information security, and the personal-data protection of learners.

Second, a national education-data strategy should be developed, clearly defining data standards, data-management entities, access rights, updating responsibilities, sharing mechanisms, and data-protection procedures. Each educational institution should have a staff member or unit responsible for data governance and trained in both technical and legal aspects.

Third, resources should be prioritized for digital infrastructure in disadvantaged areas, ensuring that students and teachers have minimum conditions for participating in digital education. Investment policies should avoid fragmentation and prioritize shared platforms, essential devices, stable connectivity, and long-term technical support.

Fourth, regular digital competence training should be implemented for managers, teachers, and learners. Training programs should be linked to job positions, professional tasks, and specific outputs, avoiding purely formal training.

Fifth, information security and personal-data protection in education should be strengthened. Educational institutions must have regulations on data use, incident-response procedures, access-authorization mechanisms, and digital ethics guidance for teachers, students, and parents.

Sixth, a set of indicators for assessing digital transformation in education should be developed to measure substantive outcomes. Indicators should reflect reductions in procedures, improvements in service quality, management efficiency, learning experiences, data security, and the narrowing of the digital divide.

REFERENCES

1. European Commission. (2022). Digital Competence Framework for Citizens: DigComp 2.2. Luxembourg: Publications Office of the European Union.
2. Government of Vietnam. (2023). Decree No. 13/2023/ND-CP dated April 17, 2023 on personal data protection. Hanoi.
3. Government of Vietnam. (2024). Decree No. 147/2024/ND-CP dated November 9, 2024 on the management, provision, and use of Internet services and online information. Hanoi.
4. Ministry of Education and Training. (2025a). Implementation of digital transformation and administrative reform tasks in 2025. Portal of the Ministry of Education and Training.
5. Ministry of Education and Training. (2025b). Circular No. 02/2025/TT-BGDDT dated January 24, 2025 regulating the digital competence framework for learners. Hanoi.
6. Ministry of Education and Training. (2025c). Official Letter No. 119/BGDDT-GDTH dated January 10, 2025 guiding the implementation of digital academic records at the primary level. Hanoi.
7. Ministry of Education and Training. (2026). Circular No. 18/2026/TT-BGDDT dated March 27, 2026 issuing the digital competence framework for teachers and managers of preschool, general education, and continuing education institutions. Hanoi.
8. National Assembly of Vietnam. (2019). Law on Education No. 43/2019/QH14 dated June 14, 2019. Hanoi.
9. National Assembly of Vietnam. (2023). Law on Electronic Transactions No. 20/2023/QH15 dated June 22, 2023. Hanoi.
10. OECD. (2021). OECD Digital Education Outlook 2021: Pushing the frontiers with artificial intelligence, blockchain and robots. Paris: OECD Publishing.
11. Prime Minister of Vietnam. (2020). Decision No. 749/QD-TTg dated June 3, 2020 approving the National Digital Transformation Program to 2025, with orientations to 2030. Hanoi.
12. Prime Minister of Vietnam. (2022). Decision No. 131/QD-TTg dated January 25, 2022 approving the Project on strengthening information technology application and digital transformation in education and training for the 2022-2025 period, with orientations to 2030. Hanoi.
13. UNESCO. (2019). Recommendation on Open Educational Resources. Paris: UNESCO.
14. UNESCO. (2023). Global Education Monitoring Report 2023: Technology in education: A tool on whose terms? Paris: UNESCO.
15. World Bank. (2020). Reimagining human connections: Technology and innovation in education at the World Bank. Washington, DC: World Bank.