Innovative Approaches To Improving The Management Competences Of Vocational Education Institutions' Leaders In The Context Of Digital Transformation

Boboev Farrukh Akhmedjonovich

Independent researcher at the Institute of the Development of Professional Education, Doctor of Philosophy (PhD) in Pedagogical Sciences

ABSTRACT

This scientific article explored the theoretical and methodological foundations for improving the managerial competencies of vocational education institution leaders in the context of digital transformation. Within the scope of the research, the essence of key concepts such as "managerial competence," "digital transformation," and "innovative approach" was critically analyzed, and authorial definitions were proposed. The transition of management theories from a traditional-administrative approach to a digital leadership paradigm was substantiated. As a result of synthesizing conceptual frameworks developed by international organizations (UNESCO, OECD, World Bank) and advanced theories (distributed leadership, inside-out improvement), an updated three-cluster structure of leader competencies was formed. This structure includes strategic-technological, innovative-adaptive, and humanistic-collaborative competencies. The analysis identified the structural components and key indicators for each competency cluster.

Keywords: vocational education, managerial competence, digital transformation, digital leadership, innovative approach, distributed leadership, education management, competency model.

Introduction. Digital transformation, recognized as a global megatrend of the 21st century, is having a profound and inevitable impact on all spheres of society, especially the education system. The vocational education system, which is directly related to the labor market, is under enormous pressure to adapt to these changes. In this process, the role of the head of an educational institution is changing radically, from a mere administrator to the main driver of strategic changes and the initiator of innovations. The national development strategies of Uzbekistan, in particular, the “Digital Uzbekistan - 2030” strategy and the “Concept for the Development of the Higher Education System of the Republic of Uzbekistan until 2030”, set the digitalization of education as a priority task. However, the success of these strategies is not limited only to the creation of technological infrastructure. Their implementation depends, first of all, on the management potential of educational institutions, that is, the ability of leaders to effectively operate in new conditions. From this point of view, the head of a vocational education institution appears as a central figure determining the success or failure of systemic transformation.

The scientific context of this problem lies at the intersection of several major international and national research areas. At the international level, UNESCO's ICT Competency Framework for Teachers (ICT-CFT) has provided a framework for teachers' technological literacy, but it has not paid sufficient attention to the issue of institutional leadership. The Organization for Economic Cooperation and Development (OECD), within the framework of its "Leadership for 21st Century Learning" initiative, has shifted its focus from simple ICT skills to the concept of "learning leadership". This approach requires complex, systemic thinking, such as creating an innovative learning environment and decentralizing management responsibilities. The World Bank's "Digital Skills Framework" reveals the economic drivers of education reforms and covers a wide range of digital skills (from basic literacy to advanced professional competencies) necessary for economic participation. In Uzbekistan, although significant research has been conducted in the field of educational management by scientists such as R.H. Juraev, U. Begimkulov, and A. Abdukodirov, the issue of developing management competencies of vocational education leaders in the context of digital transformation has not been studied separately and comprehensively in their works. The gradual development of international concepts shows that the global discourse has shifted from technical skills to transformational leadership (knowledge of change management).

Thus, although existing studies have highlighted digital skills for teachers, general principles of school leadership, and the need for digital transformation in Uzbekistan, the lack of a holistic and integrated theoretical model for leaders of vocational educational institutions creates a serious scientific gap. Today, a leader is required to have not only technological literacy, but also competencies that combine various aspects, such as strategic thinking, creating an innovative culture, adapting to changes, and preserving humanistic values. The analysis of the problem shows that existing approaches are often fragmented and do not connect technological, pedagogical and managerial aspects. Therefore, the purpose of this article is to develop a theoretically based innovative model that combines strategic-technological, innovative-adaptive and humanistic-collaborative aspects to improve the managerial competencies of heads of vocational educational institutions in the context of digital transformation.

Methods. This study is based on the method of theoretical and conceptual analysis, in which the methods of a systematic approach, comparative analysis and synthesis were used. To form the theoretical basis of the study, the content and essence of the main concepts were deeply studied and various theoretical approaches to management were critically analyzed. First of all, the concept of "management competence" was analyzed. In pedagogical literature, it is often defined as a system of internal resources and skills necessary for effective management. Summarizing these definitions, the author's definition was proposed for the context of the digital era:

Management competence in the digital era is an integrated system of strategic knowledge, adaptive skills and humanistic values that allow a leader to effectively lead an educational institution through the processes of continuous technological and cultural transformation, while simultaneously ensuring organizational resilience and high-quality educational results.

The second important concept is "digital transformation". This concept is often confused with the automation of existing processes, i.e. digitalization. In fact, digital transformation is a fundamental rethinking of the strategy, culture and processes of an organization with the help of technology. In the field of education, this means changing pedagogy, administration and relationships with stakeholders. So, it is not just about introducing new technologies, but about moving to a completely new way of thinking and operating. The third main concept is "innovative approaches". This concept was defined as the opposite of traditional, hierarchical management. It was based on two main theories. The first is Richard Elmore's concept of "distributed leadership", in which leadership is

viewed not as the task of a single "hero" leader, but as a collective function aimed at improving the "core of learning" (the interaction between teacher, student and content). The second is David Hopkins's "inside-out school improvement" model, which focuses on building a school's internal capacity for change and creating a professional learning community rather than implementing top-down directives. These approaches suggest that innovation is seen as an internal need rather than an external obligation. The evolution of leadership paradigms is important for understanding the demands placed on leaders in the digital age. While the traditional administrative model is based on stability, control, and bureaucracy, modern approaches prioritize flexibility, collaboration, and innovation. The New Leadership Playbook for the Digital Age, developed by the Massachusetts Institute of Technology (MIT), criticizes the "eroding behaviors" inherent in the traditional model, such as top-down management and tight control. Instead, they propose "emerging behaviors," including risk-taking, change management, and working across boundaries. These approaches align well with the principles of distributed and adaptive leadership. One of the key challenges for the modern leader is balancing the demands of digitization (efficiency, data, systems) and humanization (empathy, culture, collaboration). Digital transformation inherently requires the management of technology, data analytics, and platforms, which forces leaders to adopt technocratic, performance-oriented thinking. However, MIT research identifies this as a key tension. Theorists like Elmore and Hopkins also focus on the human side of change—creating a culture of collaboration and professional learning communities. Thus, an effective leader in the digital age must be not only a technocrat, but also a humanist. He must be able to both analyze a dashboard and conduct an empathetic and collaborative team meeting. This dilemma is a central problem of modern management and a central feature of the proposed competency model. The following table presents a comparative analysis of theoretical approaches to management.

Table 1. Comparative analysis of theoretical approaches to management

Parameters	**Traditional-administrative approach**	**A transformational approach**	**Distributed leadership**	**Digital leadership**
Main aim	Stability, control, order Inspiration, change of perspective	Learning core improvement,	collective responsibility	Flexibility, innovation, data-driven
Decision Making	Centralized, Hierarchical Top-down	Charismatic Decentralized	Collaborative Dynamic	Networked, Data-Driven
Role of Technology Automation	Reporting Communication Tool Experience	Exchange Platform	Ecosystem	Integral to Strategy
Source/Theorist	Classical Management	() Bass, Burns	Elmore MIT	UNESCO

This table clearly demonstrates a fundamental shift in management thinking. The rigid and centralized nature of traditional models is not suitable for the dynamic and unpredictable environment of digital transformation. Therefore, the need to form a new competency model based on the principles of distributed and digital leadership has been justified. This model requires the leader not only to give orders, but also to direct the team to development, to see technologies as a strategic tool, and to be ready for constant change. The proposed approach is aimed at embodying these aspects.

Results. Based on the synthesis of global conceptual foundations and leadership theories, a new, three-cluster structure for the management competencies of the head of a vocational educational institution is proposed. This structure is designed to reflect the complex and multifaceted nature of managing an educational institution in the digital era. The novelty of the model is that it abandons the simple list of skills and presents it as a holistic system that mutually reinforces technological skills, innovative potential and people-oriented leadership. This approach unifies the fragmented aspects of leadership and emphasizes its strategic role. The proposed model consists of the following three main and interrelated clusters, each of which is clearly defined and divided into structural components:

1. Strategic-technological competence. This is the ability to visualize, plan and manage the technological and information infrastructure of the institution as a strategic asset. This competence goes beyond the technical literacy of the leader and requires that technology be seen as a means to achieve the long-term goals of the organization. Its components are:

Digital Visioning: Developing and communicating a clear vision of how technology can improve educational and institutional efficiency.

Data-Driven Governance: Using analytics to inform decision-making, resource allocation, and quality assurance.

Managing the Technological Ecosystem: Overseeing the integration of learning management systems (LMS), digital security, and new technologies (e.g., artificial intelligence, VR/AR).

2. Innovative-adaptive competency. This is the ability to lead continuous change, foster a culture of experimentation, and ensure that the organization is agile and responsive. This competency requires the leader to navigate uncertainty and embrace failure as an opportunity to learn. Its components include:

Agile Management: Implementing projects in iterative, adaptive phases to manage uncertainty.

Fostering a Culture of Innovation: Encouraging risk-taking, learning from failure, and creating opportunities for staff to try new pedagogical approaches.

Change Management: Effectively managing the human side of technological and organizational change, overcoming resistance, and building support.

3. Humanistic-collaborative competence. This is the ability to build trust, ensure psychological safety, and create a vibrant learning community. This cluster emphasizes that people, not technology, should be at the center of digital transformation. Its components are:

Digital Ethics and Citizenship: Advocating for the responsible and ethical use of technology and data.

Emotional Intelligence and Empathy: Understanding and managing the motivations and concerns of staff and students in an environment of high change.

Building Learning Communities: Facilitating collaboration, peer learning, and knowledge sharing among employees.

Discussion. The proposed three-cluster competency model develops existing theoretical foundations and adapts them to the specific conditions of vocational education institutions. The scientific significance of this model is further clarified by comparing it with other studies and concepts. For example, while the UNESCO ICT competency framework provides a comprehensive foundation of technical and pedagogical skills for teachers, it pays less attention to strategic management and leadership of institutional change. The proposed model, however, is not limited to answering the question “what skills are needed?” but also seeks to answer the question “how should a leader think and behave to manage transformation?” In this case, the strategic-technological cluster elevates the UNESCO framework to the level of leadership and connects it with organizational strategy.

The “New Leadership Handbook” developed by MIT offers general principles for the business sector. The “explorer” mindset and “emerging behaviors” such as empathy and integrity are reflected in our model, respectively, in the innovative-adaptive and humanistic-collaborative clusters. However, our model adapts and operationalizes these general

principles to the context of education, in particular, professional education. For example, the concept of "collaboration" in the educational environment is enriched by the theories of Richard Elmore's "distributed leadership" and David Hopkins's "professional learning communities". This confirms that these fundamental theories of educational change have not lost their relevance in the digital era, but, on the contrary, have acquired a new meaning. Our humanistic-collaborative cluster is precisely the practical expression of these theories in the digital era. Thus, the proposed model does not deny existing approaches, but synthesizes them, creating a new, holistic and contextually adapted theoretical structure.

The practical significance of the results is also significant. First, this three-cluster model can serve as a conceptual basis for developing advanced training and retraining programs for heads of vocational educational institutions. Instead of separate, disconnected technological seminars, it is recommended to create complex programs that develop strategic, innovative and humanitarian potential in parallel. Such programs will prepare leaders not only to use new tools, but also to change the culture of the entire organization. Second, the key indicators presented in Table 2 can serve as the basis for developing effective tools for assessing and selecting leaders (for example, 360-degree feedback surveys, competency-based interview protocols). This will help identify the most suitable candidates for management positions. Third, the model allows education policymakers to express in a clear, scientifically based language the results expected from a 21st century educational leader. It can be used to develop national standards for school principals and leaders and is fully consistent with the goals set in the national development strategies of Uzbekistan.

Of course, like any theoretical study, this work has its limitations. The main limitation is its theoretical nature. The proposed model is based on a synthesis of existing literature and has not yet been empirically validated. Its applicability may vary depending on the specific conditions of different vocational educational institutions (e.g., size, specialization, resources). Therefore, there are clear directions for future research. First, it is necessary to conduct quantitative research (surveys) based on the proposed model to assess the existing level of competence of managers in Uzbekistan. Second, it is important to conduct in-depth qualitative research (case studies) in institutions that are successfully implementing digital transformation to study how their managers demonstrate these competences in practice. Third, it is possible to develop a pilot training program based on the three-cluster model and measure its impact on leadership effectiveness and institutional outcomes. These studies will serve to practically test and further improve the proposed theoretical model.

References

1. UNESCO. (2018). *UNESCO ICT Competency Framework for Teachers, Version 3*. Paris, UNESCO. – 62 p.
2. OECD. (2013). *Leadership for 21st Century Learning*. OECD Publishing, Paris. – 164 p. – DOI: 10.1787/9789264205406-en.
3. World Bank. (2025). *Digital Skills Development: Competence Frameworks, Assessment Tools, and Pedagogical Approaches*. Education Working Paper Series No. 14. Washington, DC: World Bank Group. – 88 p..
4. Зимина Е.Ю. (2014). Управленческая компетентность как объект педагогического исследования // *Современные проблемы науки и образования*. – № 2. – С. 215–221.
5. Schmidt, T., & Tang, M. (2020). Digitalization in Education: Challenges, Trends and Transformative Potential. *Educational Technology Quarterly*, 2020(4), 496–512. – DOI: 10.55056/etq.40.
6. Elmore, R. F. (2000). *Building a New Structure for School Leadership*. The Albert Shanker Institute. – 48 p.
7. Hopkins, D. (2013). A Generic Model For School Improvement. *Teaching Times*.
8. Ready, D. A., et al. (2020). *The New Leadership Playbook for the Digital Age: Reimagining What It Takes to Lead*. MIT

Sloan Management Review & Cognizant. – 28 p.
9. Бегимқулов У.Ш. (2007). Педагогик таълимда замонавий ахборот технологияларини жорий этишнинг илмий-назарий асослари. – Тошкент: Фан. – 160 б.
10. Ўзбекистон Республикаси Президентининг 2020 йил 5 октябрдаги “Рақамли Ўзбекистон – 2030” стратегиясини тасдиқлаш ва уни самарали амалга ошириш чора-тадбирлари тўғрисида”ги ПФ-6079-сон Фармони. // *Қонун ҳужжатлари маълумотлари миллий базаси*.
11. Абдуқодиров А.А. (2012). Ахборотлаштирилган таълим муҳитида ўқувчиларнинг интеллектуал салоҳиятини ривожлантириш. – Тошкент: Фан. – 210 б.