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PECULIAR FEATURES OF FORMING DIGITAL LEADERSHIP AND STRATEGIC COMPETENCIES OF A LEADER IN VOCATIONAL EDUCATION MANAGEMENT

Boboyev Farrux Axmedjonovich
Independent Researcher (PhD),
Institute for the Development of Vocational Education

Abstract

In this article, the specific features of developing digital leadership and strategic competencies of leaders in vocational education management were scientifically analyzed. Theoretical and practical problems of education management in digital transformation processes were deeply studied. Mechanisms for developing strategic thinking, information management, and innovative management skills of executive personnel were revealed. The advanced theoretical views served to digitize education management processes and increase the competitiveness of vocational education institutions. The obtained scientific conclusions and proposals served as a methodological basis for improving the education management system and making data-driven management decisions.

Keywords: Digital leadership, strategic competence, vocational education, education management, digital transformation, innovative management, executive personnel, information environment.

Introduction

In the context where the digitalization of educational processes has become a global priority trend, the formation of digital leadership and strategic competencies among leaders of vocational education institutions is emerging as one of the most urgent scientific and practical issues. In the conditions of the digital economy, it is impossible to achieve high efficiency through traditional management methods alone. Therefore, the integration of information and communication technologies into educational management and the development

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of a new type of strategic thinking among managerial personnel have become an objective necessity.

Both in the Republic of Uzbekistan and in international practice, this issue is being addressed at the strategic level. In particular, the "Digital Uzbekistan – 2030" Strategy and state programs aimed at developing vocational education identify the enhancement of digital literacy among managerial staff and training them in innovative management approaches as priority tasks. Internationally, authoritative organizations such as UNESCO and OECD emphasize in their strategic reports (for example, the "UNESCO Strategy for TVET 2022–2029") that the process of digital transformation in technical and vocational education and training requires leaders to possess inclusive, flexible, and data-driven management competencies. In leading educational institutions worldwide, special attention is paid to preparing managers to make decisions based on Big Data analysis and educational analytics.

From a scientific perspective, digital leadership is not merely the implementation of technologies, but rather the transformation of the entire culture of an educational institution. In vocational education institutions, the strategic competencies of leaders are measured by their ability to foresee future developments, adapt to technological changes, and guide teams toward a common goal. This, in turn, requires the creation of modern organizational and pedagogical conditions within management processes, as well as the development of specialized structures that ensure the continuous professional growth of educational leaders.

In highlighting the scientific problem raised in the article, revealing the essence and scientific foundations of the key concepts occupies a central place. In scientific analysis, the concept of "Digital Leadership" refers to the ability of a leader of a vocational education institution to effectively utilize the opportunities provided by digital technologies in managing teams, fostering a digital culture within the educational environment, and ensuring the innovative development of the institution. "Strategic competence," in turn, is understood as the leader's ability to define the long-term development goals of an educational institution, evaluate available resources (including digital resources), and make optimal managerial decisions under conditions of uncertainty.

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These conceptual notions have been extensively explored in both international and national scholarship by leading researchers. In particular, scholars V. T. M. Huong and T. T. Quy, discussing the multidimensional structure of leadership, emphasize in their research that: "the digital competence of school leaders is a multidimensional structure encompassing strategic, pedagogical, technical, and ethical components." Furthermore, regarding the influence of digital leadership on educational teams, M. Z. Zheng scientifically substantiates that: "the digital leadership of school administrators directly affects teachers' acceptance and use of artificial intelligence technologies." This idea demonstrates that a leader's role in technological processes directly influences the quality of the educational process itself. Among national scholars, Associate Professor U. X. Axrorova, in her scientific studies on management competencies, notes that: "during professional development processes, the communicative, leadership, emotional-intellectual, strategic thinking, reflective, and socio-adaptive competencies of managerial personnel emerge as interconnected structural components."

In addition, Professor F. A. Boboyev, in his studies on the implementation of digital management in vocational education, emphasizes that: "under conditions of digital transformation, a new mechanism has been developed for enhancing the digital management competencies of leaders, including skills in the use of digital technologies, strategic planning, the formation of an innovative educational culture, and the establishment of industrial partnerships." The cited scientific viewpoints demonstrate that the theoretical foundation of the issue raised in the article is substantial and well grounded, while also fully confirming the necessity of developing an integrated structure of digital leadership.

Based on the scientific views highlighted in the theoretical analysis, it becomes evident that the formation of digital leadership and strategic competencies among leaders in vocational education management cannot be achieved through fragmented or one-time training courses alone, but rather through a systematically and consistently organized reflective learning environment. A deeper scientific analysis of this process allows several interrelated ideas to be logically developed. First, management processes should be organized through a strategic and data-driven approach. Digital leadership is not merely about creating databases, but about using those data resources to foresee the future development of an educational institution. A leader in vocational education must be able to

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systematically evaluate students' academic performance, labor market demands, and the professional capacity of teachers through the use of Learning Analytics, Big Data technologies, and artificial intelligence. On this basis, the strategic development plan of the institution can be designed using concrete facts and statistical evidence. Such an approach eliminates the subjectivity of managerial decisions and grounds them in objective and measurable criteria.

Second, it is necessary to develop leaders' competencies in change management and in fostering a digital culture. Practice demonstrates that the introduction of new technologies in vocational education institutions, particularly electronic document management systems and Education Management Information Systems (EMIS), often encounters psychological and professional resistance from staff members. The primary role of a digital leader is therefore to reduce these psychological barriers, unite the team around common strategic goals, and provide motivation for innovation. To achieve this, leaders should possess emotional intelligence, transformational leadership skills, and a culture of both virtual and real communication based on mutual trust within the team. Such a creative approach contributes to the establishment of a healthy and innovation-oriented organizational environment.

Third, the digitalization of the information and educational environment enables vocational education institutions to elevate industry–education cooperation to a new level. A distinctive feature of vocational education is its direct connection with the labor market and employers. By applying strategic competencies, educational leaders should establish continuous interaction with employers through virtual co-working centers and electronic platforms. This creates opportunities to ensure graduate employability, digitally monitor dual education processes, and adapt educational programs to the evolving demands of employers and the labor market.

The practical significance of these scientific ideas and competencies is invaluable. These approaches can be applied in various processes, particularly in the daily management activities of vocational schools, colleges, and technical institutions, including the allocation of financial resources, the recruitment and evaluation of teaching staff through KPI systems, as well as in the development of leadership training programs within professional development centers.

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Their implementation can produce substantial outcomes. In practice, the introduction of these approaches accelerates digital document management processes within educational institutions and ensures the rational use of budgetary resources. It also contributes to the establishment of an open and transparent educational environment, thereby reducing corruption risks. Ultimately, the competitiveness of vocational education institutions increases, while the position of graduates in the labor market becomes significantly stronger.

The structure for developing the digital and strategic competencies of leaders in vocational education management can be scientifically described through the following table:

Table 1. Structure for developing the digital and strategic competencies of a leader in vocational education management

Competency Area	Scientific Content and Implementation Mechanisms	Expected Practical and Strategic Outcomes
Cognitive-Strategic Competency	Analysis of labor market and educational trends, designing the long-term goals of the institution based on Big Data and analytical forecasting.	Making accurate decisions under conditions of uncertainty and clearly defining the development vector of the institution.
Technological-Operational Competency	Implementation of Education Management Information Systems (EMIS), virtual learning environments, and electronic monitoring systems.	Automation of daily management processes, saving time and resources, and ensuring transparency.
Socio-Communicative Competency	Transformational leadership, establishing communication within virtual teams, and developing digital collaboration with industry and business entities.	Overcoming resistance to innovation, motivating teams, and establishing sustainable cooperation with employers and industry partners.
Reflective-Evaluative Competency	Critical analysis of achieved results through digital analytics, continuous self-improvement, and adaptability to changing conditions.	Rapid identification and correction of management errors, as well as enhancement of the institution's level of digital maturity.

The structure presented in this table reflects an integrated mechanism for the comprehensive development of digital leadership and strategic potential among managerial personnel. From a scientific perspective, these four areas are closely interconnected, and none of them can function effectively in isolation from the

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others. The cognitive-strategic dimension establishes the intellectual foundation necessary for the educational process, while the technological-operational dimension provides the practical tools for its implementation. Socio-communicative competencies ensure the human factor, namely the psychological and emotional stability of the team. Meanwhile, the reflective-evaluative dimension guarantees the continuous improvement and renewal of the system. When these mechanisms are applied in an integrative manner, outdated reproductive methods of management in vocational education institutions are gradually replaced by productive, creative, and data-driven management approaches.

The general scientific conclusion is that the formation of digital leadership and strategic competencies in vocational education management is not merely about learning to use modern software and technologies. Rather, it is a multidimensional and systemic process aimed at fundamentally transforming the leader's way of thinking, strategic forecasting abilities, and management culture. The success of this process directly depends on the scientific validity of the organizational, educational-methodological, and technological conditions created within both professional development systems and everyday management practice. From a theoretical perspective, the approaches revealed in the article contribute to adapting the science of educational management to the requirements of the digital economy, reinterpreting the phenomenon of leadership through new paradigms such as transformational and data-centric leadership, and introducing these concepts into scientific discourse.

Based on the scientific views and conclusions highlighted in the analysis, the following specific scientific recommendations can be proposed:

-It is advisable to systematically incorporate specialized modules such as "Digital Leadership and Strategic Educational Management" and "Decision-Making Based on Big Data" into the curricula of centers for retraining and advanced professional development of managerial personnel.

-It is necessary to develop clear qualimetric criteria and indicators for assessing the level of digital maturity of leaders in vocational education institutions, and on this basis, to widely implement monitoring practices for tracking the dynamics of their professional growth.

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-In order to facilitate the exchange of experience among leaders and promote best management practices, it is essential to establish continuously operating virtual peer-to-peer coworking platforms.

-Taking into account the psychological aspects of digital management, it is recommended to expand the scope of specialized practical training programs aimed at developing leaders' adaptability to change, overcoming resistance to innovation, and motivating teams toward digital transformation.

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