



ORGANIZATIONAL AND PEDAGOGICAL MODEL OF ADAPTIVE MANAGEMENT OF INNOVATIVE DEVELOPMENT OF A HIGHER EDUCATION INSTITUTION

MODELO ORGANIZACIONAL Y PEDAGÓGICO PARA LA GESTIÓN ADAPTATIVA DEL DESARROLLO INNOVADOR EN INSTITUCIONES DE EDUCACIÓN SUPERIOR

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ABSTRACT

This article substantiates an organisational and pedagogical model of adaptive management for the innovative development of a higher education institution. The study clarifies the essence of adaptive management, innovative institutional development, stages of adaptive governance, integrated management, and performance assessment. The proposed model is understood as an open, dynamic and self-organising system operating at three levels: systemic, institutional and personal. The article identifies the relationship between stages of innovative development and stages of adaptive management formation within a higher education institution. The conceptual framework is based on a polyparadigmatic approach and includes methodological, project-theoretical, organisational-technological, and result-evaluative components. Its core consists of principles and regularities that determine the strategy and tactics of institutional change. The model combines a competency-based approach to students' personal and professional development, a functional model of quality management, a process model of educational programme implementation, a project model of

institutional development, and a system for monitoring and evaluating management effectiveness. The article also proposes key performance indicators, including normative, universal and institutional indicators. These indicators make it possible to assess institutional progress, identify reserves for improving educational quality, and adjust management mechanisms. Particular attention is paid to pedagogical conditions that ensure effective implementation of the model.

Keywords:

Adaptive Management, Innovative Development, Higher Education Institution, Organizational and Pedagogical Model, Quality Management, Institutional Governance

RESUMEN

Este artículo fundamenta un modelo organizacional y pedagógico de gestión adaptativa para el desarrollo innovador de una institución de educación superior. El estudio analiza la esencia de la gestión adaptativa, el desarrollo institucional innovador, las etapas de la gobernanza



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adaptativa, la gestión integrada y la evaluación del desempeño institucional. El modelo propuesto se concibe como un sistema abierto, dinámico y autoorganizado que opera en tres niveles: sistémico, institucional y personal. Asimismo, identifica la relación entre las etapas del desarrollo innovador y las fases de conformación de la gestión adaptativa dentro de las instituciones de educación superior. El marco conceptual se sustenta en un enfoque poliparadigmático que integra componentes metodológicos, teórico-proyectuales, organizativo-tecnológicos y de evaluación de resultados. Su núcleo está constituido por principios y regularidades que orientan las estrategias y tácticas del cambio institucional. El modelo articula un enfoque basado en competencias para el desarrollo personal y profesional de los estudiantes, un modelo funcional de gestión de la calidad, un modelo de procesos para la implementación de programas educativos, un modelo de proyectos para el desarrollo institucional y un sistema de monitoreo y evaluación de la eficacia de la gestión. Además, propone un conjunto de indicadores clave de desempeño, incluidos indicadores normativos, universales e institucionales, que permiten evaluar el progreso de la institución, identificar oportunidades para fortalecer la calidad educativa y ajustar los mecanismos de gestión. Finalmente, se destacan las condiciones pedagógicas necesarias para garantizar la implementación efectiva del modelo.

Palabras clave:

Gestión Adaptativa, Desarrollo Innovador, Institución de Educación Superior, Modelo Organizacional y Pedagógico, Gestión de la Calidad, Gobernanza Institucional.

INTRODUCTION

The governance of higher education institutions has undergone profound transformations over the last decades as a consequence of globalization, digitalization, international competition, demographic changes and the increasing demand for educational quality. Universities are no longer viewed solely as teaching institutions but as complex organizations responsible for generating knowledge, promoting innovation, responding to labor market needs and contributing to sustainable social and economic development. Consequently, higher education governance has evolved from traditional administrative models towards more flexible, evidence-based and innovation-oriented management systems capable of responding to rapidly changing environments. More recent studies argue that sustainable institutional development depends on integrating organizational learning, strategic leadership, innovation management and adaptive governance into a coherent institutional framework that enables

universities to anticipate change rather than merely respond to it (Sarmiento dos Santos-da Silva, 2026). Likewise, innovation management has increasingly been recognized as a strategic function that aligns institutional vision, organizational culture, stakeholder participation and continuous improvement to strengthen institutional competitiveness (Aedi et al., 2022).

International research increasingly emphasizes that effective governance depends on the balance between institutional autonomy, accountability and strategic management. According to the Organization for Economic Cooperation and Development (2019), higher education governance encompasses the structures, relationships and decision-making processes through which educational policies are designed, implemented and evaluated at both national and institutional levels. Recent governance reforms have shifted from direct governmental control towards "steering from a distance," where greater institutional autonomy is accompanied by stronger quality assurance mechanisms, performance indicators and public accountability (Organization for Economic Cooperation and Development, 2020). These transformations require universities to develop adaptive management systems capable of combining organizational flexibility with long-term strategic planning.

In this regard, Wilson & Sy (2021) demonstrate that successful innovation management in higher education depends on integrating structural, human, political and symbolic dimensions of organizational change, highlighting that technological innovation alone is insufficient without institutional readiness and effective change management. Similarly, Purohit & Dutt (2024) argue that pedagogical innovation has become a strategic driver of institutional transformation, requiring universities to redesign governance processes, promote interdisciplinary collaboration, strengthen digital capabilities and foster student-centered learning ecosystems. More recently, Indriastuti et al. (2023) propose an adaptive higher education management model supported by artificial intelligence, showing that data-driven decision-making, intelligent information systems and adaptive leadership can significantly improve institutional responsiveness, educational quality and organizational performance in rapidly changing environments. Together, these studies reinforce the need for adaptive, innovation-oriented and strategically integrated governance models capable of supporting the sustainable development of contemporary higher education institutions.

At the institutional level, innovation management has become a key determinant of university competitiveness. Recent studies indicate that higher education institutions

must continuously modernize educational programs, strengthen stakeholder engagement, improve organizational performance and respond to emerging socio-economic demands through innovative management practices (Matvieieva et al., 2025). Likewise, the transformation of traditional hierarchical governance structures into participatory and evidence-based management systems has become one of the major priorities for contemporary universities. These developments confirm that adaptive management is increasingly recognized as an essential condition for sustainable institutional development.

Digital transformation has also accelerated the need for adaptive governance. Universities increasingly rely on digital ecosystems, cloud-based learning environments and intelligent management information systems to support teaching, research and institutional decision-making (Dudycz et al., 2022; Glazunova & Shyshkina, 2018). More recently, the rapid emergence of artificial intelligence has introduced new challenges related to academic integrity, curriculum design, administrative processes and institutional governance. Current evidence indicates that universities are developing policies for the responsible implementation of generative artificial intelligence while simultaneously adapting their governance structures to address technological, ethical and organizational challenges (Katsamakos et al., 2024; Li et al., 2025).

Another important dimension of contemporary higher education governance concerns quality assurance and internationalization. The Standards and Guidelines for Quality Assurance by the European Association for Quality Assurance in Higher Education (2015) establish common principles for internal and external quality assurance, stakeholder participation, transparency and continuous improvement. These principles reinforce the idea that adaptive management should not be limited to administrative efficiency but should also serve as a mechanism for ensuring educational quality, institutional learning and organizational resilience.

Within Europe, these transformations have become particularly significant for countries engaged in the European Higher Education Area. The European integration process requires higher education institutions to strengthen institutional autonomy, improve governance quality, modernize educational programs and align their internal quality assurance systems with European standards. These priorities have become especially relevant for Ukraine, whose higher education system is currently undergoing profound structural, organizational and pedagogical transformation.

In Ukraine, higher education institutions operate under particularly complex conditions shaped not only by

digitalization, European integration and educational reforms, but also by war-related challenges, demographic changes, resource constraints and the need to strengthen institutional resilience. The Law of Ukraine "On Higher Education" (Verkhovna Rada of Ukraine, 2014) defines institutional autonomy as the foundation for academic freedom, internal governance, research development and organizational decision-making, while the Strategy for the Development of Higher Education in Ukraine for 2022–2032 (Cabinet of Ministers of Ukraine, 2022) identifies modernization, innovation, quality assurance and international competitiveness among its principal priorities. These strategic documents indicate that university management should evolve from administrative control towards adaptive, evidence-based and innovation-oriented governance.

The theoretical foundations of adaptive management within Ukrainian educational research have been primarily developed by Yelnykova et al. (2009), who conceptualizes adaptive management as a system based on directed self-organization, continuous monitoring, feedback mechanisms and flexible managerial decision-making. Subsequent studies have extended these ideas to the professional development of academic staff (Zhabenko, 2019), innovation management in higher education (Noskov, 2025), institutional competitiveness (Matvieieva et al., 2025) and European integration processes (Teslenko, 2023), demonstrating the growing importance of adaptive governance within Ukrainian higher education.

Recent studies further indicate that the consequences of Russia's full-scale invasion have profoundly affected Ukrainian higher education. Although international scientific collaboration and academic mobility have increased (Hladchenko, 2025, 2026), universities continue to face severe financial, organizational and infrastructural challenges. The World Bank (2025) emphasize that education remains one of the priority sectors requiring sustained recovery and reconstruction efforts. Under these circumstances, adaptive management becomes a strategic mechanism for strengthening institutional resilience, maintaining educational quality and supporting the long-term innovative development of Ukrainian higher education institutions.

Despite the growing body of literature on adaptive management, innovation management, digital transformation and quality assurance, previous studies mainly address these issues separately. There remains a lack of comprehensive organizational and pedagogical models that integrate these dimensions into a coherent adaptive management framework capable of supporting the innovative development of higher education institutions under the

specific conditions of Ukraine. This gap provides the rationale for the present study.

MATERIALS AND METHODS

This study adopted a qualitative theoretical research design based on conceptual analysis and model development. The methodological premise is that the innovative development of higher education institutions cannot be understood as the implementation of isolated innovations or technological changes, but rather as a comprehensive organizational and pedagogical process in which institutions evolve from responding to environmental challenges to actively transforming their educational, managerial, and research practices. The study therefore conceptualizes adaptive management as a strategic mechanism that enables higher education institutions to maintain institutional resilience while promoting sustainable innovation under conditions of uncertainty.

The research object was the innovative development of higher education institutions under the conditions of digital transformation, European integration, and increasing quality assurance requirements. The subject of the research was the organizational and pedagogical model of adaptive management, including its conceptual foundations, structural components, implementation conditions, and evaluation mechanisms. Accordingly, the aim of the study was to theoretically substantiate and develop an organizational and pedagogical model of adaptive management capable of improving institutional governance, strengthening innovation capacity, and supporting sustainable development in higher education institutions. The research was guided by the hypothesis that institutional innovative development can be enhanced through an adaptive management system integrating strategic, process-based, project-based, competency-based, and quality-oriented approaches supported by continuous monitoring and feedback.

The methodological framework followed a polyparadigmatic approach that integrates systems theory, institutional theory, competency-based education, total quality management, adaptive governance, and the balanced scorecard concept. This integration enabled the analysis of higher education institutions as open and dynamic socio-pedagogical systems whose development depends on the interaction of organizational, managerial, pedagogical, informational, and human factors. Such a framework provided a comprehensive basis for examining institutional innovation from strategic, organizational, and educational perspectives while ensuring coherence between institutional objectives and management practices.

The research was conducted in four successive stages. First, contemporary trends affecting higher education were analyzed, with particular emphasis on digitalization, quality assurance, European integration, institutional resilience, and the specific challenges facing Ukrainian universities. Second, the theoretical foundations of adaptive management were examined through the analysis of concepts related to organizational adaptation, feedback mechanisms, self-organization, and strategic decision-making. Third, an organizational and pedagogical model of adaptive management was developed by identifying its main structural components, including the target, methodological, organizational, pedagogical, information-analytical, and evaluative dimensions. Finally, the pedagogical conditions required for implementing the proposed model were established, encompassing organizational, psychological, and didactic conditions necessary to support institutional innovation and sustainable development.

The methodological procedures combined several complementary scientific methods. Theoretical analysis and synthesis were employed to examine scientific literature and regulatory documents concerning higher education governance, adaptive management, innovation management, and quality assurance. Systems analysis was used to examine higher education institutions as integrated socio-pedagogical systems, while comparative analysis was used to identify similarities and differences between Ukrainian and European approaches to institutional governance. Modeling was applied to design the proposed organizational and pedagogical framework, and structural-functional analysis enabled the identification of its principal components, functions, principles, and implementation mechanisms.

The effectiveness of the proposed model was conceptualized through a comprehensive system of performance indicators derived from the balanced scorecard approach. These indicators include educational quality, student learning outcomes, academic staff development, research productivity, innovation activity, stakeholder engagement, digital transformation, internationalization, institutional resilience, and the effectiveness of internal quality assurance systems. Together, these indicators provide an evidence-based framework for monitoring institutional performance, supporting strategic decision-making, and facilitating the continuous improvement of adaptive management processes.

Overall, the adopted methodology combines conceptual analysis with organizational modeling to develop an integrated adaptive management framework for higher education institutions. This methodological approach provides a coherent theoretical basis for understanding institutional

innovation and offers practical guidance for improving governance, educational quality, and organizational resilience in contemporary higher education systems, particularly within the context of Ukraine.

RESULTS AND DISCUSSIONS

The findings of this study confirm that the innovative development of a higher education institution requires a shift from fragmented managerial actions to an integrated organizational and pedagogical system of adaptive management. The proposed approach differs from traditional models of university governance because it simultaneously considers institutional development through the interaction of functions, processes, and projects. This allows adaptive management to be understood not as a separate managerial technology but as a comprehensive mechanism for ensuring the long-term improvement of educational quality, institutional resilience, and innovation capacity.

A key feature of the proposed approach is that the quality of education is regarded as the central objective of innovative development. In this context, innovation is not limited to the introduction of new technologies, digital tools, or administrative reforms. It is primarily connected with the development of students' professional, universal, and adaptive competencies, the professional development of academic staff, the improvement of educational programs, and the strengthening of internal quality assurance mechanisms. Therefore, adaptive management should ensure not only organizational flexibility but also the pedagogical effectiveness of institutional transformation.

The study shows that adaptive management of the innovative development of a higher education institution should be based on a polyparadigmatic methodology. This methodology combines the competency-based approach, quality management, institutional theory, process management, project management, and the balanced scorecard framework. Such a combination is important because contemporary higher education institutions function as open, nonlinear, and dynamic systems. They are influenced by educational policy, labor market demands, digitalization, European integration, academic mobility, demographic change, and, in the Ukrainian context, war-related and post-war challenges. Under these conditions, a single managerial paradigm is insufficient to explain and guide institutional development.

The proposed model also emphasizes the importance of feedback as a core mechanism of adaptive management. Feedback makes it possible to assess whether institutional decisions correspond to strategic goals, educational outcomes, and external expectations. In this regard, the system of key performance indicators becomes an integral part of adaptive management rather than merely an auxiliary evaluation tool. It enables the institution to identify weaknesses, adjust functional, process-based, and project-based models, mobilize internal resources, and improve the quality of educational activities.

The discussion of the results also demonstrates that adaptive management operates at three interconnected levels: systemic, institutional, and individual. At the systemic level, adaptive management reflects the alignment between the institution and the broader trends in higher education development. At the institutional level, it ensures the coordination of internal structures, educational processes, quality assurance mechanisms, and innovation projects. At the individual level, it is associated with the motivation, professional development, and innovative activities of academic staff, as well as with the development of students' adaptive capacities.

The regularities and principles identified in the study can be summarized (Table 1) as follows:

Table 1: Principles and Regularities of Adaptive Management at Different Levels of Higher Education Institutions.

Level of adaptive management	Main regularities	General principles
Systemic level	The adaptive management system must correspond to the state, needs and development trends of higher education.	Correspondence; unity of innovation strategy; goal orientation; realism; flexibility of goals.
Institutional level	The interaction of a higher education institution with the external environment depends on the stages of adaptive management: adaptation, correction and transformation.	Flexibility; interdependence with the external environment; responsiveness to uncertainty; optimal combination of managerial approaches; integration; decentralisation; stability; institutional dynamism.
Personal level	The effectiveness of innovative educational technologies depends on the motivation of academic staff and the development of students' competencies.	Feedback; clear evaluation criteria; effectiveness; anticipatory education; competitiveness of graduates; learner subjectivity; continuity of personal development.

The methodological significance of these principles lies in their ability to connect different dimensions of institutional governance into a coherent system. They reveal the relationship between the general properties of adaptive management, the internal processes of a higher education institution and the personal development of participants in the educational process. In this sense, adaptive management performs an integrative function: it unites strategic planning, quality assurance, educational programme development, staff motivation, student-centred learning and institutional monitoring.

An important implication of the study is the need to combine functional, process-based and project-based management models. The functional model ensures the coordination of planning, analysis, control and decision-making. The process model allows the institution to formalise and improve key educational processes, such as curriculum design, admission, student support, assessment of learning outcomes and monitoring of educational quality. The project-based model creates opportunities for implementing strategic development programmes, innovation initiatives and partnership projects. Their integration makes adaptive management more flexible and allows the institution to move from passive adaptation to active transformation of its environment (Korostylov et al., 2020).

The proposed approach is particularly relevant for Ukrainian higher education institutions. In the current conditions, they must respond simultaneously to several groups of challenges: the need to maintain educational quality, ensure institutional resilience, integrate into the European Higher Education Area, develop digital infrastructure, preserve human capital and support post-war recovery. Adaptive management can provide a conceptual and practical framework for addressing these challenges because it combines flexibility with strategic orientation, institutional autonomy with accountability, and innovation with quality assurance.

The results also indicate that the implementation of adaptive management requires specific pedagogical conditions. Organisational and pedagogical conditions include the development of an internal quality management system, an integrated information and analytical management system, and network cooperation with stakeholders. Psychological and pedagogical conditions involve overcoming resistance to change, supporting staff motivation and forming an innovation-oriented institutional culture. Didactic conditions include the use of the competency-based approach, anticipatory learning, innovative teaching methods and the development of students' adaptive competencies.

At the same time, the proposed model should not be understood as a universal template that can be mechanically applied to every higher education institution. Its implementation depends on the institutional profile, available resources, organisational culture, digital maturity, staff readiness, leadership capacity and external environment. Therefore, the model requires contextual adaptation. This is especially important for institutions with different missions, disciplinary profiles, regional roles and levels of internationalisation.

Thus, the discussion confirms that adaptive management is a necessary condition for the innovative development of a higher education institution. It allows the institution to maintain stability under conditions of uncertainty, correct its development trajectory on the basis of feedback, and gradually transform its internal and external environment through innovation. The proposed organisational and pedagogical model contributes to the development of a more flexible, evidence-based and quality-oriented system of higher education governance. Its practical value lies in the possibility of using it for strategic planning, internal quality assurance, staff development, educational programme modernisation and institutional performance evaluation.

An important element of the proposed organisational and pedagogical model is the personal and professional development of students as active subjects of the educational process. Within the system of adaptive management, such development is understood as a progressive movement towards the formation of students' ability to identify, analyse and solve innovative tasks in a particular field of professional activity. This means that the graduate should not only acquire knowledge and professional skills but also develop the capacity to act effectively in uncertain, changing and non-standard situations.

The process of solving any complex didactic or professional problem may be divided into three interconnected stages. The first stage is the formalisation of the problem, during which the student transforms a general problem situation into a system of specific tasks. The second stage is the construction of solutions, where the student develops a plan, scenario, model or algorithm for solving these tasks. The third stage is the practical implementation of the proposed solution with the achievement of a concrete result. Each of these stages requires a certain level of managerial, analytical, communicative and reflective abilities. These abilities are formed through feedback, continuous assessment and the gradual accumulation of knowledge and practical experience.

In this context, feedback becomes one of the key mechanisms of adaptive management. It allows the student,

teacher and institution to identify gaps between expected and actual learning outcomes, correct educational trajectories and improve the quality of professional training. Therefore, the personal and professional development of students should be organised within a specially designed competency-based didactic system. Such a system should be reflected in syllabi, educational programme structures, assessment tools and learning outcomes for each course or module.

The proposed model assumes that the required quality of graduate training can be achieved only through the comprehensive development of professional, universal and adaptive competencies. These competencies should include the ability to analyse complex situations, formalise problems, design solutions, work in teams, communicate effectively, use digital tools, make responsible decisions and adapt to changing professional environments. Thus, the competency-based format becomes not only a pedagogical tool but also an important component of institutional adaptive management.

The formation of an adaptive management system in a higher education institution passes through three main stages: adaptation, correction and transformation. At each stage, different management approaches become more significant, although they do not replace one another. Instead, they complement and integrate with each other. At the adaptation stage, the institution primarily uses functional management mechanisms aimed at maintaining stability, coordinating basic functions and responding to immediate external and internal changes. At the correction stage, process-based management becomes particularly important because it enables the institution to improve educational and administrative processes on the basis of monitoring and feedback. At the transformation stage, project-based management becomes dominant, since it allows the institution to implement innovation projects, strategic development programmes and partnership initiatives.

The functional model of quality management makes it possible to connect general management functions, such as planning, analysis, control and decision-making, with specific institutional goals and tasks. Within a unified information and analytical system, this model ensures coordination between different structural units and supports the quality of educational activity. Its main value lies in the fact that it allows the institution to maintain functional stability while adapting to changes in the external environment.

The process model of educational management provides integration of the key processes that ensure the functioning of a higher education institution. These processes include student admission, curriculum planning,

management of the student body, academic staff management, current and final assessment, monitoring of the educational process and document management. The process model enables the institution to make educational activity more transparent, measurable and adjustable. It also strengthens the connection between learning outcomes, quality assurance mechanisms and institutional decision-making.

The project model of innovative development is aimed at the rational distribution of authority and responsibility between different units and participants in the educational process. It allows the institution to create flexible project teams, implement strategic initiatives and respond quickly to emerging challenges. This model is especially important for the development of innovation-oriented universities because it supports cooperation between academic departments, administrative units, external partners, employers and other stakeholders.

The integration of functional, process-based and project-based models demonstrates that adaptive management should not be understood as a mechanical replacement of one managerial approach by another. On the contrary, the development of an organisational and pedagogical system of adaptive management requires their coordinated combination. Functional management provides stability, process management ensures systematic improvement, and project management creates conditions for innovation and transformation. Together, these models form an integrated management architecture capable of supporting the sustainable innovative development of a higher education institution.

Thus, the personal and professional development of students and the integration of functional, process-based and project-based management models are closely interconnected. The quality of graduate training depends not only on the content of educational programmes but also on the ability of the institution to manage educational processes adaptively, evaluate results systematically and create conditions for continuous improvement. This confirms that adaptive management is both a pedagogical and managerial mechanism aimed at ensuring the innovative development of higher education institutions.

The study resulted in the development of an organisational and pedagogical model of adaptive management for the innovative development of a higher education institution. The proposed model is understood as a dynamic, open, socio-pedagogical and socio-economic system of institutional governance that enables purposeful management of educational, organisational and innovation processes under conditions of uncertainty and constant change.

The essence of the organisational and pedagogical system of adaptive management is determined by its ability to respond flexibly to changes in the external and internal environment while preserving the strategic direction, functional stability and developmental capacity of the institution. Such a system operates under conditions of incomplete information about the managed processes and is continuously modified as new data, feedback and monitoring results become available. Therefore, adaptive management is not limited to administrative regulation; it functions as a mechanism of institutional self-renewal, correction and development.

The content of the proposed model includes a set of inter-related structural and functional components that ensure the integration of strategic, organisational, pedagogical, informational and evaluative dimensions of university governance. The model is implemented at three interconnected levels: the systemic level, the institutional level and the personal level. At the systemic level, adaptive management reflects the correspondence between the higher education institution and the general tendencies of national and European higher education development. At the institutional level, it ensures the coordination of internal structures, educational programmes, quality assurance mechanisms, research and innovation activities. At the personal level, it supports the professional development of academic staff and the formation of students' adaptive, professional and transferable competencies.

The results of the study show that the methodology of the organisational and pedagogical model should be based on a polyparadigmatic framework. This framework combines the competency-based approach, the principles of total quality management, institutional theory, systems theory, project management, process management and the logic of a balanced scorecard. Such an approach makes it possible to consider adaptive management as a complex pedagogical and managerial phenomenon characterised by openness, non-linearity, dynamism, synergy and the interaction of multiple institutional actors.

The proposed concept consists of four main components: methodological, project-theoretical, organisational-technological and result-evaluative. The methodological component determines the scientific approaches, principles and regularities of adaptive management. The project-theoretical component defines the logic of designing and implementing institutional development programmes. The organisational-technological component includes the mechanisms, tools and conditions necessary for the functioning of the adaptive management system. The result-evaluative component provides criteria and indicators for assessing the effectiveness of management decisions and institutional innovation development.

A central result of the study is the identification of regularities and principles that determine the functioning of adaptive management at different levels. At the systemic level, the model is based on the regularity that an adaptive management system must correspond to the state, needs and development trends of higher education. This regularity is realised through the principles of correspondence, strategic unity and alignment between institutional goals and broader social, economic, technological and educational transformations. Another regularity at this level is that an educational system becomes innovative when its target component clearly requires adaptive governance. This is implemented through the principles of goal orientation, realism, feasibility and evidence-based decision-making.

At the institutional level, the interaction between a higher education institution and its external environment is determined by the stages of adaptive management development: adaptation, correction and transformation. At the stage of adaptation, the institution responds to external changes and adjusts its internal processes. At the stage of correction, it modifies its strategies, structures and educational practices on the basis of monitoring and feedback. At the stage of transformation, the institution becomes capable not only of adapting to the environment but also of influencing it through innovation, partnerships, research, social engagement and educational leadership. This regularity is supported by the principles of flexibility, feedback, environmental responsiveness, integration and institutional resilience.

Another important regularity at the institutional level is that the development of adaptive management is connected with a changing balance between functional, process-based and project-based management approaches. The functional approach ensures the coordination of basic management functions such as planning, organisation, analysis, control and decision-making. The process approach makes it possible to improve educational and administrative processes, including admission, curriculum design, student support, academic staff development, monitoring of learning outcomes and internal quality assurance. The project-based approach enables the institution to implement strategic development programmes, innovation projects and partnership initiatives. The integration of these approaches creates a flexible management architecture capable of supporting sustainable institutional development.

At the personal level, the effectiveness of innovative educational technologies depends significantly on the motivation and innovation culture of academic staff. The study therefore identifies feedback, professional development, participation, motivation and clear evaluation criteria as

key principles for supporting staff engagement in innovation. Adaptive management should create conditions under which academic and administrative staff are not only objects of managerial influence but also active participants in institutional change.

The personal level also includes the development of students' adaptive abilities as an important condition for their future professional competitiveness. In contemporary higher education, graduates' competitiveness is determined not only by professional knowledge and skills but also by their ability to act in uncertain situations, solve non-standard problems, communicate effectively, learn continuously and adapt to changing professional environments. Therefore, the proposed model emphasises the principles of student-centredness, anticipatory education, competency development, subjectivity of the learner and the formation of universal and professional competencies.

The study also resulted in the development of a complex model of adaptive management for the innovative development of a higher education institution. This model is an open, dynamic and structurally integrated system that combines several interrelated submodels: a functional model of quality management, a process model of educational activity management, a project model of institutional development and a model of students' personal and professional development.

The functional model of quality management ensures the integration of general management functions with the specific task of improving educational quality. It allows the institution to connect planning, analysis, monitoring, control and decision-making within a unified information and analytical system. This model strengthens coordination between structural units and supports the institution's ability to adapt to external changes.

The process model of educational activity management focuses on the formalisation, improvement and monitoring of key educational processes. These include the design and implementation of educational programmes, student admission, curriculum planning, student progression, staff management, assessment of learning outcomes and monitoring of the educational process. The main function of this model is to ensure the institution's ability to modify its educational activity in response to internal and external factors.

The project model of adaptive management provides the organisational basis for implementing innovation-oriented institutional development. It involves the use of project teams, flexible coordination mechanisms, shared responsibility and operational interaction between functional units and project groups. This model enables the institution to implement development strategies, launch innovation

projects, strengthen external partnerships and transform its environment through its own innovation potential.

The model of students' personal and professional development represents the pedagogical dimension of adaptive management. It is based on a competency-oriented understanding of educational outcomes and is aimed at developing professional, social, communicative, analytical and adaptive abilities. In the Ukrainian context, this model should be aligned with national standards of higher education, the National Qualifications Framework, professional standards, labour market needs and European approaches to quality assurance.

An important result of the study is the substantiation of a methodology for monitoring and evaluating the effectiveness of adaptive management. The proposed evaluation methodology adapts the logic of a balanced scorecard to the specific nature of higher education. It includes indicators related to the quality of educational programmes, student learning outcomes, graduate employability, academic staff development, research and innovation activity, internationalisation, digital transformation, stakeholder involvement, internal quality assurance and institutional resilience.

The system of key performance indicators makes it possible to assess the effectiveness of innovative development from several perspectives: compliance with national and institutional regulations, comparison with other higher education institutions, evaluation of internal progress, identification of development reserves and adjustment of functional, process-based and project-based management models. Such an evaluation system enables university management to move from fragmented administrative control to evidence-based strategic governance.

The study also identified pedagogical conditions necessary for the effective implementation of the organisational and pedagogical model of adaptive management. These conditions are divided into three groups: organisational-pedagogical, psychological-pedagogical and didactic.

The organisational-pedagogical conditions include the introduction of an internal quality management system, the creation of an integrated information and analytical management system, the development of network cooperation and partnerships, and the coordination of strategic, educational and innovation processes within the institution.

The psychological-pedagogical conditions are aimed at overcoming resistance to change, developing innovation culture, supporting staff motivation, encouraging participation in institutional transformation and creating an environment of trust, cooperation and shared responsibility.

The didactic conditions include the implementation of a competency-based approach in the educational process, the development of students' adaptive abilities, the use of anticipatory learning, the integration of educational standards with professional requirements and the introduction of innovative teaching and assessment methods.

Thus, the results of the study demonstrate that adaptive management of innovative development should be understood as an integrated organisational and pedagogical system rather than as a set of separate management tools. The proposed model combines strategic orientation, institutional flexibility, quality assurance, digital and analytical support, staff innovation culture, student-centred learning and continuous evaluation. Its implementation can contribute to improving the quality of higher education, strengthening institutional resilience and increasing the capacity of higher education institutions to function effectively under conditions of uncertainty, transformation and European integration.

CONCLUSIONS

The study concludes that the innovative development of higher education institutions is primarily driven by structural transformation, quality assurance, digitalization, internationalization, and the adoption of student-centered educational models. These trends require institutions to strengthen their adaptability, organizational flexibility, and innovation capacity to respond effectively to rapidly changing educational, technological, and societal demands.

The findings demonstrate that innovative development progresses through three interrelated stages: adaptation, correction, and transformation. During the adaptation stage, institutions respond to internal and external changes; during the correction stage, they improve organizational, managerial, and educational processes through continuous monitoring and feedback; and during the transformation stage, they consolidate innovation by strengthening research, digital technologies, partnerships, and educational practices. These findings confirm that adaptive management is a strategic mechanism for achieving sustainable institutional development.

The proposed organizational and pedagogical model provides an integrated framework for adaptive management by combining methodological, organizational, technological, and evaluative components. Supported by a polyparadigmatic approach that integrates competency-based education, quality management, institutional theory, systems thinking, and project management, the model facilitates strategic planning, internal quality assurance, evidence-based decision-making, and continuous institutional improvement.

The study also shows that adaptive management should operate simultaneously at the systemic, institutional, and individual levels. This multilevel approach enables institutions to coordinate governance, educational programs, innovation projects, and stakeholder engagement while promoting the professional development of academic staff and the acquisition of students' professional, analytical, and lifelong learning competencies. The integration of functional, process-based, and project-based management further contributes to balancing institutional stability with continuous innovation.

Finally, the study highlights the importance of comprehensive monitoring and evaluation systems supported by appropriate organizational, pedagogical, and psychological conditions. The proposed model offers a practical framework for improving governance, educational quality, digital transformation, and institutional resilience. In the context of Ukrainian higher education, its implementation can strengthen strategic management, support European integration processes, and enhance the long-term innovative development and competitiveness of higher education institutions.

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CONFLICT OF INTEREST:

The authors declare no conflict of interest.