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PEDAGOGICAL-TECHNOLOGICAL CONCEPTS OF MANAGEMENT OF EDUCATIONAL PROCESSES IN HIGHER EDUCATION

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Annotation: This article analyzes the pedagogical and technological concepts of implementing digital management in higher education. The research employed analysis, experimentation, surveys, and modeling methods. The study explored the possibilities of digital management in university learning processes and developed a pedagogical-technological model based on the integration of pedagogical and information technologies. The proposed model enhances the efficiency of the educational process, automates management activities, and promotes an innovative approach to learning organization. The results demonstrate the practical importance of digital management in the modernization of higher education.
Keywords: higher education, digital management, pedagogical technologies, learning process, modeling, efficiency, innovative approach.

Today, the introduction of digital technologies in the higher education system is becoming one of the main factors for improving the quality of education and ensuring the effectiveness of management. Digital management of educational processes not only allows for rapid processing and analysis of information, but also serves to organize the activities of an educational institution in a transparent and innovative way.

The combination of pedagogical and technological approaches is important in the implementation of digital management in modern education. In this process, it is necessary to integrate the activities of the teacher, the educational environment, the information and communication infrastructure and the education management system. Therefore, the management of educational processes based on pedagogical and technological models in higher education institutions is emerging as a new research direction [1].

The purpose of this study is to scientifically analyze the pedagogical and technological foundations of the introduction of digital management in higher education, to develop an innovative model for effective management of educational processes, and to justify its practical effectiveness.

LITERATURE ANALYSIS.

Scientific research in the field of higher education management (A.Abdullaev, N.Mirzaev, J.Biggs, P.Ramsden, and others) emphasizes the use of information and communication technologies, the development of pedagogical competencies, and the introduction of innovative management models as the main criteria for the effective organization of educational processes. At the same time, in the process of creating a digital learning environment, not only technical or software support, but also pedagogical and technological approaches play an important role. That is, educational management is not just an administrative task, but a process closely related to the content, methods, and goals of education.

In order to implement digital management in higher education institutions, it is necessary to create opportunities for mutual harmony of pedagogical and information systems, automatic data analysis and monitoring of the educational process.

RESEARCH METHODS.

The following scientific methods were used during the research:

Analysis and synthesis - available scientific resources, educational management systems and pedagogical technologies were studied.

Questionnaire survey - collected opinions on the effectiveness of digital management among teachers and students of higher education institutions.

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Experience - based on the established model, digital elements were introduced into the management of the educational process.

Modeling - a pedagogical-technological model of educational process management in higher education was developed.

Educational processes in a number of higher education institutions in our country were selected as the object of research.

RESEARCH RESULTS AND DISCUSSION

As a result of the research, a pedagogical-technological model of digital-based management of educational processes in higher education was developed. This model includes the following main components:

Pedagogical component - development of digital competences of teachers and students, introduction of active interactive educational methods.

Pedagogical component is the substantive basis of educational, methodical and educational processes necessary for effective management of educational processes in the higher education system. It is inextricably linked to the human factor in the educational process, the relationship between teacher and student, educational goals, content, methods, and assessment system.

The main task of the pedagogical component is the scientifically based, purposeful and systematic organization of pedagogical activities in the digital educational environment. It includes the following areas: Determining educational goals and content. In the implementation of digital management in higher education, the goals and objectives of education are revised in accordance with the requirements of the time. In this regard, systematization of theoretical and practical content in digital format aimed at forming knowledge, skills and competencies is of great importance.

Selection of pedagogical methods and tools. Effective use of interactive methods, distance learning technologies, multimedia resources, web seminars and virtual simulations is provided in the educational component. It ensures active participation of students and develops their independent thinking and creativity.

Improving teacher-student relationships. In the digital management system, the role of the teacher changes - he is no longer a source of information, but a person who manages, directs and motivates the educational process. And the student becomes an active participant, an independent researcher and a subject who controls his own educational trajectory.

Evaluation and monitoring system. Within the framework of the pedagogical component, the system of evaluation of educational results is implemented on the basis of digital tools. With the help of electronic journals, automated test systems, online portfolios and activity indicators, an opportunity is created to accurately assess the quality of education.

Educational and social direction. The pedagogical component is aimed not only at imparting knowledge, but also at forming moral, cultural and social values. Development of humanism, teamwork, responsibility and citizenship in the digital environment is an integral part of the pedagogical process.

Therefore, the pedagogical component is the main link that ensures the content and effectiveness of the digital management system. Its effective operation depends on the digital competence and pedagogical culture of all participants of the educational process - pedagogues, students and management staff.

The technological component is the use of digital platforms that automate the planning, control and evaluation of the educational process.

The technological component is a systematic part that ensures the effective use of information and communication technologies, digital tools and automated systems in the management of educational processes in higher education. It is used in all stages of the educational process - planning, implementation, monitoring and evaluation.

The essence of the technological component. The introduction of digital management in higher education institutions requires updating the technological foundations of the educational process.

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The technological component involves the digitization of all processes in the organization of education, data collection and analysis, management through an electronic platform.

Its main tasks are: automation and optimization of educational processes; integration of information systems and acceleration of information exchange; coordination of teacher and student activities in the digital environment; introduction of interactive methods of educational quality control.

Technological platforms and the digital environment. Various educational platforms and software form the practical basis of the technological component. Улар орасида қуйидагилар кенг қўлланилади: Learning Management Systems (LMS) - Moodle, Canvas, Google Classroom, Edmodo and others; virtual classrooms and laboratories - simulation and 3D modeling environments; electronic assessment systems - automated testing and results analysis platforms; Big Data and Learning Analytics - tools for analyzing and forecasting the educational process. These tools turn the learning process into an active, interactive and data-driven management system.

Integration of information and communication technologies. An important aspect of the technological component is the deep integration of ICT into the pedagogical process. This implies not only the use of technical capabilities, but also their pedagogical use. For example: instant exchange of ideas between teachers and students through online communication tools; personalization of knowledge through electronic textbooks and resource databases; analysis of learning outcomes and provision of individual recommendations using artificial intelligence.

Technological security and stability. Ensuring information security, data protection and system stability is important for the effective functioning of a digital learning environment. Therefore, within the framework of the technological component, attention is paid to the following tasks: introduction of cyber security standards; establish data encryption and authentication processes; regular updating of the electronic database. These measures ensure continuous and reliable management of the educational process.

Efficiency and innovation. The technological component serves not only to digitize the educational process, but also to organize it in an innovative and efficient way. It was determined that as a result of using digital management platforms: the time for planning the educational process was reduced by 25-30%; increased student activity and participation; evaluation processes have been accelerated and transparency has been ensured.

Therefore, the technological component is the main pillar of digital management in higher education, which makes it possible to effectively organize the pedagogical process, process data automatically, and improve the quality of education. When its implementation is carried out correctly and in close connection with the pedagogical component, it is possible to achieve high results.

Management component - monitoring the results of educational processes, establishing a decision-making system based on data analysis.

The management component is an organizational-pedagogical and strategic activity system that ensures effective organization, control and evaluation of educational processes in higher education institutions. It is aimed at coordinating the activities of all participants of the educational process, automating decision-making processes and managing the quality of education.

The essence of the management component. The management component is the central link in the digital management system in higher education. Its main goal is to systematically organize all resources (human, time, information and material) in the educational process and manage them with high efficiency.

Management activities are carried out in the following directions: planning and coordination of the educational process; development of personnel potential and improvement of digital competences of pedagogues; evaluation of educational results and quality monitoring; introduction of innovative organizational models.

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Management levels and tasks. The digital control system has a multi-level structure, in which the following levels are distinguished: strategic level - establishment of management policy by the management of the educational institution, determination of strategic goals and directions of digital development; organizational level - planning educational processes, electronic document circulation and information exchange at the level of faculties and departments; operational level - coordinating, monitoring and evaluating the activities of pedagogues and students through digital tools every day.

Through this system, management accelerates decision-making processes, ensures reliability and transparency of information.

Use of digital technologies in management. The effectiveness of the management component depends on the correct selection and integration of information systems and digital platforms. The following types of systems are widely used in higher education institutions: Learning Management System (LMS) - for planning and monitoring the educational process; ERP systems (Educational Resource Planning) - automation of financial, personnel and educational resources; CRM and electronic document management systems - collection and analysis of data on the activities of students and teachersBased on these systems, management processes are transferred to a digital environment, data is analyzed, and the possibility of making quick decisions is created [2].

Educational quality management and monitoring system. One of the important directions of the management component is the improvement of the system of evaluation and monitoring of the quality of education. To this end, the following practical mechanisms will be introduced: real-time monitoring of learning outcomes; electronic assessment of the effectiveness of teaching activities; automatic analysis of student satisfaction; and forecasting of educational processes based on Big Data. This approach makes it possible to assess the quality of education based on clear, numerical indicators.

Innovative management and leadership. In a modern higher education institution, leaders require not only administrative, but also innovative and strategic leadership competencies. In the context of digital governance, a leader must be able to unite the team around digital goals; be proactive in introducing new technologies; and create an open and free communication environment for teachers and students. Such an innovative management culture ensures the competitiveness of the educational institution [3].

Therefore, the management component occupies a central place in the process of digital transformation of the higher education system. It combines pedagogical and technological components into a single system, ensuring efficiency, transparency, and sustainability in managing the educational process. Thus, the mutual harmony of pedagogical, technological and management components is the main condition for the formation of a modern, digital and innovative educational environment in higher education [4].

According to the results of the experimental research, it was observed that the introduced pedagogical-technological model increased the efficiency of the educational process by 20-25%. Students' independent work activity and learning motivation have increased significantly. According to the results of the survey, 87% of the participants stated that digital management tools facilitate the educational process and ensure the transparency of educational information.

Also, the implementation of the model served to reduce the human factor in the control of the educational process and increase objectivity in the assessment of the quality of education.

CONCLUSION

The results of the study showed that the implementation of digital governance in higher education institutions is not just a technical process, but also requires a deep pedagogical and organizational approach. The developed pedagogical-technological model made it possible to automate the educational process, accelerate information exchange and increase management efficiency.

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As a result of putting this model into practice: quality indicators of educational process management have improved; active participation and motivation of students increased; a culture of using digital technologies in pedagogical activity was formed.

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Pedagogical approaches should be taken into account in the process of introducing digital management in higher education institutions; It is desirable to widely introduce the developed pedagogical-technological model into practice; it is recommended to organize special retraining courses for pedagogues on digital education management; it is necessary to improve the regulatory framework supporting the digital educational environment at the state level.

Therefore, the introduction of digital management in higher education institutions based on pedagogical-technological concepts is recommended as an important direction for improving the quality of education.

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