THE EFFECTIVENESS OF THE MODEL OF MANAGING EDUCATIONAL PROCESSES THROUGH DIGITALIZATION

Mamarasulov Maxmud Jumaboyevich
The head of department at the Center for the Research
on the Development of Higher Education

Annotation: This article describes the effectiveness of the model of managing the educational process through digitization in higher education institutions. With the introduction of digitization in the educational process of higher education institutions, it was discussed about the development of an educational model using these resources to improve the educational process and improve the quality of student knowledge. The advantages of digitalization-based educational process management, management models in the digitalization process, and important elements of their use are presented.

Keywords: model, digitization, platform, technology, information technology, educational management

Аннотация: В данной статье описана эффективность модели управления образовательным процессом посредством цифровизации в высших учебных заведениях. С внедрением цифровизации в образовательный процесс вузов обсуждалось развитие образовательной модели с использованием этих ресурсов для совершенствования образовательного процесса и повышения качества знаний студентов. Представлены преимущества управления образовательным процессом на основе цифровизации, модели управления в процессе цифровизации и важные элементы их использования.

Ключевые слова: модель, цифровизация, платформа, технология, информационные технологии, управление образованием.

Introduction. The digitalization of the higher education system is crucial for modern theory and practice of learning. Transformations in modern education – changing paradigms in education, student-oriented approach, and the application of ICT necessitate improving the knowledge of students [1].

There is a need for an education model based on the digitalization of educational processes in higher education to improve the knowledge of students.

The first point of modeling is to determine the aim, which in turn determines the type and purpose of models. It is important to connect these aims to modern issues of education. In the higher education system both the concept of education and learning activities are modelled.

Literature review. In every pedagogical research, the practical importance of the model is determined by its relevance with the object being studied, by how much consideration is given to follow the principles of modeling in all stages of model development, its precision, and appearance. Objectivity determines the capabilities, types, and functions of the model in pedagogical research. For pedagogical modelling the following research processes are characteristic:

– Entering the process and selecting the methodological basis of modeling, the qualitative description of the research topic;

– determining the functions of modeling;

– selecting the methods of measurement, identifying model development parameters and standards of assessing these parameters by finding out the relationship among the main elements of the research object;

– studying models and reasonability in solving the problems;

– using samples in pedagogical experiments;

– interpreting the results of the simulation meaningfully [2, 1].

When analyzing works dedicated to modeling, particularly pedagogical modeling, it will be evident that pedagogical modeling is a prospective direction of modern pedagogy and its use is crucial in our research, because modeling:

a) has heuristic power.

b) using it helps to build education processes as a modern system.

v) it helps to use educational technologies effectively.

d) it enables executing integrative functions in systematizing and documenting the theoretical foundations of modern pedagogy.

By the model of improving the knowledge of students through the digitalization of educational processes in higher education institutions, we understand the description and theoretical basis of educational processes, the digital environment, and the didactic functions that help improve the quality of education. The following components of digital modeling are identified:

The implementation and management of the system of digitalizing educational processes;

Distance and mixed education, project management in the digitalization of education processes;

Creation and management of electronic resources;

Monitoring digital education and improving the grading system.

Below we will examine all components of digital modelling individually.

The management and implementation of the system of digitalizing educational processes include technologies widely used in the field of education. These technologies employ new methods of assessment of acquisition of information, individual provision of personalized educational experience, and the automation of educational processes. Various technologies and devices must be tailored to educational institutions and student needs to manage and implement the digitalization of educational processes. Educational institutions must use modern technologies to improve student's knowledge and educational processes.

Distance and mixed education is one of the important methods of project development and its implementation **in the digitalization of educational processes.** This method allows to conduct the educational processes through instructions, movements, and other activities between teacher and students. Distance and mixed education allow students to gain knowledge and create experiences and help students form bonds regardless of geographic barriers.

Regarding the creation and management of electronic resources, there are the following directions:

1. Main electronic resources:

Web sites (HTML, CSS, JavaScript); Electronic library materials (PDF, EPUB, Mobi); Multimedia materials (video, audio, pictures); Presentations (PowerPoint, Keynote, Google Slides).

2. Additional electronic resources:

Interactive learning materials (Flash, HTML5, JavaScript); simulations and virtual augmented reality (VR/AR) materials; online tests and question bases; open educational resources (OER).

3. The process of creating and managing electronic resources:

Content-based design; user-oriented approach; the use of Multimedia elements; the provision of interactiveness; navigation and systematic composition; quality control and check; copyright and the protection of intellectual property; systematic retention and management.

4. The dissemination of electronic resources:

Uploading on the web sites; electronic library platforms; mobile applications; the dissemination as open resources.

It is important to pay attention to the directions above in the creation and management of electronic resources. A planned approach, meeting the needs of the users, and paying attention to quality and safety are important factors in improving the effectiveness of education.

The system of monitoring and assessing the digital learning process plays an important role in improving the effectiveness of education. Below we will review the main principles and approaches in improving this system.

The main goal of digital monitoring and grading systems is to assess student progress accurately and fairly. For this, the following tasks must be established.

Monitoring the educational process in real-time allows one to observe student activities consistently and provide them with instant assistance when needed.

The automation of the grading system allows the assessment of student knowledge and skills automatically and saves time and energy.

Data analysis – the collection and analysis of digital information to improve the effectiveness of the learning process.

Robust technological infrastructure is required to develop a high-quality monitoring and grading system. Modern LMS platforms in the management of educational processes, the implementation of appropriate platforms for the analysis of information obtained during the educational processes, and the development of mobile applications that fit student and teachers' needs play special roles in realizing this.

The management model of digitalizing educational processes includes the integration of administrative tasks and teaching with digital technology and devices. This model aims to improve the general effectiveness of education institutions through the use of technology for simplifying processes and providing innovative education experiences. This serves to improve collaboration among teachers, the automation of administrative tasks, individualized education, and the use of digital platforms for distance education. The model also includes making informed decisions and developing digital skills consistently among teachers. Generally, The management model of digitalizing educational processes attempts to use technology to improve quality and outcomes in education.

The fundamental model produces several research proposals. This can be seen as a new method of objective improvement of digital benefits in higher education. The model also identifies the main logic of the research that is being proposed. Therefore, the fundamental model offers a new perspective on the phenomenon of creating digital benefits in higher education.

The development of the higher education model in the digitalization of educational processes significantly helps transform strategic management practices of higher education institutions by providing them with empirical concepts regarding the necessity of conveniences in changing circumstances, the ways of identifying such changes, and their relations to modern education. [3, 30]. Also, it stresses the importance of using empiric models as a system of supporting decisions on the formation, reinforcement, and retention of student experience.

The management model of digitalizing educational processes is an important part of digitalization in the field of education. These models are assistive tools for higher education institutions, that are committed to the use of information in education processes and are based on data analysis.

These models are used to work with student data acquired from educational processes, to forecast the outcomes of learning, to identify student weaknesses, to review potential directions, and several other tasks.

The management model of digitalizing educational processes is created using diverse algorithms and technologies.

1. Data analysis analyzes information using automated methods to control, analyze, and study student information. This allows students to develop study plans according to their personal

development pathways. Studies in the digital environment allow data collection and analysis to improve learning processes in the future. Analysis is not only a tool of management in broader education systems but also, is useful for teachers who work with several groups simultaneously.[4, 242].

Most teachers are interested in using information communication technologies during the teaching process. They know that it is necessary for them not only to have modern devices and software, electronic tools of education and teaching, but also, to continuously learn how to use electronic resources during the teaching process. Modern teachers should not only have a fundamental knowledge of their own specialty but also, should be able to transmit this knowledge to their students and know new avenues of digitalization in educational processes. For this they should have good education analytics.

Education analytics is a concept based on the use of information obtained from a virtual environment in education. It gathers student information via artificial intelligence and other tools and analyzes the effectiveness of education more consistently. Study analytics tools collect, analyze, and disseminate data created in a virtual environment, such as tests (correct and incorrect answers), the number of visits to content, the time spent on the website, and visits to additional content videos [5, 991]. It transforms the data into meaningful information that helps identify individual and collective works to improve educational processes. This aims to analyze effectiveness according to activities done by a higher education institution and create a database that helps the management make decisions.

This analytics model changes the relationship between educational institutions and offers more effective ways to optimize results and digitalize educational processes.

2. Forecast of results helps to predict student outcomes in educational processes. The ability of these models helps to approximate how much new knowledge students have and how far they can improve their results.

The analysis and prediction of student activities based on the forecast of results have already become an important component of the modern education system. As a result of increasing the amount of data on student demography, study history, and other such factors, education institutions are using advanced analysis to have meaningful information on student activities and forecast future results. This approach allows teachers to identify directions needed to develop, personalize the learning experience, and provide students with the necessary assistance. Besides that, the analysis and forecast of student activities help the administrative body of educational institutions in decision-making processes and helps them distribute resources more effectively [6, 205].

3. Individualization helps to identify personalized learning pathways for each student and to compose individual study plans for students. This helps identify the demands of every student and adapt educational processes accordingly.

Any education has the function of self-study in its final stage and it demones a completely individual process. Individualization is the strategic objective of educational processes. Individualization is a necessary factor in forming individuality. The main condition of individualizing education is to study student characteristics: preparedness, skills, talents, cognitive abilities, and others. The level of development of general skills and competencies is relevant for future labor outcomes [7, 35]. According to the professor of Estonia's pedagogical scientific research institute, Doctor of Science in Pedagogy, Inge Unt the main form of individualizing education in modern conditions is the activity of students at educational institutions and at home individually [8, 208].

4. Data on problem and issues helps to identify and solve problems in educational processes. These models help to identify and prevent the methods of student progress and weaknesses. In this education, diagnostics plays a special role.

Education diagnostics is the process of identifying the outcomes of educational activities of teachers and students to identify, analyze, assess, and improve learning[9, 110]. By this there is an opportunity to identify student progress, preparation, level of education, and ability to study, taking individual characteristics into account. Education diagnostics is the difference between learning outcomes and learning abilities. The objective of didactic diagnostics is to analyze, assess and identify the effectiveness of educational processes in time.

5. The improvement of the management of the education system helps to automate the repetitive processes in the education system, to integrate the data with educational processes and to optimize the management processes. This helps make education processes more effective.

The automation of processes is a powerful tool that helps education institutions to manage their organization, to boost the efficiency and to achieve good results. Registration process is one of the important parts of automating processes in education. Inserting data, monitoring the activities of personnel, and communicating with students are repetitive processes that can be more effectively managed with the help of automation.

Conclusion. It is worth mentioning that the effectiveness of the management model of digitalizing educational processes depends on diverse factors such as the quality of digital infrastructure, the availability of resources, the competence of teachers, and the ability of students to use technology. To increase the maximal benefits of digitalization in education, it is important to look at and solve all these features.

In conclusion, the model of managing higher education institutions through digitalizing educational processes gives the following advantages:

1. Providing adaptable learning trajectories taking knowledge, skills and interests of every student allows one to conduct diagnostic tests easily and assess fairly.

2. By using multimedia materials, distance laboratories, and simulators and increasing students' digital competencies, the quality of education can be improved.

3. Organizing educational processes in the distance, online formats, using different digital tools and the opportunities of instant management tools increases the effectiveness of educational processes.

4. By decreasing the need for the development of a new material-technical base, saving expenses, and by the goal-oriented use of information communication technologies, resources can be managed more effectively.

5. By monitoring educational process online, assessing teacher and student activity honestly, collecting and retaining data with digital tools, transparency and accountability can be improved.

Based on such advantages the model of managing educational processes through digitalization creates convenient conditions for the implementation of the innovative methods of managing educational processes, for improving the quality and effectiveness of education and for widening the opportunities of distance education.

REFERENCES:

1. Штеймарк О. В. Повышение качества знаний студентов педагогического вуза средствами цифровых образовательных ресурсов //Штеймарк ОВ-М. – 2011.

2. Козырева О. А. Педагогическое моделирование в профессионалной деятелности учителя и научно-педагогического работника //Вестник Мининского университета. – 2020. – Т. 8. – №. 2 (31). – С. 1

3. Казаева Е. А., Глухенькая Н. М., Каленова А. Г. Цифровизация учебного процесса в вузе: анализ динамики отношения студентов к различным формам проведения учебных занятий

//Управление персоналом и интеллектуальными ресурсами в России. – 2022. – Т. 11. – №. 2. – С. 30-34.

4. Шередекина О. А., Михайлова О. Ю., Пятницкий А. Н. Особенности цифровизации образования: направления, возможности //Региональная информатика и информационная безопасность. – 2021. – С. 242-244.

5. Wilson A. et al. Learning analytics: Challenges and limitations //Teaching in Higher Education. – 2017. – Т. 22. – №. 8. – С. 991-1007.

6. Khan A., Ghosh S. K. Student performance analysis and prediction in classroom learning: A review of educational data mining studies //Education and information technologies. – 2021. – Т. 26. – №. 1. – С. 205-240.

7. Сазонов Б. А. Организация образовательного процесса: возможности индивидуализации обучения //Высшее образование в России. – 2020. – №. 6. – С. 35-50.

8. Ваганова О. И. и др. Технология индивидуализации обучения //Балтийский гуманитарный журнал. – 2020. – Т. 9. – №. 2 (31). – С. 208-211.

9. Шульга Е. В., Шульга В. И. Отношение студентов к учебе: основные причины успеваемости и неуспеваемости //Вестник Омского государственного педагогического университета. Гуманитарные исследования. – 2017. – №. 1 (14). – С. 110-114.