

MODERNIZATION OF THE INFORMATION AND EDUCATIONAL ENVIRONMENT OF HIGHER EDUCATION: A PRACTICE-ORIENTED APPROACH

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Abstract: The accessibility of higher education and the implementation of employment today is the most relevant. One of the ways to change the current situation is to reform the higher education system based on the modernization of the educational programs of universities by introducing unique, innovative technologies of practice-oriented learning into them. Such education is aimed at the socialization of students in society and their integration into the environment of future professional activities.

The needs of the modern information society make it necessary to modernize domestic education. Using the information and educational environment in the educational process contributes to solving urgent problems facing educational institutions and is the basis for creating a qualitatively new education system. The article considers the theoretical foundations for creating and using an educational institution's information and educational environment.

Keywords: Higher education, Information and educational environment, Modernized educational programs, Practice-oriented education, State educational standard.

1 Introduction

Incomparably more than at any time in the past, higher education now determines the future of every country. But, at the same time, differences in its level and scale in the modern world can cause a real gulf between the advanced dynamic and the archaic isolated economy – new challenges for Higher Education and the Head of Sector in the Education Department of the World Bank [8].

Indeed, higher education plays a crucial role in a modern economy based on the creation, consumption, assimilation, and transfer of knowledge. Any country's scientific and strategic potential depends on the level and development of higher education.

The use of modern information and communication technologies in education opens up new opportunities for the development of educational institutions: the established methods and forms of training and education are changing, and qualitatively further information and educational environment is emerging through the modernization of the traditional educational environment. Thus, the creation of an information and educational environment is the most critical priority in the transition from education to work in the information space [16].

Informatization is one of the main directions of the development of education. In accordance with the concept of informatization, the use of information and communication technologies is the basis for creating a unified information environment that meets advanced education requirements. The creation of an information and educational environment of an educational institution is a priority task of informatization and modernization as part of improving the quality of general education. On the one hand, this environment is a means of implementing the state educational standard. On the other hand, it should provide information and methodological conditions for the implementation of the educational program [10]. Such an environment becomes the basis for creating a new education system that will allow all students to receive a complete

education, regardless of social status, place of residence, and health status.

2 Materials and Methods

The information and communication revolution and the emergence of the knowledge economy have led to the fact that support for higher education has come to the fore at the center of efforts of the World Bank and other global institutions. But, of course, education development is a task not only for international organizations but also for each country separately, which is responsible for the quality of its educational policy and the competitiveness of graduates in the international labor market. The global goals facing higher education determine the range of problems that it is recognized to solve. Still, without the decisive support of the state, it is not realistic to achieve any significant results.

Governments are responsible for creating an enabling environment that encourages higher education institutions to innovate more and be more responsive to the needs of a globally competitive knowledge-based economy and the changing demands of labor markets that require human intellectual capital. According to representatives of the World Bank, in the conditions of intense competition in the global economy, states that do not develop educational policies in the field of higher education are in danger of marginalization [19].

The problem raised by the World Bank is hugely relevant for the state as well. This is what experts say with concern, convinced that the inadequacy of general education and university training leads to a discrepancy between graduates and the requirements of the global labor market.

But the problem becomes much more severe and more complicated when it comes, for example, to students with disabilities, of which only a disappearing small part has completed higher education. But even the presence of a diploma of higher education for an average student without health restrictions is not a guarantee of the opportunity to get a job in the specialty received at the university.

Meanwhile, being the most critical factor in human socialization, education is of great importance. It provides an opportunity to engage in normal work activities, to be useful, active, and socially significant citizens of their state, and to ensure their well-being, continuous intellectual development, and spiritual and creative growth. In other words, education is a particular social resource of paramount importance and purposefully acting to reduce economic dependence.

One of the ways to change the current situation is to reform the higher education system based on the introduction of innovative technologies and the latest pedagogical developments. The latter includes the modernization of educational programs based on the introduction of information and communication technologies into the practice of teaching students in close connection with practice-oriented forms of education that contribute to the realization of the primary goal of Higher School – the preparation of a competitive university graduate.

Modernized educational programs are standard educational programs that can be modified in terms of terms, forms, and technologies of education. In our case, the modernization will be carried out through the introduction of practice-oriented technologies in the educational process [9].

The choice of practice-oriented learning technologies as the main tool for the modernization of higher education is due, first of all, to the fact that higher education today provides students with a traditional huge theoretical set of knowledge, which only expands their horizons and makes them erudite theorists who

know how to work on specialties in theory, but, unfortunately, do not know how to do it in practice.

Practice-oriented learning acts as such an educational practice. It is with its implementation that there is an exceptional opportunity to do away with the disadvantages of the current education system, the inequality of their educational opportunities, significantly increase the number of graduates, make them competitive, and help them realize their right to a full-fledged labor activity after training, regardless of the circumstances.

Practice-oriented education involves the study of fundamental disciplines traditional for education in combination with applied disciplines of a technological or social orientation.

3 Results and Discussion

The information and educational environment are, on the one hand, a complex of information and educational resources and information and telecommunications tools. But on the other hand, it is an open pedagogical system, and all participants of which have ICT competence.

To meet the requirements of the state educational standard, the information and educational environment must be created in each institution as an element that provides information and methodological conditions for the implementation of the educational program. Educational organizations of various types implement appropriate programs. Therefore, it seems possible to consider not the information and educational environment in general but to detail the information and educational environment depending on the type of educational organization. At the same time, the components of each educational institution's information and educational environment may differ in structure and be grouped depending on the area of their application [4].

An analysis of the activities of educational institutions that already use the information and educational environment shows that it allows you to implement various functions: teaching, developing, educational, communicative, and managerial. The learning function is to form the skills of design and research activities and universal learning activities. The developing function involves the social activities of the subjects of the educational organization, participation in sports events and sections, in military-patriotic movements, holding various actions, etc. [2].

The communicative function includes the interaction of all participants in the educational process using the information and educational environment. Finally, the managerial function provides not only for the quality control of education and the administration of an educational institution based on the information and educational environment but also for the interaction of the educational organization with governing bodies and with other organizations in the social sphere using the information and educational environment.

The modern information and educational environment make it possible to provide the educational process at the methodological and resource level; the ability to track the educational process with automated monitoring of results; remote interaction of subjects of educational relations.

The information and educational environment contains and is constantly filled with information of various types and depending on the type of educational institution. This can be information about employees and students, class schedules, curricula and work programs, theoretical and practical material, and work reports. The information and educational environment is a powerful tool that improves the quality of education, making it possible to differentiate learning and ensure educational material visibility. All materials posted on the website of an educational organization, in electronic libraries, and in other resources are available to all subjects of educational relations [11]. This allows you to implement one of the basic principles of

creating an information and educational environment – openness.

Within the information and educational environment framework, it is possible to use various forms of the educational process. Currently, the most popular are online courses, forums, teacher consultations, virtual conferences, and round tables, file sharing. However, the use of such forms of interaction requires a particular ICT competence of all participants in the educational process [17].

The possibilities of the information and educational environment can, in most cases, be implemented at three levels. First, the reproductive level of the information and the educational environment involves the use of ICT tools (multimedia presentations, video, and audio materials, a personal computer, and a virtual tour) in various classes. At this level of use of the information and educational environment, the interaction of participants in the educational process practically does not occur.

The productive level includes the incomplete interaction of the subjects of educational relations in the information and educational environment through the educational and methodological materials presented in personal accounts, theoretical material, and practical tasks, useful resources [5].

The creative level involves continuous online and offline interaction of all participants in the educational process through the educational portal. Thus, the organization of practical information and educational exchange within the information space of an educational institution is possible in the presence of information and an educational environment.

The information and educational environment used in educational institutions can be subdivided by structure. For example, it can be uniform for a country or region, used in a separate educational organization, or be specialized for a particular subject or educational and methodological complex.

3.1 Basic Requirements for Higher Education

The main educational program of a higher educational institution is developed and approved by the higher educational institution independently based on the state educational standard of higher education and the recommended exemplary basic educational program (in the relevant direction, level, and profile of training), taking into account the needs of the regional labor market, traditions and achievements of the scientific and pedagogical school specific university [1].

These objects of the socio-educational structure are united by belonging to the category of "social norm" in relation to higher education as a social system or social institution. They form an interconnected set of complex social norms of different levels of hierarchy (in the organization of higher education) and type in relation to a certain area of training (subject area of higher education), skill level, and profile.

At the same time, the state educational standard of higher education contains the basic requirements for the main educational program of higher education, which must be taken into account during modernization. These are the requirements concerning:

- The results of mastering the primary educational program of higher education (the results of higher education);
- Structure of the main educational program of higher education (educational process);
- Conditions for the implementation of the main educational program of higher education (the educational environment and the university education system as a whole) [18].

Let us consider these requirements in more detail. Requirements for the results of mastering the basic educational programs are a description of the totality of competencies of a graduate of an educational institution, determined by personal, family, social, and state needs. These requirements are invariant and

mandatory. They can be supplemented, within the framework of the general resource of study time, by the requirements of the subjects of educational institutions to more fully reflect the needs of subjects of educational activity, including ethnocultural, the specifics of the educational program of the educational institution, the specifics of the contingent of students. In our case, changes will be made to the main educational program taking into account the special educational needs of individuals.

The requirements for the results of mastering the main programs characterize the planned results, the possibility of achieving which must be guaranteed by all institutions implementing higher education programs, regardless of their type, location, and legal form. The planned learning outcomes are an obligatory component of the curriculum of disciplines, as well as rehabilitation and socialization programs that are necessary for students [20].

In addition, the requirements for the results of mastering the main educational programs set the criteria for assessing personal, meta-subject, and subject results.

The personal results of students include:

- The value orientations of university graduates;
- Reflecting on their individual and personal positions and motives for educational activities;
- Social feelings;
- Personal qualities.

The meta-subject results of students usually include universal methods of activity mastered by students in the study of one, several, or all subjects, applicable both within the framework of the educational process and in further practical activities.

Requirements for the results of education, which have a universal, meta-subject value, include:

- The ability to organize one's activities, determine its goals and objectives, choose the means of achieving the goal and apply them in practice, interact in a group to achieve common goals, and evaluate the results achieved;
- Key competencies that are of universal importance for various types of activities (generalized methods for solving practical problems; research, communication, and information skills), the ability to work with different informational sources;
- The ability to navigate the situation in the labor market, taking into account their professional interests and capabilities;
- Humanistic and democratic value orientations, willingness to follow the ethical standards of behavior in life;
- The ability to evaluate actions (one's own and other people's) from the standpoint of social norms [13].

The objective results include the knowledge, skills, competencies, experience of creative activity acquired by students while studying the subject, and value attitudes specific to the area of knowledge being studied.

In turn, the requirements for the results of education, reflecting subject knowledge and skills, include:

- Knowledge about the essence and features of objects and phenomena of reality in accordance with the content of a particular academic subject;
- Understanding of causal, functional, and other relationships and interdependencies of objects and their objective significance;
- Possession of the fundamental conceptual apparatus necessary for further education;
- The ability and ability to navigate the world of social, intellectual, and moral values based on acquired skills and knowledge;
- Application of the acquired skills and knowledge to solve various practical situations.

The requirements for the results of education that characterize the intellectual sphere of a person reflect intellectual abilities and mental operations (the ability to think logically, prove, reason, draw conclusions, compare, analyze, etc.).

Requirements for the results of education, characterizing the labor sphere of a person, reflect:

- Knowledge about technologies and the technological side of any work (including training);
- Ideas about the methods of scientific management of labor processes;
- The ability to plan one's work (including training);
- Culture of work at the level of professional skills and abilities of human interaction with various aspects of the surrounding reality;
- Skills of transformative activity;
- Motivation for professional activity [12].

The requirements for the results of education that characterize the communicative sphere of a graduate include:

- Knowledge, abilities, and skills that characterize the language and speech development of the student;
- Ideas about the general theory of communication (including social);
- The use of languages and other communication means fixing, storing, and transmitting the information.

The integrated result of mastering the basic educational programs is the level of competence of the graduate, which is necessary and sufficient to ensure the full development of the student's personality, education throughout life, and professional activity.

The set of requirements for the results of mastering the main educational programs aimed at an individual assessment of the student's educational achievements is the basis for determining the conditions for issuing documents on the corresponding level of education.

The results are subject to evaluation during the individual final certification of graduates within the framework of monitoring the success of mastering the content of individual curricula, including the ability to solve educational and practical problems based on:

- Systems of scientific knowledge and ideas about nature, society, man, signs, and information systems;
- Skills of educational, cognitive, research, practical activities; generalized ways of activity; communication and information skills [3].

The results that are not subject to assessment during the final certification of graduates include:

- The value orientations of the graduate, which reflect his individual and personal positions (religious, aesthetic views, political preferences, etc.);
- Characteristics of social feelings (patriotism, tolerance, humanism, etc.);
- Individual personal achievement.

The assessment of these and other results of educational activities (including maintaining and strengthening the health of students, mastering safe behavior skills, etc.) is carried out in the course of non-personalized monitoring studies. The results are the basis for making managerial decisions when designing regional development programs, programs to support the educational process, and other programs.

The result of educational activity is fixed in the portrait of the graduate:

- Patriot, bearer of the values of civil society;
- Respecting the values of other cultures, confessions, and worldviews, aware of the global problems of today and their role in their solution;

- Motivated to work, knowledge and creativity, learning and self-learning throughout life;
- Sharing the values of a safe and healthy lifestyle;
- Respectful of other people, ready to cooperate with them to achieve a joint result;
- A self-aware person who can make independent decisions and be responsible for them to himself and others [4].

Requirements for the structure of the main educational programs are a system of norms regulating the content and organization of the educational process, ensuring the achievement of the planned educational results. Educational programs are aimed at solving the problems of formation and adaptation of the individual to live in a professional society and at creating the basis for self-development and self-improvement of students in their professional activities.

The main educational program may include the total allowable study time resource within the framework. These additional components reflect the characteristics and interests of the subjects of educational institutions of higher education, taking into account the needs of the individual, society, and the state in higher education.

The goals of education develop and define the requirements of the state educational standard for the results of mastering the main educational programs, fix those results of training, education, and development that are most important at each level of education in terms of personal, moral, social, cognitive, intellectual, communicative, aesthetic, physical, and labor development of students.

The fundamental core of the content captures the essential elements of scientific knowledge, including value-worldview, which are mandatory for study in educational institutions of general education: leading theories, scientific ideas, and categories, methods of scientific knowledge, events, phenomena, etc.

In the fundamental core of the content, universal educational activities of a personal, regulatory, cognitive, and communicative nature are described in a generalized form, the formation of which is carried out in the course of the educational process.

Exemplary programs for individual training courses are developed based on the requirements for the results of mastering the leading educational programs, the fundamental core of education content, and programs for the formation of universal educational activities. In addition, they are the basis for creating work programs for educational institutions.

Exemplary curricula contain:

- An explanatory note that defines the goals of studying the subject, and the content of education, including a list of the material being studied;
- Exemplary thematic planning with the definition of the main types of educational activities of students;
- Planned results of mastering the programs of disciplines;
- Recommendations for equipping the educational process [6].

The conceptual core of the state educational standard of higher education as a standard for a new generation and the leading academic program of higher education that implements it is a competency-based approach to the expected results of higher education. It is integrated with a system-activity approach to designing qualification and educational requirements for university graduates and has been mastered by the domestic higher school and its educational and methodological associations since the late 80s of the twentieth century [15]. It is implemented in the qualification characteristics of university graduates and the first and second generations' state educational standards of higher education.

At the same time, the shift of emphasis from the subject-disciplinary and content side (while maintaining its merits and importance) to the expected results of the educational process in a competency-based format is a manifestation of a significant strengthening of its student-centered orientation as a reflection of the most important global trend in the development of higher education.

The competencies and results of education are considered the primary targets in implementing the state educational standard of higher education, as integrating the principles of the "model" of the graduate. On the one hand, the competency model of a graduate covers the qualification that connects his future activity with the subjects and objects of labor. On the other hand, it reflects interdisciplinary requirements for the result of the educational process [14].

From designing the results of education, expressed in the form of competencies, one should go to designing the volume, level, and content of theoretical and empirical knowledge. It is impossible to separate competencies from the content of education, just as one should not expect that one can ensure the mastery of competencies through the content of education alone. The fact is that only individual academic disciplines or even the content of the entire educational program cannot be "responsible" for the formation of certain competencies.

Competencies are also the result of educational technologies, methods, organizational forms, learning environments, etc. The results of education and competence are established not only at the level of qualification but also at the level of cycles and academic disciplines (modules). When modernizing educational programs, achieving transparency in setting goals is necessary [5].

The latter should be dynamic and adapted to the needs of society, the economy, and the labor market. Evaluation technologies and tools are designed to include indicators that can be measured. In the context of various contexts and their dynamic change, there is a growing understanding that the language of competencies is the most suitable for consultation with stakeholders (social partners).

Competence orientation contributes to the design of a more flexible structure of academic disciplines and ensures comparability of qualification levels in the national and international aspects. This will allow for a constant review of qualifications and the selection of appropriate measures to improve the adequacy of the implemented educational programs. Professional profiles should be clearly defined in the developed competence model of the state academic standard of Higher Education and, at the same time, remain open to changes.

Requirements for the conditions for the implementation of basic educational programs is a system of standards and regulations (personnel, financial, educational and material, material and technical, hygiene, etc.) necessary to ensure the implementation of basic educational programs and achieve the planned educational results.

The integrative result of implementing the requirements should be creating a comfortable, student- and teacher-friendly developing educational environment that is adequate for achieving personal, social, cognitive (intellectual), communicative, physical, and professional development of students.

The competence of the subjects of the state includes the establishment of educational institutions that are under the jurisdiction of the subject of the state, additional requirements for educational institutions in terms of building norms and rules, sanitary standards, health protection of students, equipment of the educational process and equipment of educational premises.

Staffing implies staffing with personnel with a basic education corresponding to the profile of the discipline being taught and the necessary qualifications, capable of innovative professional

activities, possessing the necessary methodological culture, and forming readiness for a continuous education process throughout life.

The primary regulatory documents that contain a criteria base that meets the requirements of the state educational standard and determine the requirements for human resources of a higher education institution are:

- Qualification characteristics (requirements) for the positions of employees of educational institutions;
- Regulation on state accreditation of educational institutions and scientific organizations;
- Regulations on the licensing of educational activities for higher education programs;
- Regulations on certification of personnel of educational institutions [7].

Financial and economic support is the formation of expenses for implementing basic educational programs following the state educational standard, ensuring the achievement of the planned results. Logistics is characteristics of the educational infrastructure (including the parameters of the information and educational environment) that comply with the sanitary and epidemiological rules and regulations and building codes and regulations.

Educational and material support – requirements for the completeness and quality of educational and educational visual equipment, taking into account the achievement of goals established by the state educational standard.

The criteria for fulfilling the requirements of educational and material support for the educational process can be:

- Lists of recommended educational literature and digital educational resources;
- Lists of educational equipment for educational institutions;
- Requirements for equipping educational and administrative premises of educational institutions [19].

Information support is providing each subject of the educational process with broad access to educational portals and repositories, information and methodological funds and databases, and network sources of information, according to the content corresponding to the complete list of educational subjects, assuming the availability of methodological aids and recommendations for all types of activities, as well as visual manuals, multimedia, audio, and video materials.

4 Conclusion

Almost every educational development of various interactive institutions has problems associated with technology. Moreover, it significantly impacts the educational process's organization: in all spheres of human activity. Thus, the main driving force behind all modernizations of educational programs of higher education, in our opinion, is the increasing requirements for the level of intellectual and moral development of a person with higher education, for his social and professional readiness necessary for life in today's rapidly changing and more complex world, and the related desire to make adequate changes in the goals, content, and organization of higher education systems. These changes are especially relevant for people for whom high-quality professional education, possession of modern information technologies, and regular updating of professional knowledge are the basis for further professional activity.

The education system is part of the modern information society, the needs of which make it necessary to modernize education. Using the information and educational environment in the educational process contributes to solving urgent problems facing educational institutions. It is the basis for creating a qualitatively new education system.

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