INTEGRATIVE APPROACH IN FORMATION OF COMPETENCIES IN THE EDUCATIONAL PROCESS

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ABSTRACT

The article considers the integrative approach as a methodological strategy for solving educational problems. The models of interdisciplinary integration based on the use of general scientific methods of cognition are analyzed. The need for integration based on the practical and professional orientation in the education of a specialist, which logically follows from the complex, systemic, interdisciplinary nature of professional activity, is being updated. The tendency of intensification of studies considering the problem of integrating competencies is revealed. Taking into account the informatization of society as a factor determining changes in the world and our educational situation and affecting the education system and the production sector, poses the problem of enriching the competence of a bachelor who has mastered the educational program in a specific area of training in the context of integration with informational competence. Such integration of competencies will ensure the solution of professional problems at the modern information level using specialized software products.

Keywords: Integrative approach in education, interdisciplinary integration, competency-based approach, integration of competencies for professional activities, informatization of the professional sphere.

INTRODUCTION

The methodological strategy of the integrative approach orientes the researcher to a holistic union (integration) of homogeneous and heterogeneous components of systems in solving educational problems. An integrative approach to education makes it possible to mitigate the disadvantages of differentiation within the framework of the interdisciplinary division of the content of education on the basis of the choice of some integrative foundation. In particular, interdisciplinary integration has as its goal the synthesis of generalized interdisciplinary structures of a new level of their content and the identification of methods of activity transferred to different disciplinary areas.

Interdisciplinary integration is implemented in different models of its implementation:

- integration of disciplines within the same educational field;
- integration of disciplines within different educational fields: this kind of integration is carried out, for example, in the synthesis of natural sciences and humanitarian disciplines of the curriculum;
- integration based on the dominance of one of the disciplines, when others act as an additional auxiliary tool.

Material and methods. In the context of interdisciplinary integration, students form an integral idea of the studied (researched) object based on the use of general scientific methods of cognition (analysis, synthesis, generalization, abstraction, classification, comparison, induction, deduction, modeling, analogy), which serve as the basis for integration. Note that interdisciplinary integration is based on a synthesis of the content of academic disciplines. Another basis for integration may be the strengthening of the practical or practical-professional

orientation of the educational process in accordance with the level of education. This determines integration in the name of achieving new educational results, expressed in the mastered methods of activity on the basis of gaining experience in solving problems independently.

Modernization of education, the main directions of which are presented in the education model of Uzbekistan, is carried out on the basis of the introduction of a competency-based approach that determines the practice-oriented strategy of vocational education. The need for practical and vocational guidance in the education of a specialist as the basis for integration logically follows from the complex, systemic, interdisciplinary nature of professional activity, which requires an interdisciplinary system analysis and the construction of a holistic model for its implementation [2].

Results and discussion. The competency-based approach defines the result of education as "a common integral socio-personal-behavioral phenomenon in the aggregate of motivational-value, cognitive, interactive and empirical components" [6].
The context of the new requirements for a person in these conditions determines the need for the formation of special personality traits in education:
- the ability to solve the problems of modern life in the political, environmental, intercultural spheres;
- the ability to solve the problems of the axiological sphere through orientation in the world of spiritual values, taking into account the diversity of social, cultural, ethnic, religious values and differences, forms of modern culture, as well as means and methods of intercultural communication;
- the ability to perform the necessary social and role functions of a citizen, voter, family member, parent, etc .;
- universal skills in the search and analysis of information;
- the ability to make decisions in cases of a multivariate situation, including in conditions of uncertainty, be responsible for decisions made, work in a team and organize team activities;
- ability to lifelong education, development of cognitive activity.
An analysis of the requirements for the formation of competencies presented in [6] and the above, allows us to conclude that they partially coincide with the requirements of the Council of Europe for "young Europeans":
- political and social competencies that determine a person's ability to take responsibility, participate in group decisions to resolve conflicts non-violently;
- competencies for living in a multicultural society, developing a climate of tolerance, respect for others and the ability to live with people of other cultures, languages and religions;
- competencies related to the possession of oral and written communication in more than one language;
- competencies related to the informatization of society. Mastering information technologies, understanding their capabilities and risks in their application, the ability to make critical judgments regarding information disseminated by mass media and advertising;
- the competence of lifelong education, adapting a person to an accelerating and changing world of engineering and technology, allowing to be successful in the professional and social sphere.
The competencies formed above with full confidence can be attributed to the so-called key (core skills) competencies, which are the necessary basis for a person's success in the field of any activity.

The implementation of the competency-based approach in domestic education, which began with joining the Bologna process, has led to the need to solve a number of problems:

- concretization of the conceptual-categorial apparatus of the new methodology in education;

- disclosure of the content and structure of basic concepts: competence (competence);

- substantiation of organizational and pedagogical conditions that contribute to the formation and development of competencies of students in the educational process of the university;

- diagnosis of the level of competency formation and monitoring of its dynamics.

Systematization and generalization of research in solving these problems is given [4].

We express our attitude to the above problems.

Regarding the concretization of the basic categories for a competency-based approach, taking into account the opinions of scientists, including consideration of competence / competency as synonyms, competence as a set of competencies, competence as a component of competency, we agree with the position of scientists who distinguish competence and competence in contrasting the general - personal [7].

The essence of competence is expressed in its activity nature (assigned competence), which is defined as the dynamic personal characteristic of the subject of productive activity in a certain field, while competence sets forth general requirements that are imposed on a person to perform a certain activity. It seems reasonable point of view E.The. Bryzgalova to disclose the essence of competence and its structure through components: knowledge; methodology for applying this knowledge and knowledge of this methodology; practical skill.

Consideration of the structure of competence as a dynamic activity characteristic allows us to determine it with the inclusion of characteristics that are natural for the activity: motivational-value, cognitive, activity, reflective.

The formation and development of students' competence in the educational process of a university is considered by researchers through the creation of special pedagogical conditions that specify the components of the pedagogical system. These conditions relate to the deepening, expansion, enrichment of the content of education, the selection of adequate pedagogical technologies that involve students in activities corresponding to the subject-subject interaction of the participants in the educational process. A number of researchers, relying on the length of the process of competency formation, identify stages that are substantively different from each other in terms of the impact on the subject of educational activity, its motivational-value, operational-activity, and reflective-evaluative spheres.

Diagnosing the levels of formation of student competencies is a complex problem, the formulation of which contains a contradiction, especially with regard to professional competence. Indeed, the competence of the future bachelor formed in education will be manifested in his professional activity outside the university. Therefore, when diagnosing the formation of competency, judges are often judged by the dynamics of changes in the levels of its components, less often by integral indicators, using a valid psychometric apparatus.

Despite the fact that at the current level of development of the competency-based approach in pedagogical science, studies of the above problems continue, it can be argued that the competency-based approach has now passed from the stage of formation to the stage of intensive development of various aspects in its implementation.

L.S. Petrova, considering the method of teaching the equations of mathematical physics to future bachelors in thermal power engineering, identifies mathematical subcompetencies that are integrative in themselves (information technology, structural model, computational and experimental). It is logical that these competencies are distinguished from general cultural and professional competences on the basis of the competency model of the graduate, synthesizing in his view the educational results of his preparation [5].

The research of E.A. Kagakina. The author relies on an understanding of the cluster of general cultural and professional competencies formed in the process of mastering a specific discipline [1].

It is important to note two circumstances. Firstly, any competence, as a personal characteristic of a person, is formed in the process of a certain activity, including in the subject area. This is a long process of change (increment) of a person's personal quality. However, the potential of one particular discipline is not enough for the final formation of competence; it continues to develop during the entire period of study in other disciplines of the curriculum. Secondly, the content of each discipline of the curriculum creates the conditions for the formation of several competencies, a whole cluster of competencies.

We agree with the opinion of E.A. Kagakina in the separation of the role of competencies included in the cluster, and the allocation in it of the leading, cluster-forming competence.

It is natural to consider improving the quality of professional education taking into account factors that determine changes in the world and Russian educational situation and affect the education system, forming new requirements and requirements in the training of a modern specialist. In the monograph [3], based on the report "Foresight" Education - 2030 "" of the Agency for Strategic Initiatives, trends are presented that regulate the development of modern education:
- globalization of education and science;
- orientation of universities to the demands of the economy and society of the region;
- practical orientation of education;
- the variability of the world, engineering and technology, defining a situation of uncertainty and unpredictability;
- digitalization of educational and scientific content.
Globalization processes in the world are designing a new model of the universe that expands human capabilities in the educational, professional and social spheres.

Informatization and information technologies create new conditions for transnational education, contributing, on the one hand, to increasing the mobility of students and teachers in the virtual space (a variety of educational materials, flexible study modes, the choice of higher education providers, etc.). On the other hand, this poses the problem of updating domestic education with a focus on international requirements, the multidisciplinary nature of educational programs, and a high level of informational competence of students.

CONCLUSIONS

In the framework of this study, it is important to informatize all aspects of the life of society, naturally, including the educational and industrial sectors. Digital content of the professional sphere, total computerization allow us not only to automate routine intellectual operations in production, but also to improve the quality of solving professional problems at the modern

software and information level. This raises the problem of enriching the competence of a bachelor who has mastered the educational program of a metallurgist, economist, mathematician, etc., in the context of solving professional problems at the modern information level using specialized software products. Practice shows that the preparation of a bachelor in the use of information technology and software, obtained at this stage of education, is insufficient for the tasks set above. In particular, computer science for bachelors - future metallurgists is focused on obtaining basic computer skills and skills needed by engineering students. The course discusses the features of working with electronic documentation and computer mathematics systems. Students learn the basics of working with cloud technologies, including gaining teamwork skills using the example of creating a joint presentation. The issues of information protection and some aspects of the work and search for information on the global Internet are considered.

Given that the informational content of professional activity requires additional specialist training, a number of universities have embarked on enriching the competencies of the bachelor, obtained at the stage of general higher education in the direction of training, with additional competence in the field of applied informatics.

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