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## THE IMPORTANCE OF AN INTERDISCIPLINARY INTEGRATION IN THE FORMATION OF THE PROFESSIONAL COMPETENCE OF STUDENTS

*In given article the concept of professional competence of students and ways of its formation with use of interdisciplinary integration is considered.*

**Keywords:** professional competence, interdisciplinary integration, information technology, interdisciplinary problems.

Strategic directions in the education system need to search for new organizational forms and methods of training and education. In connection with this arises the necessity to prepare students to innovate, to familiarize them with the advanced technology of the educational process. "The task of modern education - to form the identity of the future specialist, ready for a successful career, updating professional skills, able to project a professional and personal growth" [1].

The relevance of the formation of professional competence is confirmed in the "Concept of Education Development of Kazakhstan till 2015", which defines an "education as a national priority and provides the basis for the development of state educational policy of the Republic of Kazakhstan for a long time ..." "The main purpose of education is not a simple combination of knowledge, skills, and based on their personal, social and professional competence - the ability to independently obtain, analyze and leverage information, the ability to efficiently and effectively live and work in a rapidly changing world" [2].

In scientific studies the concept of "competence" includes a complex, capacious content that integrates professional, social, educational, social, psychological, legal and other characteristics, and refers to:

- As a special ability required to perform a particular action in a particular subject area, including the highly specialized knowledge, skills, ways of thinking and understanding of the responsibility for their actions [3];

- As a measure of inclusion of human activity, while knowledge is regarded not as a collection of information, but as a means of mental transformation of the situation [4];

- A set of interrelated personality traits (knowledge, skills, ways of life), asked for a specific range of objects and processes necessary to qualitatively and productively operate in relation to them [5].

The dynamism of the Information Society stipulates that the professional activities of today's young professionals will require continuing education, a willingness to constantly improve their professional competence.

In modern conditions, even during training of future specialists are several generations of hardware and software, new information technology is changing and updated content as computer science. Therefore, in the process of training the student should not only form the subject knowledge and skills, but also promote the development of those personal qualities of the graduates, which would allow them in the future to meet new professional challenges.

Practical implementation of competence-based approach highlights the challenge of developing for each discipline, methodical system of higher education that is consistent with the pedagogical model of the formation of professional competence of graduates of higher education. This model, called by A.A. Verbitsky and V.F. Tenishcheva integrative-content, have now been proposed and justified [6].

Conceptual framework of this model forms the context learning, bringing together educational and informative and the student's future professional activity [7, 8]. Binding component is also interdisciplinary integration - a targeted strengthening of interdisciplinary communication, while maintaining the integrity of the theoretical and practical disciplines.

A special place in the integrative-content model is the formation of subject and interdisciplinary competences [9], which is due to its effectiveness. However, this involves solving a series of didactic problems, including those associated with multi-disciplinary integration. This is due to the fact that many aspects of interdisciplinary integration has not yet been studied.

The role of these connections, as is known, fixed general didactic principle of interdisciplinary communication in the training, which involves the study of coherent theories, laws, concepts, methods, knowledge and methodological principles that are common to related disciplines, as well as the formation of their common activities and systems of relations [10].

The teacher can enhance communication between disciplines, deliberately using, for example, interdisciplinary teaching and cognitive tasks. Interdisciplinary integration, presented in a form that enhances the educational space, creates a kind of multi-disciplinary virtual learning laboratory in which a student repeatedly applying the knowledge in each discipline in the new environment, outside the discipline, and develops the ability to apply knowledge in professional work.

Consider a situation in which the graduate will demonstrate how to solve some problem of professional activity may apply the knowledge learned in one of the disciplines. This process is carried out sequentially:

- The first stage of building a graduate of the disciplinary model of the problem by writing the condition in terms of the discipline. In this connection it is aware of the problem with this discipline and uses the knowledge associated with it;

- The second phase of the resulting model is investigated with the assistance of other knowledge of this discipline, which results in new knowledge relating to it;

- In the third stage graduate interprets this knowledge to give a solution of the new knowledge from the professional field.

You can also download that the application of knowledge in the discipline in the study subjects A: its description is obtained by considering if, instead of talking about professional discipline and a call model of the multi-disciplinary. It was during the formation of an interdisciplinary model of student understands the relationship between subjects A and B. If the knowledge is complex, i.e. for two or more disciplines, then it usually occurs sequentially, with the knowledge of each of the disciplines are also applied in three stages, as discussed above. And that is why it is important that the student has learned to perform each of the stages and consistently move from one to another.

Using the learning process of knowledge from different disciplines can be integrated connection between the complexes of specially designed educational and cross-disciplinary cognitive tasks designed to study, for example, mathematical analysis, physics, programming languages, algorithmic, electrical engineering and other disciplines.

Methodological basis for such training can be a complex method of computer mathematical modeling - an important method of scientific knowledge, which, representing knowledge using mathematical formulas, creating favorable conditions for free movement of knowledge from one discipline to another.

Interdisciplinary integration, however, faced with the problem of identifying

and evaluating the interdisciplinary connections between disciplines. It is due to the fact that the content of each discipline is particularly dependent on many factors: the specificity of the university, faculty, department, specialty and level of training of students and professional preferences of the teacher.

University student takes interdisciplinary communication system based on personal emotional-valuable attitude to discipline. If interdisciplinary communication seems to him important, for example, from the perspective of a professional future, he will learn and remember them. If he does not see their cognitive or professional value, the result of their assimilation, figuratively speaking, will be modest. Therefore, we can talk about the subjective component of interdisciplinary communication, implemented in the education, relationships, "after learning", and defined by the characteristics of their perception of the teacher and students. Also key is to form students' understanding of competence-based value of interdisciplinary links.

To carry out an objective assessment of the level of interdisciplinary bonds sold in the training, we can reproduce them in the minds of students as the ability to apply knowledge. This estimate can be obtained based on cross-cutting problems mentioned above. The successful solution of these problems indicates that the experience gained interdisciplinary application of knowledge, and as a consequence - possession of interdisciplinary connections. Evaluating the results of cross-cutting objectives, the teacher can increase or decrease the connection, adjusting content and teaching methods courses.

Based on the foregoing, we conclude that the interdisciplinary integration can

enhance the use of knowledge acquired in the study of academic disciplines. The students simultaneously learn to apply their knowledge in their future professional work. Experience of using such a method of teaching programming students - future professionals in the field of information technology with the use of interdisciplinary integration of systems based on interdisciplinary problems, shows that the students formed to further develop awareness - communication - technological competence.

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