

FORMATION OF BASIC KNOWLEDGE AND SKILLS OF STUDENTS IN THE IMPLEMENTATION OF INTERDISCIPLINARY CONNECTIONS IN SECONDARY SECONDARY SCHOOLS

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ANNOTATION

This article describes the basics of the formation of basic knowledge and skills of graduates of pedagogical higher education institutions in the implementation of interdisciplinary links in secondary schools, as well as the content and essence of interdisciplinary links in the study of natural sciences at school.

Keywords: competence, scientific-dialectical, didactic-methodical, natural-mathematical cycle, integration, internship, optimization, carbohydrates, fats, proteins, nucleic acids, professionogram

The process of radical restructuring of higher education in our Republic provides for an increase in the quality of professional training of teachers. A large role in this is played by psychological and pedagogical disciplines that contribute to the formation of professional thinking in students, arm them with knowledge of education and upbringing, skills and skills of optimal organization of the educational and educational process in secondary general education schools.

Further improvement of Psycho-pedagogical and methodological training of teachers in a Pedagogical University requires the use of forms, methods and means of teaching that form a high level of competence in students, arm it with advanced pedagogical theory and the skills of reproducing it in practical activities. One such tool that forms a scientific-dialectical worldview in students and, through them, helps to develop and raise the educational activities of schoolchildren in all respects is the preparation of students for the implementation of interdisciplinary connections in high school.

The need to carry out interdisciplinary connections in the preparation of students is beyond doubt. Their consistent and systematic implementation significantly increases the effectiveness of the educational and educational process, forms a dialectical method of thinking in students, prepares them for future professional activities. At the same time, interdisciplinary connections are an integral didactic – methodological condition for the development of interest in knowing the foundations of Science in them, including the foundations of the natural-mathematical cycle Sciences.

An important condition for the implementation of interdisciplinary linknpi is the special training of teachers of natural – mathematical cycle Sciences. It can be carried out in various forms: problem courses, special courses, special seminars, internships, etc. We will dwell only on special courses developed and tested in the practice of the faculties of mathematics and Natural Sciences of the Kokand State Pedagogical Institute and Tashkent State Pedagogical University as well as Andijan State University.

A general analysis of textbooks makes it possible to highlight the following: in them, many facts and concepts are stated several times in different disciplines, while their repeated statement does not add so much to the knowledge of students. In addition, often the only concept is interpreted differently by different authors, thereby making it difficult for them to assimilate. Most often, textbooks use terms that are little known to students, they have few assignments with interdisciplinary connections. Many authors hardly mention that some phenomena and concepts are studied in closely related sciences, not to mention the fact that these concepts are studied in detail in the study of another science.

The analysis of the current programs of the natural-mathematical cycle Sciences today made it possible to draw conclusions that there is not enough attention to interdisciplinary connections. Only in the formation of biological concepts in the programs of general biology for grades 10-11, for the 9th grade of "Man" mention is made of interdisciplinary connections, indicating the physical and chemical concepts, laws and theories that are considered fundamental. There are no such departments in the programs of physics and chemistry, geography and mathematics, and the teachers themselves will have to establish the necessary interdisciplinary connections. And this is a much more difficult task-to coordinate the materials of closely related disciplines to the extent that it provides a single interpretation of concepts in all disciplines.

It was possible to establish the interdisciplinary connections of physics, chemistry and biology much more efficiently. For example, when passing the topic "levels of externalization of living matter" in section I of the program of the general biology course (grades 10-11), the teacher draws the attention of students to the connection of biology with other disciplines, without knowing which it will be impossible to understand the essence of life, to show the laws of nature, the vastness of

Unfortunately, the programs of the natural-mathematical cycle disciplines are not agreed upon by the time of study, and the teacher is forced to formulate most biological concepts without relying on physics or chemistry. For example, when studying the chemical composition of a cell in a chemistry course, carbohydrates, fats, proteins and nucleic acids have not yet been studied in depth to the extent required by the program. Therefore, the teacher will have to form the chemical concepts necessary for the assimilation of biological material in an extremely limited time.

The tasks to be set are as follows:

Section I "theoretical-methodological foundations": to show the essence of interdisciplinary connections, their importance in optimizing the educational and cognitive process and their role in the formation of students' worldview. It will also look at the types of interdisciplinary connections, prospects for the development and development of integrative interconnections of natural scientific disciplines.

Section II "methodological-didactic aspects" (14 C): practical qualifications of teachers for the implementation of interdisciplinary connections are formed at seminars by modeling various forms of interdisciplinary classes and extracurricular activities, developing exercises, verification-control work, issues of interdisciplinary content. The methodology for the implementation of interdisciplinary connections in grades VII-XI of basic and secondary general education schools will be considered in detail. Much attention is paid to the methodology for organizing educational and cognitive activities of students on the implementation of interdisciplinary connections.

Section III "substantive foundations" -listeners master the methodology for the formation of general scientific concepts, the study of laws and theories common to the sciences of the natural-scientific cycle.

Chapter IV” fundamentals of activity ” – mastering the methodology for the formation of interdisciplinary and general educational qualifications (independent work with educational literature, practical and experimental observation skills, solving issues of interdisciplinary content, as well as organizational skills and self-control skills).

Sections V and VI “Aso-si directions of activity of teachers of Natural Science cycle Sciences on the implementation of interdisciplinary connections”and“organizational methodological issues of the implementation of interdisciplinary connections at school” - listeners get acquainted with the organization of the work of the school or the methodological Association of Shakhar (district). Generalization of pedagogical experience in a seminar or on a round table is a multiplication. The program of the special course is coordinated with the requirements for the activities of teachers for the implementation of interdisciplinary connections in the practice of teaching natural cycle subjects of teachers.

The professogram of activity of teachers of physics, chemistry and biology, mathematics and geography will look like this:

The teacher must have the following knowledge and competence³

1. Cognitive component
2. Constructive component
3. Communicative component
4. Organizational component
5. Mobilization component

The professionogram can be viewed both as a basis for the construction of the process of preparing teachers of physics, chemistry, biology, geography, Matematika for the activities of implementing interdisciplinary connections, and as a criterion for assessing the quality of their preparation.

The methodological function of interdisciplinary connections is provided when they are used by students as a method of systematic assimilation of knowledge, as well as as a method of improving the process of preparation in the system of educational science, its organization into one whole. Interdisciplinary, in particular, natural-mathematical knowledge is at the forefront of the traditions of the uniqueness of metodolo-Gia. Integration, in turn, provides for the conformity of the activities of the subjects of professional training of future teachers due to the general methodology, universal logical methods of modern thinking.

Planning constitutes a necessary and significant link in preparing future teachers for the effective implementation of interdisciplinary connections and is one of the means of their implementation in the practice of teaching students - and through them schoolchildren. It is advisable to correlate the planning of interdisciplinary connections with the methodological, educational, developmental, educational and constructive functions that they perform.

It has been proved that the goal-oriented formation of generalized skills with interdisciplinary content in students makes it possible to improve the quality of their professional training, and, consequently, the level of their future independent activity in the implementation of interdisciplinary connections as a teacher.

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