

INTERACTION OF BIOLOGY AND GEOGRAPHY IN CHEMISTRY TEACHING.

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Annotation: This thesis provides information on interdisciplinary integration, pedagogical integration and its functions, integrated course, methods of teaching chemistry in relation to biology and geography.

Keywords: interdisciplinary integration, pedagogical integration, methodological function, integrated lesson, technological function, evolving function.

The rapid development of science and technology in our country, the issue of training personnel for all sectors of the national economy in the current globalization process is one of the urgent tasks today. In the implementation of such important events and ideas, new demands are placed on other disciplines. New methods in teaching chemistry, new problems, new exhibitions, solving new laboratory and practical training problems, as well as the development of modern methods of teaching related to science are among the main demands of the times.

The relevance of the problem of the use of interdisciplinary communication in the educational process in different periods can be observed in the research works of scientists such as Ya.A.Komensky, D.Locke, I.Herbart, A.Distverg, K.D.Ushinsky. Information about the use of integration in chemistry in our republic is shown in the research works of F. Alimova and I. Shernazarov.

Chemistry is part of the system of natural sciences and is inextricably linked with mathematics, physics, biology, geography, and economics. When planning the teaching of each subject, it is given in the order of gradual development from simple to complex, but in some cases the interdependence of subjects is not taken into account enough.

Interdisciplinary integration is manifested in the application of the laws, theories, methods of management of one educational discipline. The systematization of the content carried out at this level leads to the knowledge result of forming a holistic picture of the world in the minds of students, which in turn leads to the emergence of a new level of knowledge that is expressed in general scientific concepts, categories, and approaches. Interdisciplinary integration significantly enriches interdisciplinary integration. Integration is the highest stage in the implementation of interdisciplinary communication. The functions of integration are the formation of the systematic nature of knowledge in students, the development of systematic thinking, the ability to transfer their knowledge and methods of activity (near, medium, long), and the formation of a scientific picture of the world in young students. In modern pedagogy, there is no generally accepted list of functions of integration, therefore, the most general, invariable functions of pedagogical

integration associated with all its varieties are distinguished. These are: methodological, developer, technological functions.

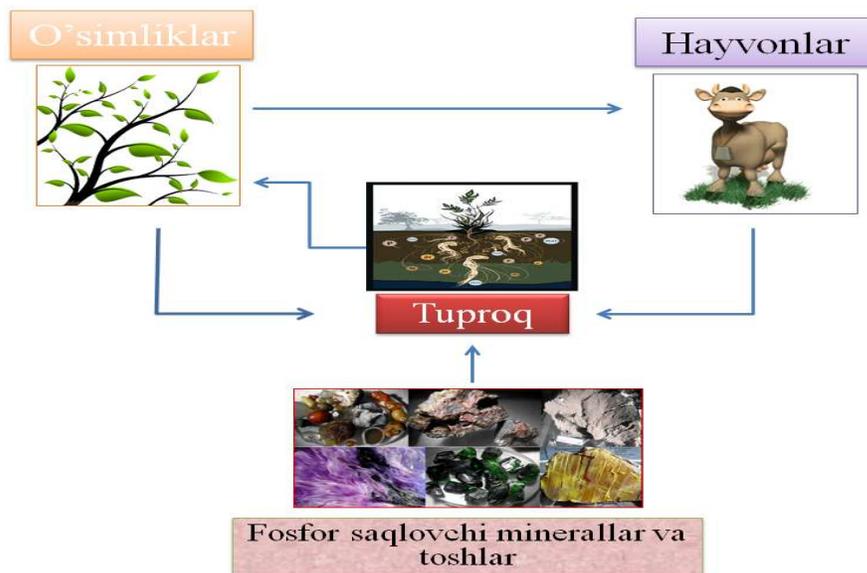
We can find the problems of ensuring interdisciplinary coherence and continuity in other disciplines and correct the solution, but we cannot be indifferent to our current problems in our own discipline.

Knowing the types of communication used and established in integrated lessons is necessary to determine their abilities in developing thinking and other cognitive processes, and therefore to achieve specific educational goals. It is impossible to build a well-integrated lesson without knowing the types of communication and without purposeful selection. Without the thoughtful aspect of integration, any such lesson would be a formal copy of the technology and a fad. Connections are the basis of integration as a process of establishing interaction of integration objects. Relationships are identified and established first within blocks of learning materials, then between blocks, and then within the entire thematic context of the lesson. The sequence of learning, presenting and mastering the integrated lesson material is determined by the types of connections. The structure of an integrated lesson means that you can make one big lesson from mini-lessons based on the material of other subjects. It can be made whole with a single methodological structure. It is possible to organize an integrated lesson in the form of modules (algorithms, problems, educational tasks and tasks) that comprehensively combine integrated knowledge, skills and abilities. Developing an integrated lesson plan is a joint effort of integrated subject teachers. Because of its complexity, an integrated lesson requires a script rather than a simple outline or outline. There are several subjects of the cognitive process, different materials and different methods of teaching. All this essentially requires careful management of the new cognitive process. We always talk about two or more teachers working together to prepare and deliver a whole lesson. However, such lessons can be taught by a single teacher with integrated subject material. Such situations are becoming common today. The advantage of the multi-subject integrated lesson over the traditional mono-lesson is clear. In such a lesson, you can create more favorable conditions for the development of various intellectual skills of students, through which you can achieve a wider formation of synergistic thinking, teach how to apply theoretical knowledge in practical life, real life, and profession. and scientific situations. Integrated lessons bring the learning process closer to life, make it natural, enliven it with the spirit of the times, and fill it with meaning.

In the process of integration, the boundaries between education and upbringing are eliminated, the abilities of each child develop, the teacher implements the following pedagogical ideas practically and purposefully:

1. Democratization and humanization of the educational process, its orientation not only to mastering the volume of knowledge, but also to the development of creative abilities of the individual, to the formation of high spiritual and moral values and an active personal position;
2. Ensuring the continuity and consistency of the educational process at all stages of development;
3. Creating equal conditions for revealing and improving the natural intellectual and artistic-aesthetic potential of every child;

It is known that events and processes occurring in nature occur at different times and in different ways. Natural sciences explain the causes, changes and conditions of these events and processes on the basis of their fundamental laws and concepts. Chemistry can be connected with biology and geography as follows: For example, the cycle of phosphorus in nature is shown in the given scheme, strictly following the direction of the arrow.



We provide information about the extraction and training of metals in which regions they are obtained and where they are used, and how these mined minerals rank in the world. In the science of geography, information is given about Navoi, Angren, Surkhandarya and Kashkadarya regions, but there is no information about the mineral resources mined in Uzbekistan and their composition. Information about where and how much is mined, its reserves, and how many reserves of material resources are not included. It is important to effectively use the integration of disciplines in finding a solution to a problem. It would be appropriate if the science of geography included information about the availability of natural resources and its extraction, as well as its leading places in the world. It forms national pride for the Motherland in every learner. It is necessary to be able to teach chemistry well and give the students the necessary knowledge, skills and abilities.

In conclusion, forming concepts of science through the topics of the main classes of inorganic compounds and connecting them with other natural sciences, that is, forming and developing knowledge and skills in the content of mineral fertilizers and sources of natural resources in chemical education, are considered important opportunities of using the integration of sciences. When using the integration of subjects, the ability to fully and accurately master the information related to the subject, to have complete information about knowledge and skills depends on the teacher's skills.

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