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From Interdisciplinary Connections in Teaching Chemistry (In the Case of Chemistry and Biology) Use Develop Skills

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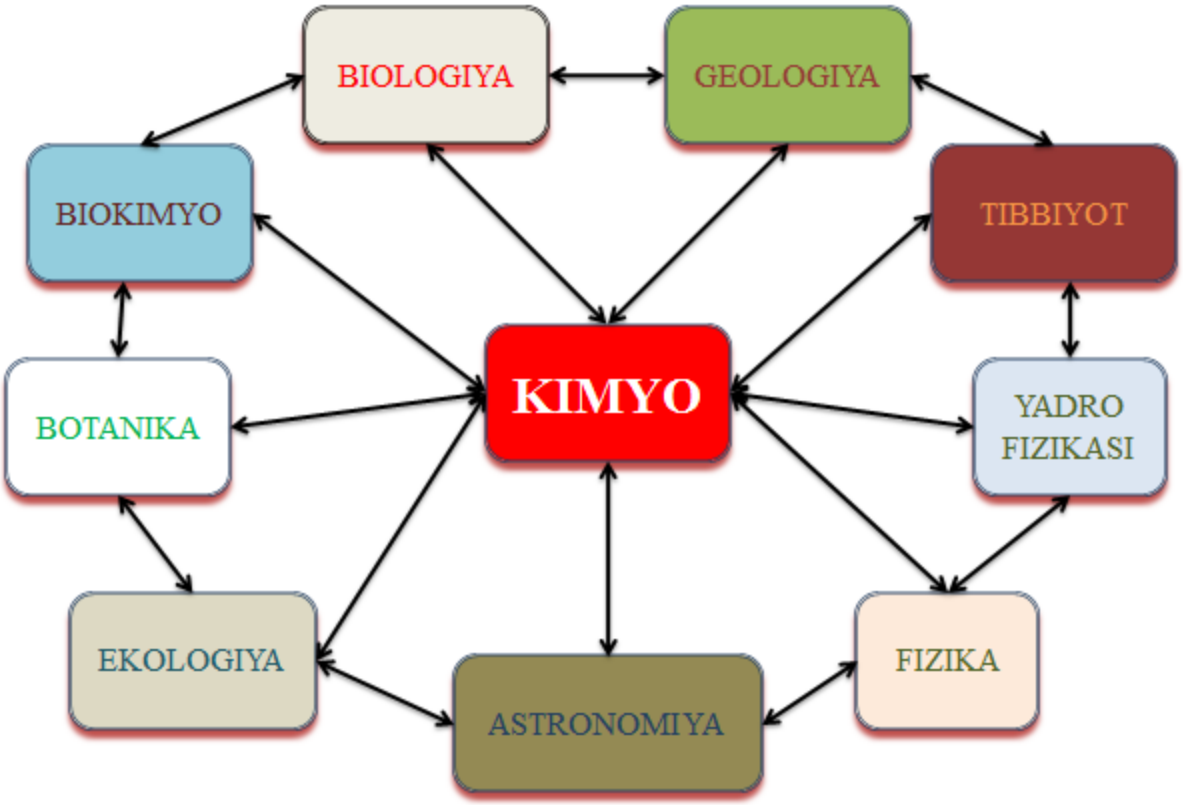
Abstract: In this article, the factors of improving the quality of education and the educational tasks of the subjects are embodied in the framework of "harmony of chemistry education with biology". It was also emphasized the need to improve the form, methods and tools of teaching in order to develop students' ability to think independently and increase their cognitive activity.

Keywords: interdisciplinary competence, lipid, mental development, didactics, energy exchange, integration, educational process, mental development.

The importance of chemical education at school is determined by its role in the development of science and technology, in the fields of production and in everyday life. By teaching chemistry in general education schools, forming and growing students' scientific outlook, ability to think logically, chemical thinking, mental development, self-awareness potential, inculcating national and universal values in them, and they are given the knowledge they need for their social lives and to continue their education. The formation of competencies in the lessons of connecting chemistry with other subjects demonstrates the connection between school subjects. Interdisciplinary competence is developed in students, and as a result, logical thinking occurs. The development of chemical and biological sciences in our country, the improvement of the quality of education and the effectiveness of science in these areas are among the priorities of the State Program "Year of Science, Enlightenment and Digital Economy". Chemistry has made a significant contribution to the development of biology, including the determination of the chemical composition of the cell, that is, inorganic and organic substances, the specific properties, composition, molecular structure of proteins, carbohydrates, lipids, their functions in the cell, substance and the law of conservation of energy laid the foundation for the study of matter and energy exchange in the cell. Implementation of interdisciplinary connection in teaching chemistry is an important didactic condition of the educational process, it ensures the scientificity and consistency of the educational materials, which are the main source of knowledge for students, and students' learning of knowledge. interest in mastering increases and intellectual development accelerates, it creates an opportunity to expand students' scientific outlook through the gradual and consistent implementation of interdisciplinary connections in teaching natural sciences.

In order to create a whole knowledge about a single object of nature, it is appropriate to teach biology and physics along with different subjects. The thorough acquisition of knowledge and skills in inorganic chemistry depends on the extent to which students can use the knowledge and skills they have acquired in other subjects in the teaching of this subject, that is, on the level of interdisciplinary communication. The connection of chemistry with other sciences can be explained as follows:



Since chemistry is one of the natural sciences, it is very important and educational to rely on the knowledge acquired by students from other natural sciences before starting to study it and in the process of studying chemistry. In the process of studying inorganic chemistry, students' ready knowledge and It is the main duty of a chemistry teacher to train skills in the proper use of skills, to ensure formation, to organize communication between man and nature in accordance with the purpose. In turn, it will be necessary for teachers of other subjects to use the topics of chemistry in their activities. In the project of the main directions of the reform of general education and vocational schools, further development of the quality of the process of education and upbringing of students, raising the level of teaching of each subject, achieving thorough mastery of the knowledge they receive from various subjects, ideological and political , the main task is to further improve labor, environmental and moral education. Based on these, the teacher chooses the form, methods and means of teaching each lesson, taking into account the purpose, content and age and individual characteristics of the students, to achieve the active participation of students during the lesson, and basically, it should raise the educational process to a higher level. For this purpose, the use of progressive lesson forms such as lectures, seminars, conferences, and educational games in the upper grades is effective. Nowadays, it is difficult to imagine teaching chemistry without connecting it with other academic subjects. The correct establishment of interdisciplinary communication and its skillful use will help to form the system of students' knowledge about nature, as well as their general chemical ideas and natural scientific concepts (substances, energy, structure and properties of matter, It has been proven in experiments that it has a positive effect on solid mastering of periodic circulation of substances, change of energy, body, its physical state, physical phenomenon, etc. By using interdisciplinary connections in chemistry lessons, the process of teaching chemistry is activated, students' interest in chemistry and other subjects increases. In modern didactics, the problems of interdependence of school natural sciences: chemistry, physics, biology, geography, etc., are one of the main issues, which allows students of general education schools to form a comprehensive system of natural knowledge. The use of biological concepts and laws in the process of teaching the general chemistry department in the field of chemistry leads to the formation of biochemical concepts in students, and the conscious deep assimilation of the knowledge gained in the field of natural sciences. The teachers of such subjects as chemistry, astronomy, biology, zoology, and human anatomy taught in schools interpret their subjects from an ecological point of view when teaching students about these subjects, and reveal the nature of the events and phenomena

that occur in nature when making general conclusions about the subjects. it is important that they give. On this basis, it is possible to create a table containing biological concepts that can be used in order to develop knowledge about ecology in general chemistry classes, and we express it as follows:

Order number	Chemistry topics	Biology topics	Content of environmental knowledge of chemistry
1	Hydrogen and its compounds	The importance of water for man and nature	Consequences of water pollution
2	Carbon and its compounds	The process of photosynthesis	Increased use of natural resources and disruption of the balance in nature
3	Phosphorous fertilizers	Fruit	Soil condition, fertility level
4	Silicon and its compounds	Pesticides. Soil fertility	Soil erosion. Anthropogenic factors. Agroecological problem

In conclusion, it can be said that the study of the implementation of integration in chemistry education, including the theoretical analysis of chemistry, physics, biology, mathematics textbooks, does not provide continuity (in the sense of time) among these subjects, the problems of environmental content in mathematics textbooks, and it was found that the amount of applied questions related to biology has decreased in the upper classes. In order to integrate these subjects, it is appropriate to create new generations of textbooks for ecological, physical, and chemical issues, and to give special importance to the formation of concepts, modeling skills, and equation solving skills that are widely used in these subjects and to bring them to the level of competence.

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