



CHARACTERISTICS OF TEACHING CHEMICAL AND BIOLOGICAL SCIENCES IN SCHOOL ON THE BASIS OF INTERACTION

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Article history:	Abstract:
Received: 30 th March 2022 Accepted: 28 th April 2022 Published: 11 th June 2022	Decree of the President of the Republic of Uzbekistan dated August 12, 2020 No. PP-4805 "On measures to improve the quality of continuous education and scientific efficiency in the field of chemistry and biology" This work to a certain extent contributes to the implementation and implementation of the tasks established by the Decree "On measures to improving the quality of continuous education and scientific efficiency" and other regulatory legal acts. An analysis of the model curricula for grades VII-XI showed that theoretical knowledge is integrated into curricula in chemistry, biology, physics, as well as practical skills that students must achieve in this area and pay special attention to their skills. Students were supposed to receive theoretical integrative theoretical knowledge

Keywords: chemistry and biology, education

INTRODUCTION. Decree of the President of the Republic of Uzbekistan dated August 12, 2020 No. PP-4805 "On measures to improve the quality of continuous education and scientific efficiency in the field of chemistry and biology" This work to a certain extent contributes to the implementation and implementation of the tasks established by the Decree "On measures to improving the quality of continuous education and scientific efficiency" and other regulatory legal acts.

An analysis of the model curricula for grades VII-XI showed that theoretical knowledge is integrated into curricula in chemistry, biology, physics, as well as practical skills that students must achieve in this area and pay special attention to their skills. Students were supposed to receive theoretical integrative theoretical knowledge.

MAIN PART. Integrating classroom and extra-curricular activities, and the ways they interact, remains a key challenge for students in developing chemical thinking. Chemistry, ecology, biology, physics taught at school should help prepare students for work and educate them as caring ecologists [5,103-106].

Advanced teachers strive to incorporate integrative content into classroom and extra-curricular activities, taking into account available resources. Natural science: teachers of geography, biology, physics and chemistry require students to explain the nature of phenomena and processes in nature based on chemical thinking, to explain the mechanism of reactions in living organisms.

It is known that although the science of chemistry was formed during the last centuries after the ancient world, neither physics nor biology could develop without its help, they were eroded from the outside and reached destruction.

While physicists claim that chemistry is a science that has penetrated us, chemistry can be preserved as a separate branch of physics, biologists claim that the chemical form of the movement of matter is an integral part of the biological form [1, 65-69].

The relationship of chemistry with biology has evolved from the ancient world to the Stone Age, the Bronze Age, the Iron Age, and finally to modern civilization.

Teaching chemistry and biology is an important part of the tasks of the continuous education system of the Republic of Uzbekistan. The closest related sciences in the field of natural science are chemistry and biology:

1. All members of the biosphere have a chemical composition that cannot be interpreted without chemical interpretation.

2. Chemical changes underlie biological processes. Modern biological knowledge cannot be given without knowledge of the place of chemical reactions in living systems.

3. Chemistry cannot be fully taught without physical postulates and laws.

4. Chemistry cannot be fully transferred to physicists and biologists, because physicists and biologists who do not know chemistry do not have a complete understanding of matter and its changes.

5. Only chemists can provide biologists with information about proteins, nucleic acids, lipids, carbohydrates and minerals.

6. When physicists make judgments about representatives of everything from subatomic physics to the macrocosm, the chemist has his own voice within the dialectic.

7. The predominance of chemical processes in the interaction of chemistry and biology should be reflected in the system of continuous education.

Physicists and biologists cannot have a voice on the scientific scene without the help of chemistry.

While chemists provide physicists with information about atoms and ions, radicals and molecules, coordination and chelate compounds, isotopes and isobars, biologists provide information about the chemical elemental composition of living matter, the composition and structure of living molecules, transformations, metabolism, etc. . assimilation and dissimilation (anabolism and catabolism), synthesis, destruction and regeneration of proteins and other biological molecules, biosynthesis and decay of biological molecules, chemical nature of biologically active substances, changes in plastic and energy substances in a living system, chemical details all substances that provide life processes, give all information about [2, 76-83].

Significant studies have been carried out on the relationship between chemistry and biology courses in higher education and general secondary education [5,65-71].

Biologists cannot understand the essence of life processes without the help of chemists. In this regard, the English biochemist J. Watson, who created a double-stranded macromolecular model of deoxyribonucleic acid and received the Nobel Prize, and the American theoretical physicist F. Crick, who was the first to write about these discoveries, carefully analyzed the differences in the thinking of chemists and biologists, there is a popular phrase:

It is no secret that the interaction of chemists and biologists has led to universal inventions and discoveries [4,31-34]. An example of this is the work of G. Krebs, who discovered the main vessel of metabolism and energy in living organisms, the mechanism for the exchange of di- and tricarboxylic acids, the citric acid cycle, the center of the main metabolic exchange and made discoveries in physiology and medicine in 1953 and received the Nobel Prize .

CONCLUSION. It is a fact that biologists need chemical knowledge to understand the universe. Everything in biology and the essence of the phenomenon cannot be explained without a chemical basis and chemical factors. Therefore, scientific cooperation between chemists and biologists should be interpreted as a very important phenomenon both from a scientific, pedagogical, and socio-humanitarian point of view.

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