CURRENT RESEARCH JOURNAL OF PEDAGOGICS
(ISSN –2767-3278)
VOLUME 05 ISSUE 01 Pages: 26-30
SJIF IMPACT FACTOR (2021: 5. 714) (2022: 6. 013) (2023: 7. 266)
OCLC – 1242041055
Publisher: Master Journals

Journal Website: https://masterjournals.com/index.php/crjp

Research Article

PEDAGOGICAL POSSIBILITIES FOR TEACHING BIOCHEMISTRY BASED ON AN INTEGRATIVE APPROACH

Submission Date: January 01, 2024, **Accepted Date:** January 05, 2024,
Published Date: January 08, 2024
Crossref doi: https://doi.org/10.37547/pedagogics-crjp-05-01-05

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ABSTRACT

In the article, the medical educational institution today advocates active learning strategies aimed at replacing traditional didactic lectures with innovations and increasing their integration in developing the knowledge, critical thinking skills of students as well.

Based on an integrative approach, the systematization of information related to the methodology of teaching biological chemistry, ensuring communication between disciplines, and the targeted expression of this process are analyzed.

KEYWORDS

Medical education, integrative approach, healthcare system, diagnostics, biological chemistry, physiology of veins diagram.

INTRODUCTION

One of the main issues of the current period is the qualification of personnel working in higher medical education organizations in our country, the continuous improvement of the teaching of biochemistry based on the integrative approach in accordance with the requirements of the time. In this regard, Decree No. PF-4947 of the President of the Republic of Uzbekistan dated February 7, 2017 "On the Strategy of Actions for the Further Development of the Republic of Uzbekistan" Decree of the President of the Republic of Uzbekistan dated August 12, 2020 "Chemistry and Biology or In the decisions No. 4805 "On measures to increase the quality of continuous education and the effectiveness of science in the fields of education, improving the skills of future teachers of biology based

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on modern requirements, improving the content of their studies, and their integration of sciences" It is determined that teaching based on the approach is the main goal

In our country, many activities are being carried out in higher medical education institutions in the field of teaching biochemistry, improving methodological quality, and training competitive personnel. At this point, it is necessary to ensure the integration of pedagogical and scientific knowledge for teaching biochemistry in higher medical educational institutions. In the process of developing the professional and methodical competence of the teachers working in the medical education system, it leads to the activation of the integration process of scientific knowledge in the system of scientific concepts.

The main part. In fact, in the introduction of the modernized education system, the teachers of each higher education system should improve their professional and methodical competence in their subject, as well as the education of the future generation, and be able to apply them in practice on the basis of consistency in their pedagogical activities. having skills is considered an urgent requirement of today.

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R.A. Sobirova in her textbook "Biological Chemistry" intended for medical institutions of higher education focuses on Biological Chemistry as follows. Biological chemistry is a science that studies the chemical nature of substances that are part of living organisms, their changes, as well as these processes in connection with the functioning of organs and tissues. [1]

Depending on the object being analyzed, it is conventionally divided into human and animal, plant, microorganism biochemistry and several other departments. Metabolism is the sum of all chemical reactions in the body. They are aimed at the stability and self-generation of the living system. The animal body, as well as the human body, needs food. In addition to water and mineral components, they should receive protein, fat, and carbohydrates with a complex organic composition. The main task of biological chemistry is to solve fundamental, general biological problems at the molecular level.

O. Abrorov said that biochemistry has a special place in medical higher education organizations. It is important for the future general practitioner to fully master the mechanisms of the development of the pathological process. Disturbance of metabolic processes lies at the basis of various diseases. In a healthy body, the processes of catabolism and anabolism are inextricably linked.2]

Several studies have been conducted in foreign countries based on an integrative approach to the education system. A.A. Bobrov issues of formation of students' experimental skills on the basis of connection between physics and chemistry.

A.A.Panayotov, the integrative essence of biology teaching methodology, Ye.V.Kolesnikova, the use of integrated seminars for the formation of generalized

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skills in the process of learning chemistry, N.K.Chapaeva, the theoretical and methodological foundations of pedagogical integration.

Researcher U. Zubaydov, based on an integrative approach to chemistry, its current state proves the need to introduce differentiated teaching of chemistry in all schools of our country.[3]

I.V. Nalivaiko stated: integrative-modular training in preparing for a healthy lifestyle: develops (in the example of biochemistry). These integrative-modular training sessions explain the concept of teaching biochemistry, methodical structure and improvement of teaching methods.

Researcher Y.N.Zarudnaya observed in his studies that as a result of the extensive use of computer animations prepared in the Macromedia Flash program when conducting biochemistry lessons, the rate of mastery of biochemistry by students increased.[4]

The conducted researches show that direct acquaintance with the content and specific features of theoretical sources, careful study of the collected evidence as a result of studying biochemistry based on an integrative approach, in the process of teaching biochemistry based on an integrative approach it was found that there are a number of contradictions, in particular:

- between the level of education of a biochemistry specialist of a higher educational institution and the content of the qualification requirements of the State educational standard and the requirements for its size and the level of implementation of the teacher's capabilities;
- comprehensive support of biochemistry teachers in the process of developing their professional and methodical competence in medical higher education organizations and between higher education activities and the mechanism and laws of student activity development;
- between the traditional and innovative methods used in teaching forms in the process of developing biochemistry based on an integrative approach in medical higher education organizations;
- between the insufficient use of biochemistry in medical higher education institutions, integrated with general professional and specialized sciences, in order to improve teaching based on an integrative approach;
- It is considered appropriate to emphasize the conflicts between the subjects and the content of biochemistry in medical higher education institutions based on an integrative approach..

The only way to overcome several conflicting issues listed above is to improve the teaching of biochemistry in medical higher education institutions based on an integrative approach.

In order to prepare information for an interdisciplinary integrated lesson, first of all, information from auxiliary subjects is systematically analyzed. Extracted information is placed in accordance with the topic plan and in accordance with the content. The objects of natural science, which are often related to biochemical data, are represented by a Venn diagram.

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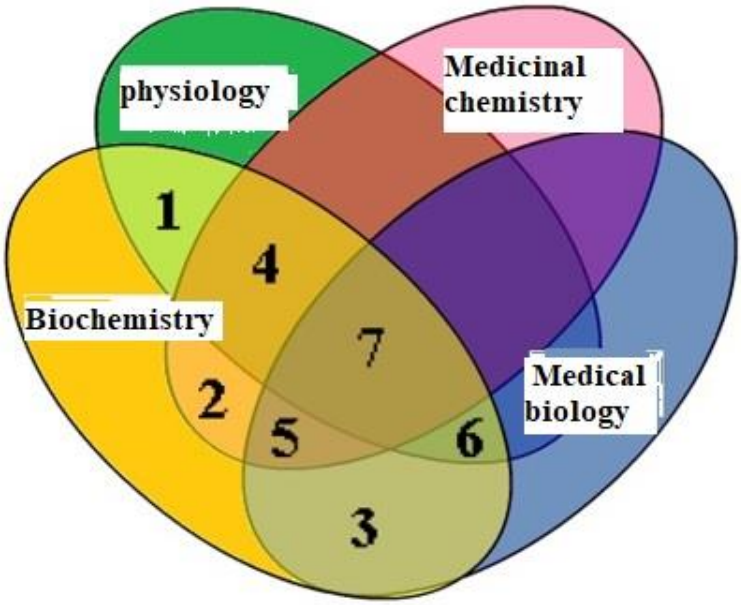

Figure 1. Venn diagram of the relationship between biochemistry and other natural sciences.

1- Biochemistry+physiology - general physiology and biochemistry of mobile tissues, individual organs and biochemical parameters, meeting and importance of substances in the human and animal body, cell composition, chemical structure of tissues (blood, bone, muscle), in the body metabolism, protein biosynthesis.

2- Biochemistry + Medicinal chemistry - substance structure, description of substances, solutions, electrolysis, nuclear reactions, semiconductors, chemical kinetics, catalysis, thermochemistry,

3- Biochemistry + Medical biology - natural reserves of substances, gene diseases, early detection of the origin of mutations.

Summary.Pedagogical possibilities of teaching biochemistry based on an integrative approach are one of the important aspects of the pedagogue's activity and represent the needs, abilities, skills, knowledge and interest of future specialists.

By elucidating the theoretical aspects of interdisciplinary integration in the teaching system of natural sciences and describing the specific aspects of the integrative approach in the teaching of biochemistry, it is possible to achieve the formation of students' abilities to study and diagnose the cause of the disease.

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