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METHODOLOGICAL PRINCIPLES OF TEACHING BIOLOGICAL CHEMISTRY IN HIGHER MEDICAL EDUCATION

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ABSTRACT

To substantiate the scientific and pedagogical priority of using innovative pedagogical technologies in the course of teaching clinical biochemistry in higher educational institutions specializing in medicine.

Keywords: medical education, pedagogy, pedagogical skill, pedagogical technology, biological chemistry.

INTRODUCTION

Methodology is a system of principles and methods of organizing and restoring the theoretical and practical activity of a researcher, as well as a teaching about such a system. Methodology is also defined as the doctrine of methods or general knowledge. Methodology teaches how to approach methods and reality in general. As a synergetic example of the methodology used to study a certain part of reality, an aspect, some state of its development, metaphysics, a methodology that reflects the linear development of reality, the process of change and the interrelationships between its constituent elements, dialectics, and the methodology used in the study of sudden, destructive changes occurring in reality, nonlinear development processes. can be shown.

ANALYSIS OF LITERATURE ON THE TOPIC (LITERATURE REVIEW)

Methodology can also be viewed as an algorithm of scientific knowledge, understanding and changing reality. For example, in Greece, geometry served as a normative guide for measuring land areas, and the science of geometry was considered an important methodology for the study of philosophy. On the door at the entrance to Plato's mausoleum is written "whoever does not know geometry, let him not come in front of us". In philosophy, Heraclitus' logos served as a methodology for understanding the world. Socrates and Aristotle contributed significantly to the development of methodology. Pharoabi interprets Aristotle's works from the point of view of the oriental way of thinking. Such comments have been a methodology in the study of Aristotle's legacy. Ibn Sina wrote in his memoirs that he could not understand anything even after reading Aristotle's "Metaphysics" 40 times, and that he understood the content of this work only after reading Farabi's comments. F. Bacon, R. Descartes, J. Locke, G. Galileo and other European scientists wrote special books about methodology. Also, Kant, Fichte, Schelling, Hegel contributed significantly to the development of methodology. Hegel developed the foundations of dialectical methodology. In the 20th century, synergetic, structuralist, and hermeneutic methodologies gained a reputation as the most prestigious philosophical

methodologies in philosophy, and systematic and complex approach methodologies are widely used in all human life processes.

RESEARCH METHODOLOGY

The concept of building a democratic society created an opportunity for each social science to develop its own methodology based on its own laws and subject matter. First of all, concepts such as personal approach, active approach, multi-subject approach, cultural approach, anthropological approach, and technological approach were created in scientific pedagogical research. Of course, these conceptual approaches will improve with time. Professor A. Choriev explained that the legal approach is the methodological basis of the modernization of the educational process. Because the specific laws of the educational process have been tested and determined in experiments throughout the centuries. As each science has its own laws, the laws of the pedagogical process will be a bright guide for scientific research. Methodology is the theoretical (initial) basis of the general regularity of science for methods, methods, views as a set, "approaches", and concepts. It is natural for each law to use its own methods and methods. Pedagogical laws began to be generalized in the 80s of last year. In many countries, there is only a philosophical approach to education. Since it is not based on certain laws, there have been attempts to discriminate against science in its objectivity. Each reality has its own law. Therefore, the legal approach to scientific research increases the theoretical significance of the invention and the effectiveness of the research.

DESCRIPTION OF METHODS

Nowadays, the interest and attention to the use of interactive methods, innovative technologies, pedagogical and information technologies in the educational process is increasing day by day, one of the reasons for this is that until now traditional if in education students are taught to acquire only ready-made knowledge, modern technologies teach them to search for acquired knowledge by themselves, to study and analyze independently, and even to draw conclusions by themselves. In this process, the teacher creates conditions for the development, formation, learning and upbringing of the individual, and at the same time performs the functions of management and guidance. In the process of education, the student becomes the main figure.

Therefore, the place and role of modern teaching methods - interactive methods, innovative technologies in the training of qualified professionals in higher educational institutions and faculties is extremely important. Knowledge, experience and interactive methods related to pedagogical technology and pedagogic skills ensure that pupils-students have an educated, mature qualification.

Innovative technologies are innovations and changes in the pedagogical process and teacher's and student's activities. Interactive methods are called group thinking, that is, they are methods of pedagogical influence and are a component of educational content. The uniqueness of these methods is that they are implemented only through the joint activity of pedagogues and students. Such a process of pedagogical cooperation has its own characteristics, which include:

-Forcing the student not to be indifferent during the lesson, to think independently, to create and search;

- Ensuring that pupils-students are constantly interested in knowledge during the educational process;

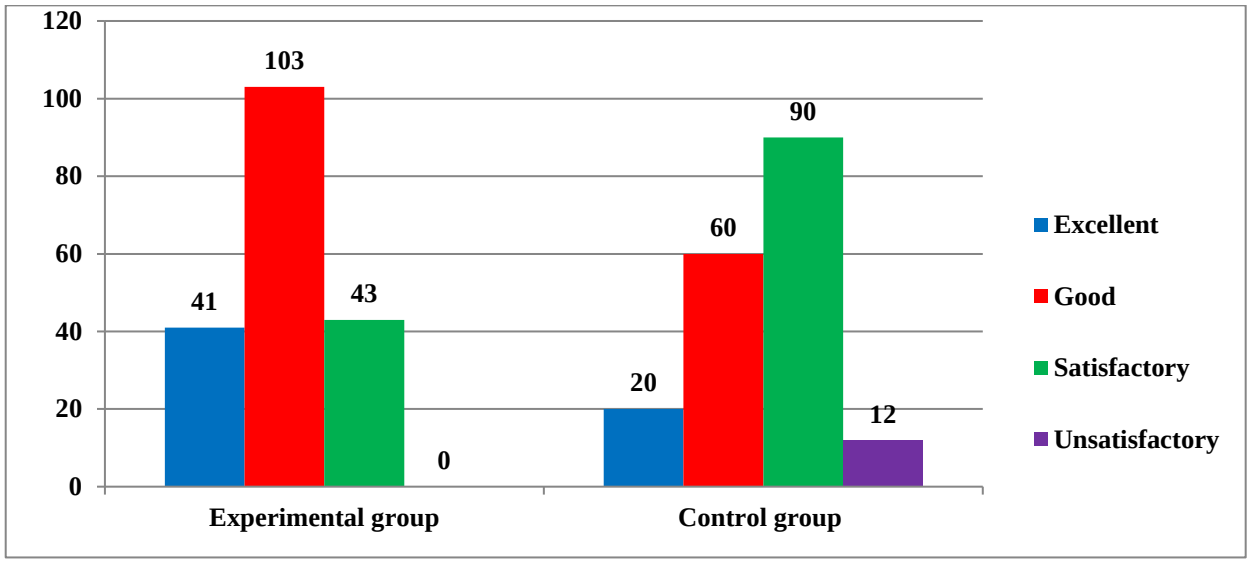
-Increasing the student's interest in knowledge by independently approaching each issue creatively;

-Organization of activities of teacher and student in cooperation.

The didactic effectiveness of the innovative approach to teaching materials was checked using the mathematical-statistical method. In order to check the effectiveness of teaching materials of the innovative approach, additional experimental work was carried out in experimental groups. In the test groups, work was carried out on the teaching of traditional types of educational materials.

Table 1

№	Educational institutions	Groups	Number of students	"excellent" - an excellent result with minimal errors	"very good" is an above-average result with some errors and "good" is an average result with	"satisfactory" - a poor result, with gross defects, "medium" - equal to the minimum result	"unsatisfactory" - additional independent learning is necessary to obtain the minimum level of knowledge, and "absolutely unsatisfactory" -
				5	4	3	2
				Excellent	Good	Satisfactory	Unsatisfactory
1	Andijan State Medical Institute	Experimental group	61	14	32	15	0
		Control group	63	7	20	32	4
2	Samarkand State Medical Institute	Experimental group	62	13	36	13	0
		Control group	59	6	20	30	3
3	Fergana Public Health Medical Institute.	Experimental group	64	14	35	15	0
		Control group	60	7	20	28	5
4	Total	Experimental group	187	41	103	43	0
		Control group	182	20	60	90	12



DISCUSSION

1. Theoretical knowledge, laboratory work, virtual experiments, independent work of students in the field of "Biological chemistry" were widely used in the educational process and efficiency was achieved in higher medical educational institutions.
2. The method of organizing and conducting laboratory work, virtual experiments, independent work of students in the science of "Biological chemistry" in medical higher education institutions was developed.

CONCLUSION

Recommendations were developed on the implementation of the State educational standard for teaching biological chemistry, especially clinical biochemistry, and the development of educational programs based on innovative approaches in higher medical educational institutions.

In medical institutions of higher education, students of biological chemistry used modern pedagogical technologies in the process of organizing their independent work, and defended their prepared independent work in front of the team of professors and teachers of the department.

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