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GENERAL MODEL OF ACHIEVING QUALITY AND EFFICIENCY IN TEACHING THE SCIENCE OF RADIATION MEDICINE AND TECHNOLOGIES IN HIGHER EDUCATION INSTITUTIONS

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ABOUT ARTICLE

Key words: Radiation medicine and technologies, didactic principles, training, intellectual, didactics, educational activity, educational model, technologization, mental activity, constructive.

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Abstract: In this article, ways to achieve quality and efficiency in the teaching of radiation medicine and technologies in higher educational institutions, a model of the educational process that takes into account the high level of technologization of professional orientation in the training of medical physics specialists, its implementation or 's, as well as the most important components of increasing students' intellectual potential are highlighted.

INTRODUCTION

Taking into account the high level of technologization of students studying in the fields of "Treatment work", "Pediatrics" and "Stomatology" in higher education institutions in the formation of skills and qualifications in the use of medical devices through the science of "Radiation medicine and technologies" and orientation to the professional field a model of the learning process was developed. In developing this model, I relied on the main rules of higher education pedagogy [1]:

- the main didactic law of the unit of educational and educational activity, which considers the educational process as a cooperative activity of the teacher and the student;

- to the didactic principles of teaching: scientific character, systematicity, visibility, availability, connection of theory with practice, unity of concrete and abstract, solidity of knowledge, individual and collective harmony, historical conditionality, principle of consistency, general education, the principles of self-education, understanding of educational material include:

- the need for continuous education;

- pedagogy is considered as a subject of human education;

- the importance of the well-rounded development of future medical physicists.

The model of the educational process should correspond to the main functions of the educational process: constructive, organizational, communicative and research.

The constructive function of the educational process is related to the selection of the logical structure of the lesson, the implementation of interdisciplinary connections, the systematization and generalization of the educational material.

The organizational function of the educational process is aimed at ensuring the influence of the teacher on the educational process by choosing the most reasonable and effective forms and methods of educational activity.

The communicative function of the educational process allows students to discover the personal meaning of learning, to focus on the formation of educational activity motives.

The research function of the educational process includes the search and justification of the most effective and rational methods of education.

The generalized model of the educational process in the training of specialists in radiation medicine and technologies, like any human activity, is based on the following structure (Fig. 1): goal - motive - content - methods - results. In addition, it is important that the model of the learning process meets the conditions of performance [2].

METHODOLOGY

Let's look at the components of the proposed model.

1. Goals and reasons for training specialists in radiation medicine and technologies. It is necessary to analyze the goals and reasons for the training of specialists in radiation medicine and technologies, and take into account the consistent subordination of the goals. "The entire set of goals forms a certain sequence from top to bottom, which can be expressed as a "chain of goals", where each subsequent level of goals is characterized by an increase in the number of specific goals compared to the previous one" [3]. Thus, in the generalized model of the educational process, the elements listed in the subsystem of

the system of training specialists in radiation medicine and technologies are specific goals in relation to the goals specified in the subsystem of goals. On the other hand, in connection with the goals of education, upbringing and development of students, the latter is private in connection with the goal of forming a comprehensively developed personality, one of the main goals facing higher education at the current stage is its development.

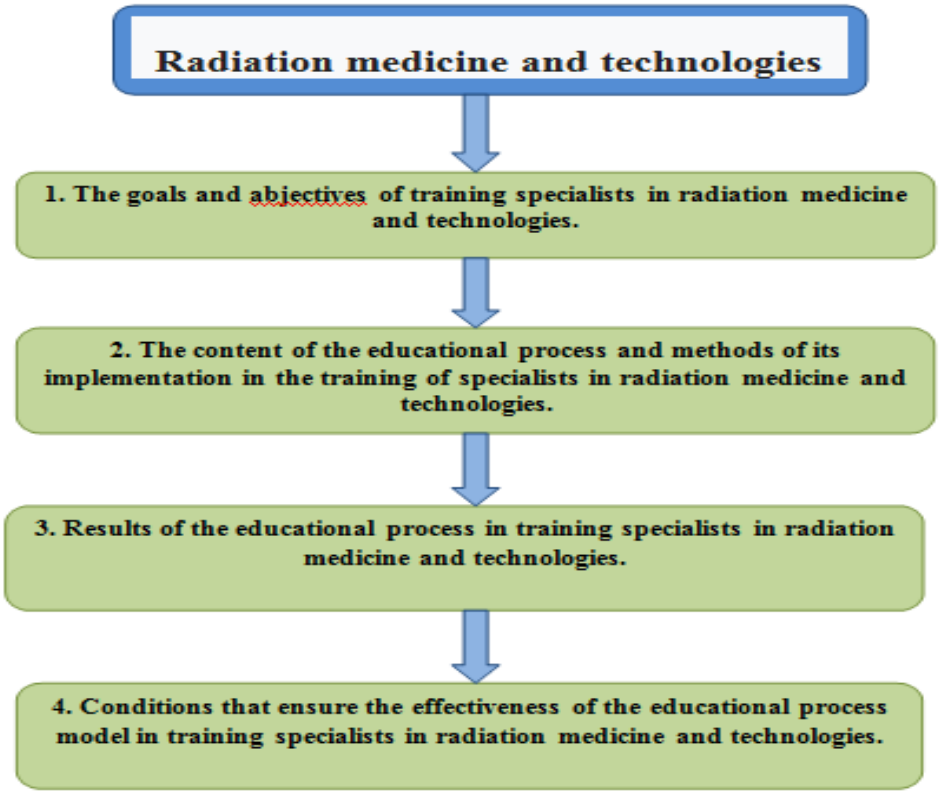

Figure 1. Model of educational process in training specialists in radiation medicine and technologies.

2. The content of the educational process and methods of its implementation in the training of specialists in radiation medicine and technologies. In the generalized model of the educational process, the content and methods of implementation are closely related and interconnected, but the content of the educational process is decisive in this set [4]. Analyzing the educational process of training specialists in radiation medicine and technologies, I identified two important aspects in it:

- The content of educational materials should be acceptable: helping to form strong professional knowledge in a new discipline does not lead to an increase in the total educational time at a higher educational institution;

- Creation of favorable conditions for the implementation of the selected educational material using the best methods of teaching is the basis for quality training of specialists in radiation medicine and technologies.

Naturally, an important element of the content of the educational process for training specialists in radiation medicine and technologies is mastering the material and controlling the formation of practical and experimental skills. The teacher's knowledge of the level of mastery of the material and the completeness of the formation of practical and experimental skills for each student allows him to quickly adapt both his activity and the student's activity.

3. Results of the educational process in training specialists in radiation medicine and technologies. Evaluation of the results of the educational process of training specialists in radiation medicine and technologies can be carried out "with the final result" - the level of mastery of the material and the completeness of the formation of practical and experimental skills, which affects the activity of the teacher and depends on the activity of students determined by the activity model. This activity is carried out under the guidance of the teacher, therefore, although the level of mastery of the material and the completeness of the formation of practical and experimental skills largely depend on the activity of the teacher, the results of his activity depend on the activity of the student [5].

4. Conditions that ensure the effectiveness of the educational process model in training specialists in radiation medicine and technologies:

- to ensure cognitive interest as a motivation for learning for radiation medicine and technology specialists, first of all, it is necessary to purposefully use incentives related to the professional activity of future students.

Among the various stimulations of students' interest in learning, which are distinguished in pedagogy, the main indicators in the training of specialists in radiation medicine and technologies are as follows:

- vital importance of the studied person;

- attracting teachers to modern scientific achievements [6].

- The generalized model of the educational process for mastering the science of "Radiation Medicine and Technologies" includes the acquisition of in-depth knowledge of a complex nature in many respects, it functions effectively only if the fundamental training conditions are met. With the intensive nature of teaching, the idea of fundamentality can be achieved as a result of paying special attention to the ways

of knowing, the main element of which is the ability to generalize and transfer. In addition, fundamentality is achieved due to the optimal ratio of theoretical and practical training in the training of specialists - practitioners who have sufficient deep theoretical knowledge [7].

RESULTS

The scientific novelty of the results in these processes is that we used this generalized model in order to increase the efficiency of the independent learning process of students of the professional education system. To determine the results of the educational training organized for the students in the science of radiation medicine and technologies through the “generalized model of achieving quality and efficiency in teaching the science of radiation medicine and technologies in higher educational institutions” conducted empirical research for the Faculty of Physics of Samarkand State University named after Sh.Rashidov “Nuclear Physics and Astronomy” methodology” to students of groups 305, 306, 3rd stage, “Biomedical physics” 3rd stage of groups 308, 309. The students of the group were voluntarily divided into two groups: the students of the first experimental group (25 students) used electronic educational resources and interactive methods, and the students of the second control group (24 students) were given traditional lessons.

There were 25 students in the initial group and they scored as follows.

- 5 marks in 3 students = 12% (average)
- 4 marks in 7 students = 28% (average)
- 3 marks in 12 students = 48% (average)

2 marks in 3 students = 12% (average)

Mastery rate = (12%+28%+48%+12%)/4=25%

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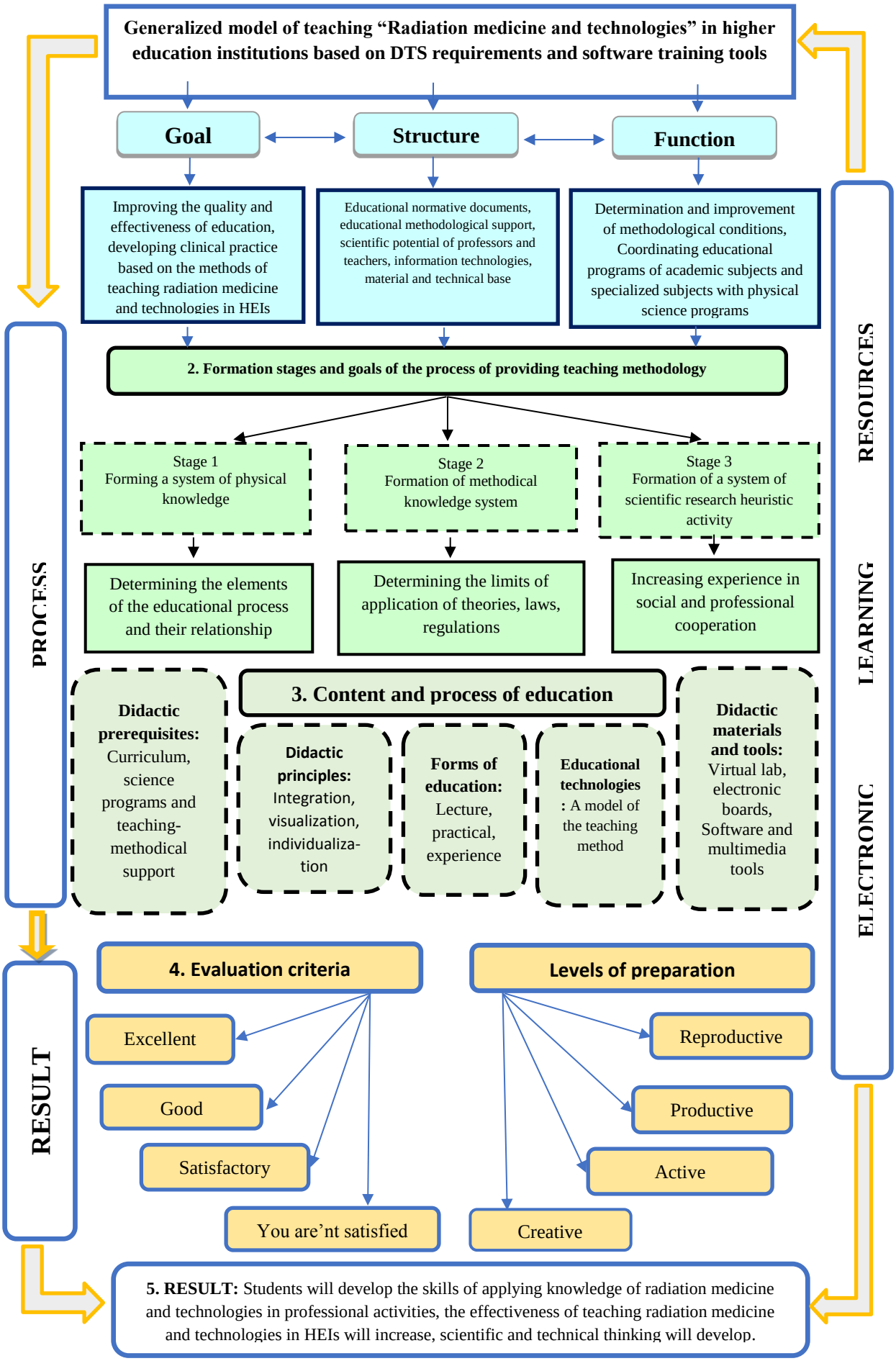
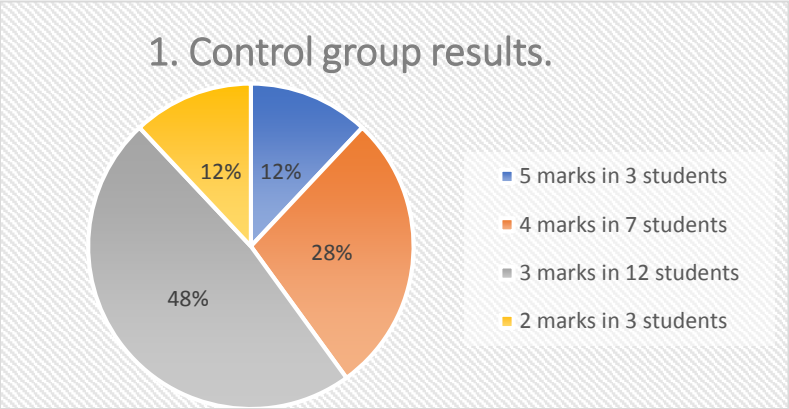


Figure 2. A generalized model of teaching the science of radiation medicine and technologies at HEIs.



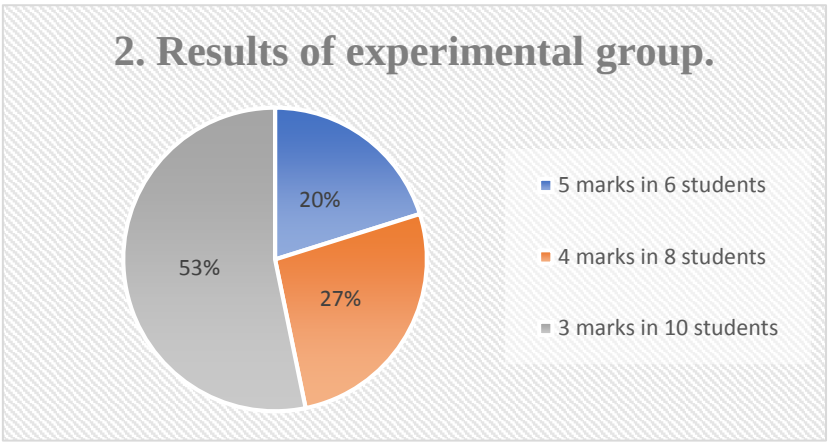
The results of the second group of students using the interactive method in the "Thought attack" method were as follows. This group also has a total of 24 people and their result is as follows.

5 marks in 6 students = 25% (average)

4 marks in 8 students = 33% (average)

3 marks in 10 students = 42% (average)

Mastery rate = (25%+33%+42%)/3=33.3%



CONCLUSION

In conclusion, it can be said that in the article, the quality and effectiveness of teaching the science of radiation medicine and technology in higher educational institutions and training specialists in this

direction, directed to the professional field, through the generalized model of the educational process, is 8.3% organized.

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