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OUR EXPERIENCE IN CONDUCTING INTEGRATION LECTURES ON BIOPHYSICS AND EYE DISEASES ON "OPTICS. BIOPHYSICS OF VISION"

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ANNOTATION

The article deals with the results of the investigation which took place at Tashkent Dental Institute. The data revealed the attitude of the medical students to "Biophysics". Offered methodological recommendations to the lecture "Optics. Biophysics of vision". The main goal of medical education is to improve the quality of training for the healthcare system based on high clinical, scientific, and ethical standards in medical education, the introduction, and the development of innovative educational technologies. *At the same time, the basis of teaching should be the well-known didactic principles of pedagogy, and methods of teaching students the natural sciences - systematic, and consistent presentation of educational material, visualization, and accessibility, integration of sciences, and the spread of inter-subject relationships in the educational process at all its levels, requirements for a training experiment.*

KEYWORDS: ***biophysics, density, medical education, method, physical measurements***

DISCUSSION

Biophysics is the science of the physical principles that underlie all the processes of life, including the dynamics, and kinetics of biological systems.

The subjects of biophysics are the physical principles that underlie all the processes of living systems. Biophysics is an interdisciplinary science somewhere between biology, and physics - as its name implies and, also, it is associated with other disciplines such as mathematics, physical chemistry, and biochemistry. Biophysics can be considered on an equal footing as part of physics. Especially today, when the boundaries between the classical disciplines are no longer established, it would be futile to try to balance these aspects with each other. Biophysics is one of the best examples of interdisciplinary science.

At present, in the conditions of increasing globalization of all spheres of social reality, the formation of a multidimensional world that cannot be mastered by people with a monological type of thinking, it is obvious that the increasing number of problems due to their polymodal nature requires interdisciplinary analysis and synthesis, the search for consensus between different alternative positions and ways of thinking.

Therefore, a special role in the learning process should be given to the development of system thinking, the ability to enrich their knowledge, guided by the flow of information of varying degrees of complexity and orientation. Components of education that reflect trends in the integration of scientific knowledge are of primary importance here. It is integration that determines today the style of scientific thinking and worldview of a person.

In modern dictionaries the term "integration" is most often defined as follows: integration (Latin) - restoration, replenishment, the unification of parts into a whole (integer - the whole), and not a mechanical connection, but interpenetration, interaction, mutual vision. Integration process means a new formation of integrity, which has systemic qualities of general scientific, inter-scientific or intra-scientific interaction, appropriate mechanisms of interrelation, as well as changes in the elements and functions of the object of study, resulting from the feedback of newly formed system means and qualities.

Many modern scientists come to the conclusion that integration is both the main way to renew the content of education and the leading form of education organization. Since it is based on the

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universality and unity of the laws of nature, human integrity and the integrity of the perception of the subject of the world around it. From the point of view of modern methodical science, the integration of subjects allows passing from local, isolated consideration of various subjects and phenomena of reality to their interconnected, complex studying that promotes more effective studying of a material.

Therefore, the introduction of integration into the educational process is undoubtedly an actual and leading trend in the global and domestic educational process.

Integration of academic disciplines in order to increase the content and integrity of education should be carried out by increasing the motivation for the study of general subjects, as well as creating more realistic and close prospects for the use of knowledge and skills acquired by students, ensuring consistency in the formation of knowledge among students.

In this regard, having analyzed the curricula of biophysics and ophthalmology subjects, we came to a mutual agreement to hold an integration lecture. The subject of biophysics was taken as a basis. In professional training, the idea of integration was carried out gradually: first, as the establishment of interdisciplinary relations, then as the interaction between the subject and the object of study. At the same time, we took into account that the teacher's activity is aimed not only at informing students of theoretical knowledge, but also at forming the skills and abilities prescribed by the program for the disciplines under study. Equally important is the ability to create a need for students to learn, organize cognitive activities, and develop their creative abilities and talents.

In preparation for the lecture we have set the following stages:

1) Formulation of the subject of the lecture;

2) Defining the purpose;

3) Choice of lecture type;

4) Highlighting the main key concepts around which the presentation of the material will be built;

5) Building a plan;

6) Selection of content;

7) Structuring the content and, if necessary (this is particularly important for the young lecturer), drafting the lecture outline;

8) Determine the nature of the students' inclusion in the lecture and the means by which they will be included in their own activities (questions, tests, assignments, tasks);

9) Selection of means to ensure the achievement of the objectives of the lecture (the language of schematic images, video equipment, electronic educational resources).

The wording of the topic is the first significant step when the teacher needs to "outline" the range of issues addressed in the lecture. This is a kind of framework of the event, which the teacher does not expect to go beyond. We chose the theme "Optics. Biophysics of vision" and the aim was defined - to show the relationship between optics and biophysics of the eye. In accordance with the goals, the type of lecture is chosen. The first part of the lecture was entirely devoted to optics, and a generalizing type of lecture was chosen. The second part was devoted to the visual organ and its work - the biophysics of vision. The next part was built on the basis of the lecture-dialogue, where the content is presented through a series of questions that students should answer during the lecture. The questions are designed in such a way that the students set up their own "bridges" between what they hear and what they know. This includes lectures using feedback techniques as well as programmed consultation lectures. The success of a lecture is often determined by the teacher's ability to organize students' reflection on the material they have learned.

Further, in accordance with the new approach to the content of the material under study, we had to review and select the technical equipment that would allow us to comprehensively reflect and show the phenomenon under study, to include students in the active independent learning and cognitive activity, because the integration of knowledge involves a detailed study of units of educational material included in the topic. In addition to the presentation material, various informative videos and computer simulations were included to test one's vision and feelings.

Based on our analysis of the integration lecture, a conclusion can be made:

- The integrated lecture provides an opportunity to synthesize knowledge and develops the ability to transfer knowledge from one industry to another. This, in turn, stimulates students' analytical activity, develops the need for a systematic approach to the object of cognition, forms the ability to analyze and compare complex processes and phenomena of objective reality;

- Integration helps to relieve tension, overload, and fatigue of students by switching them to different types of activities during the lecture;

- Integration is a means of obtaining new ideas based on traditional subject knowledge. It is aimed at the development of students' erudition, at updating the existing narrow specialization in learning. But integration should not replace learning traditional subjects, it should combine the knowledge gained into a single system.

- Integration is a source of new facts that confirm or deepen certain observations, conclusions of students in different subjects. It relieves the fatigue and strain of students by switching to a variety of activities, involves the strengthening of cross-curricular links, reducing student overloads,

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expanding the scope of information received by students, strengthening the motivation of learning.

After the end of the lecture, a survey among students was conducted. The essence of the survey is to find out the opinion of students on the conducted integrated lecture. During the survey, 54 students participated.

All students gave a positive assessment.

LITERATURE

1. *Bazarbayev M.I, Mullajonov I. And others Biophysics, Textbook 2018.*
2. *Harten U. Physikfur Mediziner. - Springer, 2011.10.70-71s.*
3. *P. Davidovits Physics in Biologt, and Medical. - 2013.- P 57-59.*
4. *Roland Glaser Biophysics Springer Heidelberg Dordrecht London New York Library of Congress Control Number: 2012936486 # Springer-Verlag Berlin Heidelberg 2012*
5. *Biryukova A.N. (Kobzar, A.N.) Preparation for the solution of professional problems of medical students in physics studies taking into account interdisciplinary integration: diss. ... cand. ped Sciences: 13.00.02 [Text] / Biryukova Antonina Nikolaevna. - M., 2013.-- 277 p.*
6. *Biryukova A.N. (Kobzar, A.N.) Physics at a medical university; under the editorship of S.I. Desnenko [Text] / A.N. Biryukova (A.N. Kobzar). - Chita: IITs ChGMA, 2012 .-- 83 p.*
7. *Nurmatova F.B., Kobzar A.N. Modern methods of physical properties of dental materials: Teaching aid - p.59*
8. *The working curriculum on the subject "Biophysics". Field of education: 5510400 - dentistry, 5511000 - pediatric dentistry. - Tashkent: TGSI, 2019 .-- 23 p.*
9. *Rakhimova H.Zh., Nurmatova F.B. "Guideline for conducting practical classes in biophysics" 2018.*
10. *Rakhimova Kh. Zh., Nurmatova F.B. The main physico-chemical properties of dental materials / Kh. Zh. Rakhimova, F.B. Nurmatova // Stomatologiya .- 2018. - No. 2.- p. 79*
11. *Remizov, A.N. Medical, and biological physics: textbook 4th ed., Rev., and reslave. - M: GEOTAR-Media, 2018.*
12. *T.A. Shirshova, T.A. PolyakovaLaboratory work as a means of motivating, and enhancing student learning. Omsk Scientific Herald № 4 (141) 2015 188-190c.*