

USE OF HISTORY ELEMENTS IN STUDIES OF MEDICAL AND BIOLOGICAL PHYSICS

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The article is devoted to the use of elements of historicism in classes of medical and biological physics. The possibility of raising the interest and motivation of students, developing ideas about the formation of science through the analysis of experiments and models is revealed. The use of elements of history shows that knowledge about the world around us, the laws of its existence, and the principles of its construction are continuously developing, deepening, and improving, so the formation of a modern specialist in any field of activity is impossible without the knowledge of the development of science and the tasks facing modern science. Turning to historical facts, one can, on the example of biographies of famous scholars, show that there were progressive thoughts on the use of scientific advances for the benefit of humanity. The use of historical material in classes on medical and biological physics contributes to the formation of students' logical thinking, world outlook, memory development, patriotic education, active civic stance, students' interest in the subject, and, as a result, increased motivation for learning, the formation of scientific world perception, the formation of the moral qualities of a future doctor, the creation of basis for the formation of an individual. Speaking about the life of well-known scholars, the teacher shows that their scientific and creative work shows that scientific research is a difficult and important work that embodies hopes, doubts, creative quest, disappointment, the aspiration of something new, the accomplishment of the goal, the dedication to its purpose. All of the above makes it possible to use historical facts to form students' medical qualities and moral qualities that will be useful to them in future professional activities. By introducing students to the world of well-known scholars, the teacher contributes to the formation of an active life position of youth, the ability to set and achieve goals, to use their achievements for the benefit of humanity. Using historical material as to the development and emergence of a new directions in medicine – medical radiology, medical students cannot reproduce original research in the educational process, but they can trace the historical development and development of this research direction. This creates the effect of presence of students at the time and in the circumstances when the discovery was made, which helps to convince them of the authenticity of historical information. The use of historical information in classes contributes to the development of students' thinking. Showing at the lessons the evolution of physics, the teacher reveals the role of practice as a source of knowledge and a criterion of truth and ensures deeper understanding of the laws of nature. Thus, the history of physics allows students to discover the general laws and principles of scientific knowledge. An example of a practical lesson on «Physical basis of nuclear medicine. (Determination of radioactive background, the activity of preparation, radioactivity, and dosimetry of ionizing radiation)» is given in the article.

References

1. Naumenko, O.V. *Metodyka vykorystannia elementiv istorii pid chas navchannia fizyky* [Methodology of using elements of history during the study of physics]. Access mode : <https://naurok.com.ua/metodi-vikoristannya-elementiv-istorii-pid-chas-vivchennya-fizyki-48489.html> / (Accessed April 2019). (In Ukrainian).
2. Biriukova, T.V., Fediv, V.I., Olar, O.I., Haidychuk, N.L. & Mykytiuk, O.Iu. (2017). *Istoriia radiolohii v konteksti dosiahnen pryrodnychukh nauk* [The history of radiology in the context of the achievements of the natural sciences]. *Aktualni pytannia suspilnykh nauk ta istorii medytsyny* [Actual questions of social sciences and history of medicine], no. 2, pp. 127-130 (In Ukrainian).
3. Kovalenko, O. (2015). *Toi, khto vidkryv ochi liudstvu* [The one who opened eyes to humanity]. *Osvita Ukrainy* [Education of Ukraine], no. 7, p. 14 (In Ukrainian).
4. Tsarenko, O. (2010). *Vykorystannia istorychnoho materialu pry vyvchenni temy "Elektrychnyi strum u ridynakh"* [Use of historical material in the study of the topic "Electric current in

liquids”]. *Naukovi zapysky. Pedagogichni nauky* [Proceedings. Pedagogical sciences]. Kirovohrad, RVV KDPU M.V. Vynnychenko Publ., issue 82 (1), pp. 233-239 (In Ukrainian).

5. *Rol istorizmu pry vyvchenni fizyky* [The role of historicism in the study of physics]. Access mode : <https://vseosvita.ua/library/posibnik-rol-istorizmu-pri-vivcenni-fiziki-117003.html/> (Accessed April 2019). (In Ukrainian).

6. Fediv, V.I., Mykytiuk, O.I., Olar, O.I. & Biriukova, T.V. (2018). *Vykhovannia patriotyzmu u studentiv u protsesi vyvchennia medychnoi ta biolohichnoi fizyky* [Educating patriotism in students in the process of studying medical and biological physics]. *Visnyk universytetu imeni Alfreda Nobelia. Pedagogika i psykholohia. Pedagogichni nauky* [Alfred Nobel University Bulletin. Pedagogy and psychology. Pedagogical sciences], no. 2 (16), pp. 97-101 (In Ukrainian).

7. Kovalenko, O. (2015). *Susid Alberta Einshteina* [Albert Einstein’s neighbor]. *Osvita Ukrainy* [Education of Ukraine], no. 8, p. 15 (In Ukrainian).

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