

SECTION 18. PEDAGOGY AND EDUCATION

Popko Svitlana

Ph.D., Associate Professor of the Department of Histology, Cytology and Embryology
Zaporizhzhya State Medical University, Ukraine

Aksamytieva Mariia

Postgraduate of the Department of Histology, Cytology and Embryology
Zaporizhzhya State Medical University, Ukraine

Yevtushenko Valentina

M.D., Professor of the Department of Histology, Cytology and Embryology
Zaporizhzhya State Medical University, Ukraine

EXPERIENCE OF APPLICATION OF MODERN INNOVATIVE TEACHING METHODS IN HIGHER MEDICAL SCHOOL STUDYING THE DISCIPLINE "HISTOLOGY, CYTOLOGY AND EMBRYOLOGY"

***Abstract.** Modern realities of life require the widespread use of modern innovative methods, primarily distance learning in Ukrainian higher medical school. The article describes the features of distance learning of the discipline "Histology, cytology and embryology" in conditions of quarantine. Many years of experience in the use of innovative technologies at the Zaporizhzhia State Medical University of the Ministry of Health of Ukraine contributed to the effective and timely organization of distance learning at the Department of Histology, Cytology and Embryology. The use of a personal competence approach to each student contributed to a better assimilation of the educational material allowed them to gain high quality and deep knowledge.*

Introduction. The importance of the personnel potential of medical institutions increases during the period of reforming the health care sector, therefore the training of high-quality, competitive specialists in higher medical educational institutions is of particular importance [1, 2, 3]. The habituation of innovative technologies provides for the embodiment of the principle of practical psychology, when only 10% of the material perceived by ear is assimilated and 90% of what they have done themselves, learning independently [4, 5]. Moreover, the period of reforms in healthcare and medical education coincided with the COVID-19 pandemic. The difficult life situation, developed around the world today, requires adaptation to changes in the conditions of everyday life, work and study. Higher medical school in Ukraine and all over the world has switched to distance learning to create a safe environment for teachers and students due to the COVID-19 pandemic.

The purpose of the study is to reveal the concept of "distance learning", to determine the advantages and disadvantages when using the distance learning form for students in general and when studying the discipline "Histology, Cytology and Embryology" at the Zaporizhzhia State Medical University of the Ministry of Health of Ukraine.

Results. Distance learning is a form of education that requires the use of computer and telecommunication technologies providing interactive relationship between teachers and students at different stages of training and independent work with information network materials. Distance education is a new "phenomenon" for Ukraine, since until now it has been used quite rarely in the educational process. Many countries of the world use actively this form of education. For example, in the United States, 2.5 million children study at home and their number is increasing every year. The distance education system in Ukraine is only making its first steps, but it is improving every year. We hope the successful experience of distance education in other countries will be actively used in educational institutions of Ukraine.

Today the distant form of education gives all of us the opportunity to create a system of continuous self-education, general exchange of information [6, 7]. It should be noted that today Zaporizhzhia State Medical University is one of the leaders in institutions of higher medical and pharmaceutical education in Ukraine for the habituation of the latest information and communication technologies in the educational process. Today, the university's web portal is an important part of the information space not only of the health care system of Ukraine, but also of the world, because it provides higher education for both domestic and foreign future doctors and pharmacists. At the same time, the university's web portal provides access to the web pages of each department, which contain all the information necessary for the full preparation of students for classes throughout all educational periods. A feature of the implementation of high-quality distance education is that at all departments of the university, students have access to electronic educational materials posted on the university's web portal, in particular to presentations, lecture texts, methodological recommendations for preparing for practical classes, a bank of situational tasks and videos. Innovative technologies and interactive methods of distance learning in the training of future doctors are being introduced at the Department of Histology, Cytology and Embryology systematically and consistently. First, the leadership of the Zaporizhzhia State Medical University founded the material base - high-quality technical equipment of the department with two interactive boards, a computer class, webcams with a microphone, high-speed powerful Internet, without which interactive learning is impossible. Thanks to this, interactive interaction with students studying at the department has been established. One of the stages of the habituation of innovative technologies into the educational process was the diagnostics of elements of histological preparations, introduced by the team of the department in interactive practical exercises using the Internet resource «Histology Guide - virtual microscopy laboratory». This progressive method makes available the visual art of recognizing the structure of cells and tissues and understanding how this is determined by their function. Rather than reproducing the information found in a histology textbook, a user is shown how to apply this knowledge to interpret cells and tissues as viewed through a microscope. Because of the high cost of purchasing and maintaining microscopes and preparing or purchasing slide collections, histology is taught today without laboratories. A histology atlas is frequently used as a replacement. This is unfortunate because no matter how good the few images in a textbook or histology atlas are, they cannot replace the experience of viewing a specimen through a microscope.

To improve the quality of the educational process and better communication between students and teachers during the quarantine, Zaporizhzhia State Medical University has implemented online training in Microsoft Teams based on the Microsoft Office 365 platform. Practical classes in histology, cytology and embryology are held according to the schedule in the video conference mode. Microsoft Teams makes it possible to conduct online classes with high quality and as efficiently as possible. What is more, the team of the teacher and students prepare and present reports on the topic of the practical lesson. The student presents the histological characteristics of a certain organ or organ system with clinical correlations, clearly demonstrates the techniques of clinical thinking. Other students listen to and actively discuss the material

presented. This communication is a form of interactive learning. The next project of the department team was the development of original tasks for both practical and final lessons on the Microsoft Office 365 and Microsoft Teams platform. The Microsoft Office 365 platform has become the basis for interactive student learning. Performing these tasks, students study the microscopic and submicroscopic structure of organs and their components on light and electronic micrographs, solve situational tasks, generalize, analyze, establish interdisciplinary relationships. For independent work of students, teachers of the Department created and presented in the electronic educational programs MOODLe and edX illustrated video lectures on Histology, Cytology and Embryology, original online courses that can be studied by students independently remotely.

Thus, the main task of teachers is to organize the educational process in such a way that students have the opportunity to develop, improve their skills in working with modern computer technologies, use the acquired knowledge, skills and abilities in future professional activities. For the effective use of information and communication technologies and the formation of the necessary competencies among students of medical higher educational institutions, it is necessary to constantly modernize teaching methods in accordance with modern teaching technologies.

Conclusions. The use of modern distance interactive forms of education at the Department of Histology, Cytology and Embryology of Zaporozhye State Medical University brings the process of professional education to the level of the conscious competence of specialists, which is formed due to the awakening of interest in learning, the effective assimilation of educational material, an independent search for ways to solve the assigned educational problem, teaching work in a team.

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