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# SCIENTIFIC TRENDS IN THE DEVELOPMENT OF EDUCATION IN UNIVERSITIES

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## HIGHER EDUCATON: INNOVATIVE TRAINING STRATEGIES AT A UNIVERSITY

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**Background.** Creating the necessary information base for the formation of a doctor is impossible without fundamental medical and biological knowledge. Diagnosis and treatment of pathology is based on a deep understanding of the mechanisms of functioning and molecular basis of structural organization and regulation in the norm. This is facilitated by the development of molecular biology and genetics, which today are sometimes used as examples of gene and cell therapy. Practical classes in histology, cytology and embryology at the medical universities in Ukraine play a significant role not only in illustrating theoretical knowledge, but also in providing them with understanding and deep learning. Compared with other types of human activities and the corresponding systems, knowledge in medicine is related not with the largest amount of diverse information on assimilation and application in the diagnostic and therapeutic process. It should be comprehended that this volume of information is being constantly updated and revised, which requires continuity of the post-graduate study process.

**The aim of the study** is an analysis of quality and effectiveness teaching the basic knowledge of medicine-histology by improving smart technology and problem-oriented training in the class independent work of students at the medical university.

**Results.** The aim of the course in histology is not to study pathological changes in the organs, but only an understanding of the functional characteristics of normal structures to enable student to diagnose the abnormal changes to substantiate the role of the traditional teaching method of diagnosis of histological preparations (glass slides) the formation of practical skills and the development of clinical thinking of students in the initial courses of study and outlining some ways to optimize professional training.

At practical sessions of the Department of Histology and Embryology of the O.O. Bogomolets National Medical University the diagnostics of preparations is carried out

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on a specific object according to the method in the following sequence: 1) initial independent study by the student of histological preparation; 2) then each student shows the teacher the structure in the preparation, and the teacher provides the necessary explanations and controls the student's skills; 3) further discussion of this organ is carried out with the participation of all students; 4) if the organ is studied, then it is first necessary to determine its place in the functional system of the organism, and to give a general characteristic (origin, determine the general plan of its structure, show parts or shells, determine diagnostic features; 5) provide a detailed histological analysis of structures and their functional properties. Each histological preparation is studied in two stages. In the first stage, the student learns to "read" a glass slide and to form his "visual image" in the norm and acquires the ability to diagnose possible changes in the normal status. In the second stage tables, diagrams, electrographs and multimedia presentations are used to provide practical skills. Each student has the opportunity to be orientated and self-directed and opportunity to fully demonstrate initiative, independence, creative search in research and be more interactive during the differentiating of histological specimens and discussion the solution of problematic scientific issues of medical importance.

During our experience we have used method of American educator and philosopher John Dewey, which proposed changing the paradigm of learning from simply memorizing information to the active participation of students themselves in the process of acquiring knowledge according to their cognitive activity and interest. It is associated with the name "project method", which is a basic in various degrees of education in many countries. It should be noted that medical education is associated with the greatest amount of variety of information on the assimilation of knowledge and its application in the diagnostic and therapeutic process. It should be emphasized that this amount of information is constantly updated and revised. Histology and embryology were integrated with other basic science disciplines throughout the first two years of undergraduate medical education which requires the continuity of the postgraduate study process.

Many studies, including ours, were devoted to the role of interactive teaching methods, since the educational process takes place in conditions of constant active interaction of all students. This is co-teaching, co-training where the student and teacher complement each other. The teacher acts as the organizer of the training. Organizing online learning involves modeling real-world situations, using game elements and discussions, collaboratively solving problems based on an analysis of the circumstances and the relevant situation. During group learning, students learn to think constructively, make informed decisions, develop the ability to persuade and debate.

**Conclusion**. In our opinion, the differential approach to the use of information and communication technologies allows to expand the availability of training and to improve the psychological and pedagogical conditions in the formation of students' personal traits. We have a high level of awareness of their responsibility for the quality and effectiveness of learning, as well as their willingness to educate and improve themselves.