

## МЕДИЧНА ОСВІТА

### THE MODERN APPROACHES OF TEACHING OF «ORTHODONTICS» DISCIPLINE FOR THE STUDENTS OF THE DENTAL FACULTY

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**Abstract.** The perspective directions of dentistry in the XXI century The World Health Organization named orthodontics and implantology. Publications in recent years show a significant prevalence of dental anomalies along with other major dental diseases. The training of highly skilled persons on the specialty “Orthodontics” are an important task of dental faculties and specialized departments of medical universities. The purpose of studying the discipline is the formation of students’ knowledge and skills in the method of examination of children with dental anomalies, congenital and acquired malformations of the maxillofacial area, skills of diagnostics, prevention and treatment of this pathology, improvement of the quality of knowledge and skills in mastering the specialty. In the program the advanced content of the discipline “Orthodontics and children’s prosthesis” at the end of the 9th semester, students complete the study of the subject of the defense of the history of the disease of the orthodontic patient, which allows the student to show on a specific example all the completeness of clinical thinking, apply all the knowledge gained during three semesters, understand what is needed for this or that method of diagnosis, link the theory to practice. At the same time, the teacher will be able to clearly identify missing knowledge, violation of the logic of thinking in diagnosis, diagnosis and preparation of a plan for treatment of the patient with dento-facial anomaly, pathological bite. It helps to identify issues that need to be emphasized during lectures and seminars. It is extremely important for clinical thinking to master the principles of formulating an orthodontic diagnosis based on the results of diagnosis and planning of pathogenetic treatment. This allows students to develop their clinical thinking, makes them think and think. Knowledge of the features of orthodontic examination, diagnosis and choice of treatment methods is important in the preparation of an orthodontist. The modern and diverse methods of assessing the level of knowledge of future physicians increases the motivation to study the profession, the effectiveness of assimilation of the proposed material, which leads to the growth of professional skills.

**Key words:** teaching, dentistry, orthodontics, method, pregraduate education.

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### PROBLEMS OF TEACHING HUMAN ANATOMY AT THE MODERN STAGE AND THE WAYS OF THEIR SOLUTIONS

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**Introduction.** Ivan Pavlov, an outstanding physiologist, noted that only after studying the structure and function of organs, we can correctly understand the causes of diseases and the possibility of their elimination. Without knowledge of the structure of the human body, it is impossible to understand the changes caused by the disease, to establish the localization of the pathological process, to perform a surgical intervention, and consequently – to determine the correct path to diagnosis and treatment. Historically, the initial principle in the teaching of human anatomy as an academic discipline was the description of body parts and organ systems, taking into account their topography and close connection with functions at macro- and microscopic levels, taking into consideration the age-related variability and gender differences [1]. As you know, anatomy involves a large amount of information and demands from the teacher new methodological approaches that will help students to understand the subject better. In the modern teaching of human anatomy, students’ attention should be aimed at the study of the applied anatomy, on the clinical direction of the relevance of the studied structures. It is reasonable to teach and study anatomy in the context of an emphasis on the structures and functions in the various normal range aspects and its relationship with pathology [2].

Endoscopy, scanning, echocardiography, ultrasound diagnostics, and magnetic resonance imaging – all these achievements of scientific and technological progress

would be impossible without perfect knowledge of the structure of the human body and they are new methods of anatomy as a science. Together with physiology, it is the basis of theoretical and practical medicine, since accurate knowledge of the shape and structures of the human body is an indispensable criterion for understanding the vital needs of a healthy and sick body and creating correct ideas about the causes of the diseases, without which prevention and treatment would be impossible [3]. The basic anatomy curriculum should be the basis for physical examination of the patients, interpretation of medical imaging data, and general competence related to the basic medical procedures. It is necessary to provide students with an idea of what is important for their clinical competencies in the overview lectures when studying each topic. In order to improve anatomy as an academic discipline, anatomists should improve themselves as clinical anatomists.

**Aim and tasks** of this work was to reveal the essence and characteristics of teaching human anatomy in modern conditions, identifying the shortcomings and advantages of the updated approaches to teaching, introduced in the educational process, and rethinking the traditional teaching methods with various forms of integration of modern techniques.

**Results of the study and their discussion.** The human anatomy curriculum, along with the theoretical questions of the subject, contains data on the morphogenesis and structure of the human body at the organ and system lev-

els, at the level of the whole organism, taking into consideration age, gender and individual peculiarities. These data are needed for further study of a number of theoretical and all clinical disciplines [4].

The priority task of the human anatomy departments is to improve the educational process and to enhance the quality of students training today. At the same time, the preservation of classical methods of teaching anatomy is a key issue. Therefore, teaching anatomy ensures the required practical orientation: maximum visibility, a close connection between the issues of physique and the problems of practical medicine [5]. It gives an emotional character to the educational process, makes cognitive material alive, developing in accordance with the progress of the particular specialty, fosters love for science, the ability to compare and analyse facts, apply anatomical knowledge in the study of other disciplines.

Unfortunately, the beginning of the XXI century is characterized by a decrease in understanding of the importance of anatomy both for the formation of clinical thinking and for the worldview of a modern doctor. When modern reforms were declared, teaching anatomy was condensed by the voluntaristic decision. Anatomy has gradually transformed into an academic and theoretical discipline, which resulted in a decrease of young doctors' interest in this subject and a decline in the number of talented young people. Nowadays when the demand for people of intellectual work goes down, the level of professional training for the younger generation is underestimated, and thus students lose interest in successful training [6].

According to the old plan for a three-semester study of anatomy, the anatomy test at the end of the first year of study was mandatory. If the student did not pass this test, then he was not allowed to take the course examinations. An anatomy test was a transitional preparatory stage for the main exam in the discipline.

It is important to acknowledge the importance of the anatomy exam as a stimulus for studying further clinical disciplines. The exam raises lots of questions from the material of the delivered lectures. This fact increases the necessity of attending lectures and the introduction of rules that students are expected to come to the exam with their lecture notes. Otherwise, students are warned that at the exam they will be asked additional questions on the topics of the missed lectures. And all this is aimed at reducing the number of the missed lectures.

Earlier, when the student received the exam ticket, he was pointed to one of the questions that would become the topic for compiling a list of Latin terms. The answers to the exam questions were supported by an additional demonstration of the corresponding anatomical preparations as the main criteria for assessment of student's knowledge. As one can acquire the ability to find and show parts and elements of the structure of organs and systems of the human body, only practicing based on the natural anatomical preparations.

The guiding principle in the study of human anatomy is the principle of visibility. The essence of the process of teaching anatomy, as in no other discipline, is the visual aid. Natural preparations of human organs should be an obligatory component of the whole educational process at the departments of anatomy. Using preparations during the session, students see the difference between them and their reference images in atlases. A student

can receive a spatial model of the organ and its parts only through a preparation that represents visibility – the basic principle of studying anatomy. Deep didactic meaning bears significance because of the peculiarities of a certain anatomical structure of the organ, its biological and clinical significance, because this small detail of the organ is important for the physiology of this organ, for the whole system of the human body or it is important for further clinical training. Indeed, deep theoretical knowledge and practical skills in human anatomy can be obtained only with systematic persistent work in the sectional halls of the Department before each practical session. The former entrant, having visited the sectional hall for the first time, is practically convinced of his career guidance. After all, the preparation provides an opportunity to imagine, understand the anatomical structure in various projections, in other words, it is about forming a certain anatomical image, which will become the basis of further clinical thinking of the future doctor. Skilful use of anatomical preparations raises interest and activates the process of perceiving theoretical discipline, as the student visually sees the necessity of this knowledge for practice, provides early profiling of the future doctor. Life has shown that the study of human anatomy without an anatomical preparation is impossible. Therefore, at the Department of Anatomy, teaching should be based on the work with anatomical preparations. Taking into consideration the material difficulties, the department is not able to provide students with anatomical preparations for dissection under the supervision of the teacher both during practical sessions and in extra time. However, it would significantly increase the level of mastery of the material, because the student feels responsible for the quality of the manufactured product. It would be useful for the students to work with the study guides developed by the teachers of the department, e.g., human anatomy in drawings, books for colouring anatomical structures.

The actual material on human anatomy includes about 5,000 anatomical structures that you need to be able to find, show on the preparations, call Latin and Ukrainian names and explain their practical significance.

A compulsory element in the classical education system is a personal, live interview of the teacher with the student, not only revealing the depth of professional knowledge, but also the breadth of general education, culture, language and even the character of the student [7].

A very important point in the educational and monitoring processes is to develop the student's ability to analyse, and for this purpose it is useful to put oral challenging questions and to give tasks aimed at solving problems that may arise in a person's life. Thus, an oral questioning of a student brings the learning process closer to life, mastering the professional skills of a doctor [4].

Combining the analysis of students' achievements in mastering the educational material with their review ensures long-lasting, labile, stable and dynamic knowledge, it is necessary to refresh learned material as often as possible.

Since at the practical classes the students independently perform certain tasks, they must come sufficiently prepared. The teacher should determine the general preparation of the students to this lesson by interviewing them (always using the preparations) with the active participation of the whole group. At the same time, his task

is rather not to characterise each answer in detail, but to attract the majority of students to a profound disclosure of the topic through a live interview. After that, using the prepared products, other teaching aids, the teacher should provide additional information, more detailed data on the specific material, connect it with the lectures, clarify certain incomprehensible aspects, direct students to the next active fulfilment of the practical task.

In practical sessions, various forms of programmed teaching methods and students' knowledge control should be applied, which would facilitate the orientation in the learned details of the structure of the body during shorter time with greater degree of identification. For the purpose of integration of the learning process with the accumulation of practical skills, in practical classes, students should make short abstracts, reports and other methods of researching anatomical preparations. It is important for the students to realize that in the process of studying anatomy they use Latin terminology, following the international anatomical nomenclature, which forms the basis of clinical terminology.

The integrated approach to teaching and students' knowledge control in modern conditions is fully justified, as it reflects attempts to apply the best methods of the classical education system and use new approaches.

During the academic year, a list of exam questions, a list of anatomical structures that the student must be able to demonstrate on the preparations, as well as test tasks, should be posted on the billboard and on the Department's page of the university website.

At the end of the second semester, students are required to take the test in the presence of a commission. This significantly mobilizes and increases the level of mastering very difficult and important material for future physicians. Such an intermediate control of knowledge will help students to generalize the material and assess the level of its assimilation. So, the traditional survey with the use of anatomical preparations at each practical session should be the most important part of the systematic control of students' knowledge.

The introduction of tests in the pedagogical process at the Department of Anatomy cannot replace the traditional gross specimen and the teacher of the department. The disadvantages of computer knowledge control include the fact that the student does not form his own answer, but only chooses it from among the ready-made alternative, such control may exceed or, more often, understate the student's actual level of knowledge. All that cannot be the basis for making final evaluations. Tests do not allow you to create a motivation for learning and do not disclose all the possibilities of anatomy in an applied aspect. The student, who limits himself only to studying

tests, loses the connection between the sections of anatomy, and one cannot expect from him the diversity and novelty of the study of anatomy from a practical point of view. The study of anatomy for him acquires a purely theoretical meaning.

However, testing should take a worthy place in the educational process at the Department of Human Anatomy. According to the results of the long-term use of the situational tasks of the «Krok-1», students remember better the development, topographical relationships, structure and functions of the organs in the aspect of the clinical situation; they will need this knowledge in further study of the material at the morphological and clinical departments. They activate the independent work of students in obtaining the required information, its development and interpretation. The advantages of using situational tasks also relate to the fact that they contribute to the interest in the subject, to the consolidation of the acquired knowledge, the independent work with literature, the ability to operate anatomical information and the creative approach to the analysis of morphological data, help the student to check the correctness of their anatomical skills in their clinical aspect, more deeply study the structure of the human body [7]. Tests should be formulated clearly and unambiguously, the questions should be formulated correctly in terms of linguistic norms, and the results obtained should be subject to objective and simple evaluation.

**Conclusions.** Efficient use and combination of traditional methods with various forms of integration of test control (but not prevailing!) is the methodically substantiated way of optimization and scientific organization of the educational process in the applied study of anatomy as the foundation of medicine.

This method of conducting classes and monitoring students' knowledge gives them an opportunity to learn as much material as possible and encourages them to process data of all sections of the subject by themselves which is necessary for obtaining the profession of a doctor in the future. It must be kept in mind that anatomy in the educational process is intended to be applied, basic discipline for medical specialties. We do not train anatomists, but educate future doctors. The understanding of the importance of anatomy for medicine is laid down by our predecessors: «A doctor – not an anatomist – is not only useless, but also dangerous». This postulate remains relevant today.

**Prospects for using the results.** The data obtained are the basis for improving the teaching human anatomy at the present stage and can have a recommendatory nature for allied disciplines.

### References

1. Sever I. Prepodavaniye distsiplini «Anatomiya cheloveka, topografycheskaya anatomiya» studentam mediko-profilakticheskogo fakulteta. *Mezhdunarodniy zhurnal prikladnikh i fundamentalnikh issledovaniy*. 2016;4:265-7. [in Russian].
2. Kovalchuk OI, Dzevul's'ka IV, Malikov OV. Klinichne napravleniia vikladanniia anatomii lyudini. *Vitchizniana ta svitova meditsina v umovakh suchasnosti*. 2013;15-8. [in Ukrainian].
3. Nikolenko V. Chto mozhet priblizit prepodavaniye anatomiyi k potrebnostyam prakticheskoy meditsini. *Sovremennye problemy nauki i obrazovaniya*. 2017;3:16-20. [in Russian].
4. Ostapyuk L. Optimizatsiya organizatsii navchalnogo protsesu na kafedrah universitetu iak vazhliva skladova vnutrishniiovuzivzkoii sistemi upravlinnia yakistiu. *Klinichna ta eksperimentalna patologia*. 2016;15,2(56):108-11. [in Ukrainian].
5. Tsibulkin A. Nekotorige problemi prepodavaniya anatomiyi cheloveka v meditsinskikh vuzakh. *Uspekhi sovremennogo estestvoznaniya*. 2010;3:99-100. [in Russian].
6. Gayvoronskiy IV, Nichiporuk GI, Tikhonova LP. *Sovremenniy podkhod k organizatsii uchebnogo processa na kafedre anatomiyi cheloveka. Zhurnal teoreticheskoi i prakticheskoi meditsini*. 2010;8:292-5. [in Russian].
7. Burlakova OO. *Vidtvorenniia vishchoi osviti Ukraini u Evropeyskomu osvitynomu prostori [avtoreferat]*. Kyiv: NPU; 2007. 26 s. [in Ukrainian].

## СУЧАСНІ ПРОБЛЕМИ ВИКЛАДАННЯ АНАТОМІЇ ЛЮДИНИ ТА ШЛЯХИ ЇХ ВИРІШЕННЯ

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**Резюме.** Для здійснення якісного навчання студентів анатомії людини необхідно ставити акцент на раціональному використанні і поєднанні традиційних методів з різними формами інтеграції тестового контролю. Через деталі вивчення будови органів на натуральних препаратах, в більш широкому їх використанні, доцільно виділення клінічних аспектів: впровадження в навчальний процес ознайомлення з даними різноманітних клінічних ситуацій на прикладі використання ситуаційних задач «Крок-1». Саме такий метод є методично обґрунтованим для оптимізації і наукової організації сучасного навчального процесу на кафедрах анатомії людини.

*Метою цієї роботи* було визначити суть і характер викладання анатомії людини в сучасних умовах, виявити недоліки і переваги сучасних підходів навчання, впроваджених в навчальний процес, та переосмислити традиційні методи навчання в сукупності з формами інтеграції сучасних методів.

*Методи і результати дослідження.* Ефективне використання та поєднання традиційних методів з різними формами інтеграції комп'ютерного тестового контролю (проте ніяк не превалюючого) – це методично обґрунтований спосіб оптимізації та наукової організації навчального процесу в прикладному вивченні анатомії як базису медицини. Цей метод моніторингу знань студентів дає їм можливість вивчити якомога більше матеріалу, а також стимулює їх до самостійної роботи, що необхідно для отримання професії лікаря в майбутньому.

**Ключові слова:** навчальна програма, іспит, натуральний препарат, клінічний аспект, тест, ситуаційна задача.

## СОВРЕМЕННЫЕ ПРОБЛЕМЫ ПРЕПОДАВАНИЯ АНАТОМИИ ЧЕЛОВЕКА И ПУТИ ИХ РЕШЕНИЯ

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**Резюме.** Для осуществления качественного обучения студентов анатомии человека необходимо ставить акцент на рациональном использовании и сочетании традиционных методов с различными формами интеграции тестового контроля. Учитывая детали изучения строения органов на натуральных продуктах, в более широком их использовании, целесообразно определение клинических аспектов: внедрение в учебный процесс ознакомления с данными различных клинических ситуаций на примере использования ситуационных задач «Крок-1». Именно такой метод является методически обоснованным для оптимизации и научной организации современного учебного процесса на кафедрах анатомии человека.

*Целью этой работы* было определить суть и характер преподавания анатомии человека в современных условиях, выявить недостатки и преимущества современных подходов обучения, внедренных в учебный процесс, и переосмыслить традиционные методы обучения в совокупности с формами интеграции современных методов.

*Методы и результаты исследования.* Эффективное использование и сочетание традиционных методов с различными формами интеграции компьютерного тестового контроля (однако никак не превалирующего) – это методически обоснованный способ оптимизации и научной организации учебного процесса в прикладном изучении анатомии как базиса медицины. Этот метод мониторинга знаний студентов дает им возможность изучить как можно больше материала, а также стимулирует их к самостоятельной работе, что необходимо для получения профессии врача в будущем.

**Ключевые слова:** учебная программа, экзамен, натуральный препарат, клинический аспект, тест, ситуационная задача.

## PROBLEMS OF TEACHING HUMAN ANATOMY AT THE MODERN STAGE AND THE WAYS OF THEIR SOLUTIONS

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**Abstract.** For quality teaching human anatomy to students, it is necessary to emphasize the efficient use and combination of traditional methods with various forms of integration of test control. Through the details of the study of the organs structure on natural preparations, with their wider use, it is necessary to distinguish clinical aspects: introduction to the educational process of acquaintance with the data of various clinical situations using the example of the use of situational tasks «Krok-1». This is precisely the way which is methodically substantiated for the optimization and scientific organization of the modern educational process at the human anatomy departments.

*Aim and tasks* of this work was to reveal the essence and characteristics of teaching human anatomy in modern conditions, identifying the shortcomings and advantages of the updated approaches to teaching, introduced in the educational process, and rethinking the traditional teaching methods with various forms of integration of modern techniques.

*Methods and results of the study.* Efficient use and combination of traditional methods with various forms of integration of test control (but not prevailing) is the methodically substantiated way of optimization and scientific organization of the educational process in the applied study of anatomy as the foundation of medicine.

This method of conducting classes and monitoring students' knowledge gives them an opportunity to learn as much material as possible and encourages them to process data of all sections of the subject by themselves which is necessary for obtaining the profession of a doctor in the future.

**Key words:** curriculum, examination, natural preparation, clinical aspect, test, situational task.

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