



APPLIED PEDAGOGY AND PSYCHOLOGY

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Abstract. The modern trend in medical education is to integrate fundamental knowledge in the field of science with its clinical application.

The most important feature of higher medical education in modern conditions is competence-based approach, the essence of which lies in creating conditions for development of academic, professional and social competences in students [5,6]. The process of doctor training becomes personality-oriented, with clinical orientation of cognitive activity [2]. In this regard, the main role of fundamental disciplines is aimed not only at the formation of students' system of knowledge, skills and abilities, but also a set of basic competences in intellectual, communicative, informational, professional and other areas. Innovativeness of educational work implies purposeful introduction of new methods and technologies into the educational process that contribute to effective learning. [11,12] This type of learning process focuses on introducing novelty into learning, conditioned by the peculiarities of the dynamics of life and activity development, the specifics of learning and the needs of personality, in the development of socially useful knowledge and professionally significant competences, character traits and qualities and behaviour experience among students [14,15].

At present, the problem of organizing forms of learning is one of the main ones in the theory of didactics and methodology of teaching disciplines. Although, in the history of pedagogy, the system of forms of learning organization has been known since antiquity, but the search for new learning technologies sets scientists even today the tasks of modernization of organizational forms of learning aimed at the formation of a creative personality [4].

The basis of methodological innovations today is focused on the application of interactive methods and technologies of education, which imply such an organization of the educational process, in which almost all students are involved in the educational process, have the opportunity to understand and reflect on what they know and think. The application of such active and interactive methods in the learning process, unlike traditional classes, where the student is a passive listener, is based on the involvement of all students of the group without exception, with each of them making their individual





contribution to the task set by means of active exchange of knowledge, ideas, ways of activity [3].

Teaching methods can be divided into three generalised groups:

- passive (traditional) - a learner acts as an "object" of training (listening and

In the traditional teaching model, students are offered to assimilate large amounts of ready-made knowledge [13]. In this case, there is practically no need to develop projects, which are based on learning activities with other students.

- active - student is a "subject" of learning (lecture, independent work, creative assignments). The active method should be understood as a form of interaction between students and teacher, in which teacher and students interact with each other during the class and students are not passive listeners, but active participants of the class. While a passive method implies an authoritarian style of interaction, an active method is focused on a democratic style.

- interactive - interaction. The use of the interactive method implies simulation of life situations, the use of role- playing games, and joint problem solving. There is no dominance of any participant in the learning process or any idea. From an object of influence the student becomes a subject of interaction, he/she actively participates in the learning process, following his/her individual route [10].

Innovative educational technologies (hereinafter referred to as IET) are technologies focused on the creation and use of such forms of learning activity organization, where the emphasis is placed on the forced activity of the learner (not doing) and on the formation of systemic thinking and the ability to generate ideas when solving creative tasks [1,2].

The successful mastering of competences (according to FSES) is difficult without the use of innovative teaching methods (educational technologies) such as business games, thematic quests, workbooks, case studies, virtual experiments [9].

Keywords: innovative educational technologies, competences, active methods, interactive methods, methodological innovations.

Materials and methods:

Experimental modelling is the key method of pathological physiology. Teaching theoretical material on the basis of illustrative examples is a fundamental methodological technique of medical educational activity.





The purpose of the application of educational technology of the educational discipline is improving:
the quality of training by developing creative potential,
-analytical thinking, communicative skills
-capacity for self-learning in order to increase the level of formed competences
-Personal growth during the whole period of study and in the future professional activity
The objectives of the educational technology of the training discipline are:
-analysis of the problem situation
ability to express one's own opinion based on arguments
ability for independent learning
improvement of practical skills

Pathological physiology is a science that studies the most common patterns of occurrence, development and outcomes of pathological processes, typical pathological processes and diseases. The main purpose of pathological physiology is to establish the most general patterns and laws that guide the development of pathological processes and disease. The subject (object) of pathology study is human disease.

Virtual experiment (simulation technology). Following the concept of humane use of animals and alternative methods of teaching in education, promoted by the International Society for Humane Education "InterNiche", European Coalition for the Eradication of Experiments on Animals, in the educational process it is also possible to use educational video films with the experiment on the subject of the discipline "Pathological Physiology".

Let us demonstrate the use of a virtual experiment in a classroom lesson on "Pathophysiology of the nervous system".

Stages of the session based on the results of the virtual experiment
Process of the lesson:

- Introductory part of the lesson (10 min.) The practical importance of the theme of the lesson in the system of training for professional activity is revealed in order to develop a motive and, consequently, activation of cognitive activity of students.
- The main part of the class (60 min.) Getting acquainted with the methodology of the virtual experiment, completing the tasks of the experiment, completing the record, presenting the results for evaluation, evaluating the performance of tasks in the record, solving problems that arose during the



performance of tasks in the form of discussion (moderator - teacher), the final control.

Assessment of individual achievements, identification of individual and typical mistakes and their correction.

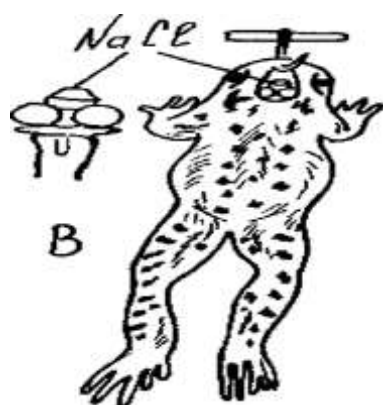
Objective of the lesson. To study typical disorders of the nervous system. Methodology

The anaesthetised frog had its brain exposed and was wrapped in a bandage so that its index finger could hold its head.

A transverse skin incision was made behind the nasal foramen. From the edges of the transverse incision, lateral incisions were made along both sides of the skull. The resulting trapezoidal skin flap was folded downwards.

A transverse cranial incision was also made behind the nostrils. Carefully open the cranial cavity so as not to damage the brain.

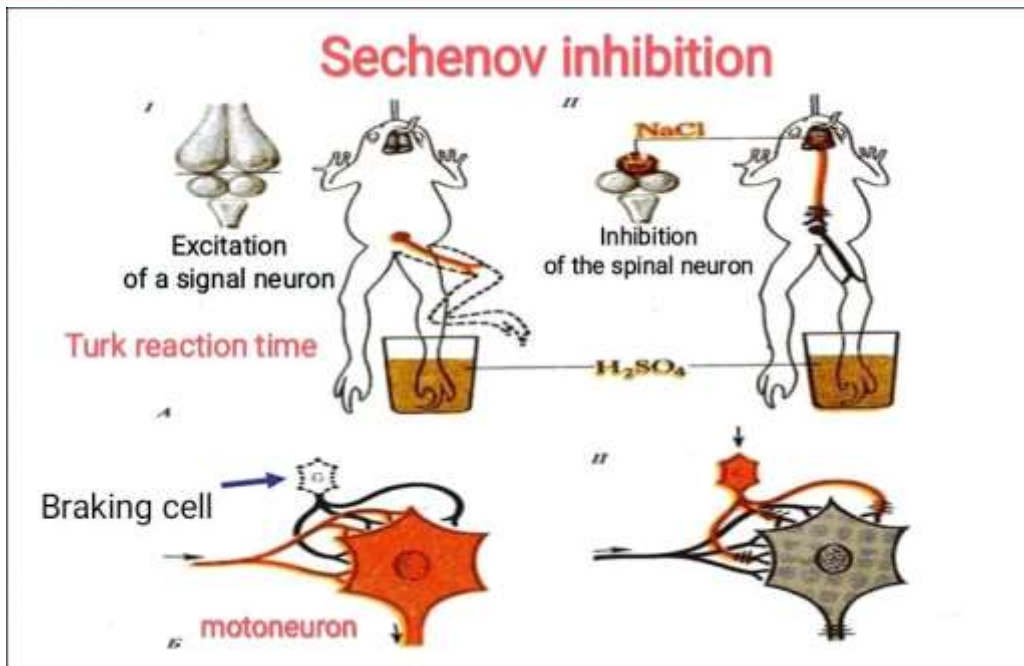
After opening the cranium, the brain was transected along the posterior edge of the large hemispheres (Sechenov incision), leaving the optic tuberosities undamaged.



Suspend the frog on a tripod and after 5 - 7 min, determine the average Turk reflex time by dipping the toes of the hind paw into a 0.5% sulphuric acid solution.

Carefully dry the surface of the brain slice with small cotton wools or filter paper. Place a crystal of table salt on the slice of the optic tuberosities.





Determine the reflex time 1-2 minutes after placing the salt crystals several times and record the results.

Once a significant increase in reflex time has been recorded, remove the salt crystals from the surface of the brain and wash off the salt crystals with physiological solution. Hold the frog with its head downwards. Determine the reflex time again several times. Note the gradual return of the reflex time to its original value.

The indicative action framework (OOD) for the students' independent work during study time is the evaluation of the peculiarities of the development of the pathological process depending on the state of the organism's nervous system in the experiment.

Concluding part of the lesson (20 min.). Summing up the session. Evaluation of the students' activities, defining the objectives of the lesson as a result of the experiment. Evaluation of the level of competence formation of students is carried out on a point-rating system.

Results. Throughout the educational process the general professional competences of the students are being formed and developed. Training of pathophysiological analysis of data on pathological processes, clinical syndromes and diseases using the knowledge of general laws of their origin, development and their outcomes takes place.

Conclusions. Improving teaching methods today is achieved through the use of innovative methods of active and interactive learning and information technology.



The introduction of innovative methods of teaching, together with the improvement of traditional pedagogical technologies, will optimize the educational process.

Interactive learning in the classroom when teaching the discipline "Pathological physiology" is an effective and popular way of interactive learning for students, which contributes to the development of all groups of competencies and the formation of the foundations of clinical thinking [7,8].

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