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## FORMING OF CLINICAL THINKING BY STUDENTS OF HIGHER EDUCATIONAL MEDICAL ESTABLISHMENTS

*The purpose of studying at a medical university is to provide professional erudition, development of clinical thinking, students' formation of the skills necessary for the examination and treatment of patients. Requirements to the quality of professional training of a future doctor, developed in modern conditions, can be implemented on the basis of the formation of her clinical thinking, as a cognitive part of his knowledge. Clinical thinking is formed in the process of technical training of the future physician, speaking of its result and essential description of professional thinking in general.*

*One of the most promising areas of creative abilities of a person, necessary for the future physician, is problem education. Problem learning – to teach non-standard tasks in which students learn new knowledge, skills and abilities.*

*The formation of clinical thinking plays an important role in the use of game methods in the educational process – situational tasks and business games with the solution of practical issues of therapeutic cardiology, diagnostic, expert, preventive and other aspects.*

*In the practice of teaching at the Department of Internal Medicine, Physical Rehabilitation and Sports Medicine, several variants of clinical role-playing games were most effective. The first type of game: "doctor – patient", the second type – "consilium", the third type of clinical role-playing – "chamber doctor". This is the main form of a clinical game that develops the conditions of an intellectual professional activity of a physician whose main purpose is to diagnose a patient and treat a patient.*

*The statistical results showed that this material was studied by 20% in lectures, 75% in the discussion and 90% in playing business games. The use of active technologies and teaching methods in higher education institutions of medicine allows successfully developing professional and cultural competences, stimulating and intensifying cognitive activity of students, developing effective clinical thinking.*

**Key words:** *students, clinical thinking, problem education, business games.*

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## **ФОРМУВАННЯ КЛІНІЧНОГО МИСЛЕННЯ У СТУДЕНТІВ ВИЩИХ НАВЧАЛЬНИХ МЕДИЧНИХ ЗАКЛАДІВ**

*Мета викладання у вищих медичних закладах полягає у формуванні та розвитку в студентів клінічного мислення, навичок, необхідних для обстеження і лікування пацієнтів. У формуванні клінічного мислення велику роль відіграє використання в навчанні імітаційних методів – ситуаційних завдань і ділових ігор із вирішенням практичних питань лікувальної тактики, діагностичних, профілактичних та інших аспектів. Наше дослідження продемонструвало, що інформаційний матеріал у вигляді лекції засвоюється на 20%, на 75% – під час дискусії і на 90% – під час проведення ділових ігор.*

**Ключові слова:** *студенти, клінічне мислення, проблемне навчання, ділові ігри.*

**Introduction.** In doctor work there are elements of the specific professional (medical) thinking. High mental abilities (intellect) belong to that doctor, who is able to analyze and synthesize of the supervisions, who can be correct in diagnostics and treatment. The foundation of high-class workmanship – high doctor proficiency – is formed in a medical cradle – “alma mater”, because “Nemo nascitur sapiens” (“Ніхто не народжується мудрим”). The clinical thinking is the professionally-systemic thinking that will realize initial mental operations: analysis, comparison, synthesis and generalization in the medical diagnostics, the therapeutic and creatively-technological prognostication and final: decision-making, control and estimation – in the aspect of processes of treatment and psychological co-operation of doctor with a patient. According to the specific of medical activity, given mental operations acquire professionally-original expression – as symptom-complex analysis, theoretical and practical-clinical comparison, theoretical generalization – character, practical generalization – character, decision-making, reflex-estimation control.

**Methods.** The following methods were used conduct research: 1) three forms of problem education (problem teaching of educational material in lectures or seminars; research activity at experiment on laboratory works; independent research activity); 2) method of situational analysis that includes analyses of concrete situations (situational tasks, situational exercises); 3) method of roles playing.

**Research analysis of the problem.** The task of modern research of active technologies and teaching methods in higher educational medical institutions is more or less laid down in the works of modern scientists of their country and abroad: Fitsula M., Levin K., Rogers K., Vachkova I., Khazratova N., Andreev V., Basova N., Brushlinsky A., Amirov A., Kudryavtsev V. Makhmutov M., Marushkevich A., Gereles L., Khutorskoy A.

The **purpose** of this research consists in developing of professional erudition, development of clinical thinking and forming by students the skills, necessary for a therapeutic inspection and diagnosticating.

**Results and Discussion.** To our opinion, requirement of the quality professional preparation of future doctor, which was pulled out in modern terms, can be realized on conditions of forming in him clinical thinking, as cognitive part of his proficiency. Clinical thinking is formed in the process of technical preparation of future doctor, comes forward as its result and essential description of the professional thinking in general.

An orientation of clinical thinking simultaneously on discover of complex of destructive valeological

situation in people’s life, their transformation on the basis of complete recreation of scientific knowledge and experience, and in lack of time have the ability to give to the mental operations integral-content sense, – found their reflection in organization of educational process on the department of internal medicine, physical rehabilitation and sporting medicine.

According to our deep persuasions, today in educational process it is not acceptable: the frontal forms of organization of classes, in which the “wall” divides teachers and students and where the teacher has got the role of judge, passes judgement; such forms of knowledge control, which comes simply to recreation of earlier studied material; low activity of students during classes, when they fix most of the time on educational material, lacking initiative of students thinking, who give priority simple memorizing of the material in getting of strong knowledge.

One of the most important problem, which stands before the our department is upgrading of specialists’ preparation. In accordance with it, the main purpose of educational program of medical profile is formation of future doctor competence (cognitive, operational, law competence as well as self-education competence), that’s why development of professional, intellectual skills by implementation of innovative methods is objectively conformity to law (Oder MES Ukraine, № 454).

One of the most perspective directions of personality creative skills, necessary to the future doctor is problem education. Problem education – to teach solving of the non-standard tasks, in which students study new knowledge, skills and abilities (Amirov Amirova, 2014: 45; Phizula, 2010: 23). The main result of this method is forming of student professional thinking. Problem education forms in specialist ability to see independently and set forth the problem, ability to suggest a hypothesis, find or invent the verification method, collect data, analyze them, offer the method of their analyzing, ability to see the problem in general, all the aspects and stages of its solving, and in group work – to define the degree of personal participating in solving the problem.

Problem education is in that the teacher does not give ready material, but put before the student the problem tasks, inducing to search ways and facilities in their solving. To solve the problem, you need creative thinking. In modern pedagogics three forms of problem education are practiced: problem teaching of educational material in lectures, or seminars; research activity at experiment on laboratory works; independent research activity.

Upgrading, efficiency of students’ education directly depends on ability correctly select and use

different, the most adequate to these subjects and situation methods of education (Maryschkevich, 2005: 49). These active methods of education develop in students critical and clinical thinking, form of experience of creative and innovation activity, perfect competences, teach to work in advance, stimulate development not only students but teachers as well. It is marked, that when we use active methods of studies, students keep in their mind 80% of what they told by themselves and 90% of that, what they did by themselves.

Among innovative technologies, which are implemented in pedagogical activity of the department of internal medicine, physical rehabilitation and sporting medicine, the most often used: method of situational analysis that includes analyses of concrete situations (situational tasks, situational exercises) and method of roles playing. Analysis of concrete situations – one of the most effective methods of organizing of active cognitive students' activity (Phizula, 2010: 67). He develops ability to analyze the vital and professional tasks. Facing the concrete situation, a student must define: whether it has the problem, what it consists of, define his attitude to the situation, propose variants in solving the problem. Working in group from the analysis of situation, allows the students not only remember the material better, but to examine different possibilities and approaches in the solving different practical tasks or problems.

In forming of the clinical thinking a large role is played by the usage in educational process of playing imitation methods – situational tasks and business games with solving practical questions of treatment-cardiologic tactics, diagnostic, expert, prophylactic and other aspects.

Statistical results, which were made on the department of internal medicine, physical rehabilitation and sporting medicine showed that the given material was excepted by 20% on lectures, by 75% on discussion and by 90% on playing business games.

Common goals of business games in medicine: immersion of students in the atmosphere of intellectual activity, close to professional practical doctor work in diagnoses diseases and treatment of patients; creation by the players dynamically changeable picture depending on correct or incorrect actions and decisions; forming of ability to make differential diagnostics by a short way for limited time and appointing of the best treatment by the simplest and affordable methods; ability to create optimal psychological climate in talking to patients and colleges; development of skills of effective work in the conditions of primary medical link in a role of

district doctor; as control of professional preparation serves as a barrier on the way to the bed of patient, skipping to the patient only professionally prepared.

Business games have enormous educational and developing possibilities. Firstly, they model conditions of professional activity, so in business games necessary abilities and skills are formed for professional functions and it gives the opportunity to shorten a break between the theory and practice. Secondly, emotionally-creative searching character of business game serves as the didactics means of development of the creative, professional thinking that shows up in a capacity for the analysis of clinical situations, in a clearness and validity of decisions, ability effectively to co-operate with a partner. Thirdly, a business game exposes personality potential of student: ability to occupy active position, test itself on a professional fitness and also to forecast own possibilities. Similar classes train to independence, initiativeness, cause sense of satisfaction and confidence in itself.

Business games can be one-sided, when all players aspire only certain goal to the achievement; bilateral, when different parties try to settle a situation in their own benefit; multilateral, when it is necessary to organize the difficult co-operating of players with competitive and mutually exclusive interests. Plugging the games in the educational process does the process of studies happy, emotionally gap-filling. Competition, the change of types of activities in playing form revives perception, assists stronger memorizing of educational material, enriches the process of studies, operating on principle: "Tell me - and I will hear. Show me – and I will memorize. Attract me – and I will understand".

In practice 3 variants were the most effective. First type of a game: "a doctor – a patient". It is a basic form of clinical game, that designs the terms of the intellectual professional activity of the doctor, the main purpose of which is to diagnose the disease and treatment of the patient. As a rule, a game played off in pairs. Participants distribute among themselves roles: doctor and patient. Maybe by turn implementation of roles. A teacher formulates a task for a "doctor" and "patient". Second type – "consillium". This game differs from others that not only doctor-counsel participate in a game, but consultants as well. Formally, it is a role play, where different players carry out the roles of doctors of different specialties and level of preparation. The third type of clinical role play – "chamber doctor". In this game a chamber doctor conducts a few patients. Thus for the design of the most real situation each of these patients is on the different stages of inspection and treatment.

This game can be simpler or more difficult, depending on whether chamber doctor deal with cardiologic patients or many profiled.

**Conclusions.** Advantages of business game before other types of studies consist in that a business game imitates the real situations in a future profession, so develops ability to search and work with information, allows considerably to activate creative possibilities

of student. Gives an opportunity to study on their own and others' drawbags without harm for a patient.

The use of active technologies and methods of studies in higher educational medical establishments allows successfully develop professional and cultural competences, to stimulate and activate cognitive activity of students, develop effective clinical thinking.

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