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ANNA FASTIVETS

ORCID: 0000-0001-6333-5519

(Полтава)

Place of work: Poltava Institute of Business PHEE «ISTU»

Country: Ukraine

E-mail: anna_fast@ukr.net

OLENA KOLESNYK

ORCID: 0000-0001-9140-9829

(Полтава)

Place of work: Poltava Institute of Business PHEE «ISTU»

Country: Ukraine

E-mail: kolesnik_o_v@ukr.net

THEORETICAL CONCEPTS OF METHODOLOGICAL SYSTEM OF EDUCATION OF PHYSICAL THERAPISTS TO BE

Анотація. У статті розроблено та теоретично обґрунтовано методичну систему підготовки майбутніх фахівців з фізичної терапії у вищих навчальних закладах. Для досягнення мети нами використано комплекс методів дослідження, зокрема, теоретичних: історико-порівняльний і логічний, термінологічний, кількісно-якісний (бібліометрія), узагальнення, аналізу й синтезу, моделювання; емпіричних: спостереження та опитування. Пропонована система включає положення діяльнісного підходу; положення когнітивної теорії про типи моделей пізнавальної діяльності, зокрема розгляд навчання як процесу формування мислення; ідею компетентнісного підходу щодо можливості об'єктивної кількісної оцінки якості рівня готовності за обґрунтованими цільовими орієнтирами освіти; концепцію колективного способу навчання, сутність якого полягає у створенні умов для обміну інформації, знань, досвіду між здобувачами освіти; концепцію проблемного навчання, основна ідея якої полягає у набутті знань і вмінь у процесі пошуку шляхів вирішення професійних проблем.

Ключові слова: фізичний терапевт; медична освіта; методична система підготовки фізичних терапевтів; діяльнісний підхід; компетентнісний підхід

Resume. Introduction. In epoch of global social, economic and demographic crisis a problem of the health level of the population, its maintenance and increasing becomes more relevant. It is a sociomedical problem that requires an immediate solution. It causes a need for the development of a system of education of physical therapists to be.

The **aim** of the study is to develop and scientifically prove the theoretical concepts of methodical system of education of physical therapists to be.

Materials and methods. To secure the aim a set of research methods is used. In particular, the authors used theoretical methods: historical-comparative and logical, terminological, quantitative-qualitative (bibliometry), generalization, analysis and synthesis, modeling; empirical: observation and interview.

Conclusions. The authors developed and theoretically proved the methodical system of education of physical therapists to be at higher educational institutions. The system includes the principles of active approach; the ideas of cognitive theory about the model types of of cognitive activity, in particular the idea that an education is a process of formation of thinking; the idea of competence approach about the opportunity of objective quantitative assessment of the level of readiness according to the proved targets of education; the conception of collective education the essence of which lies in creating of specific conditions for exchange of information, knowledge and experience of the students; the conception of problem education the essence of which lies in acquiring of knowledge and skills in process of professional activity.

Keywords: physical therapist; medical education; methodical system of education of physical therapists; active approach; competence approach

Introduction. Life and health of a person is the most important social value of the modern civilization. Social need for maintenance, recovery and improvement of population's health as well as the desire for being healthy leads to a demand for the specialists who can improve psychophysiological status of a person using not only medical means but physical training ones as well. This kind of an influence increases the speed of recovery, ensures the maximum possible recovery of lost functions, maintains and increases the level of health of the population.

That's why a branch of physical therapy develops fast in Ukraine and defines the need for conforming specialists. Elucidation of a question of the development of a system of education of physical therapists to be demands the determination of the forms of scientific knowledge (theories, conceptions, approaches, ideas, etc.). The result of our research is the conclusion that the education of physical therapists should be based on the principles of active approach (a theory of activity), cognitive education theory, competence approach, conception of problem and collective education.

The **aim** of the study is to develop and scientifically prove the theoretical concepts of methodical system of education of physical therapists to be.

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Results. According to the ideas of active approach, the activity of a person is based on structure and level principle, under which, firstly, the general structure of the activity is formed by different qualitative levels, forms of psychic control of human activity; secondly, these levels follow hierarchy and form an integrated system (Леонтьев, 1975).

O. Leontiev distinguishes three main levels of organization of activity. They are the operations, actions and autonomous activity.

The first (operational) level represents the human activity as unconscious (automatic) psychic operations. The subject level includes conscious, well-directed actions, aimed at goal achievement. Assurance of level is defined by goals of separate actions and conditions under which they are realized. Thus the activity of a person is the combination of separate actions.

The third (autonomous) level is an independent activity which correlates with the needs and motivation of the subject and does not correlate with conditions and goals.

Separate types of activity are integrated into the fourth level of activity regulation which represents the original order of types of human activity: desires, abilities and behaviour (Ковальчук, 2009).

All mentioned levels show the principles of formation of professional skills of the students in process of education. In particular, from their definitions appears a fact that the final result of the activity is the achievement of the goal that is the qualitative rendering of rehabilitation services of social importance.

In our opinion, the ability to cooperate and introspect, educational skills and obtaining new information of professional importance is possible with considering the conceptions of collective education.

The essence of conception of collective education lies in creating of specific conditions for exchange of knowledge, skills and experience between the competitors for education. The interaction in educational process is considered to increase a level of quality of perception and interest.

A conception of collective education is aimed at digestion of knowledge and development of communication skills. A collective education ensures the results indicated in curriculum and promotes the adaptation to professional activity. It is worth noting that top efficiency of collective education is provided by simultaneous use of four forms of education: collective, group, pair and individual (Кузнецова, & Болдакова, 2017).

In our research the collective education is considered to be appropriate for formation of motivation for education, self-education skills and professional self-actualization, increasing of a level of communication skills and enabling the opportunity for continuous increasing of a level of theoretical and practical knowledge.

The next form of scientific knowledge considered to be a basis for structuring of the process of education of therapists to be is a cognitive approach. Taking into consideration the principles of this approach is conditioned by modern tendencies of moving from simple memorization to instruction in thinking.

J. Comenius, D. Millier, U. Neisser, N. Chomsky and others represent the cognitive approach. Works by these authors contain the description of the process of obtaining of information by means of symbol manipulation, means of keeping it in memory, mechanisms of recollection, formation of self-control as a result of person's interaction with society. At the same time the researchers set their mind on proving the crucial role of knowledge in process of education.

The analysis of scientific sources shows that a cognitive approach is quite appropriate in the following aspects:

- formation of ability to think critically;
- formation of ability to analyse the facts and make value judgements;
- formation of logic connections;
- ability to distinguish the facts and concepts;
- ability to single out the facts and suggestions;
- ability to evaluate the facts, phenomena, etc.

The essence of the approach lies in formation of ability to acquire and learn information. It is realized by the means of realizing and comprehension of theoretical knowledge.

One of the objects of cognitive approach is the development of thought and speech activity of the students. It results in development of ability to acquire and comprehend verbal information; critical thinking; ability to use information as well as ability to exchange views.

A crucial component of cognitive theory is a possibility of formation of search skills by means of formation of ability to examine the sources of information and self-education skills.

The main principle of cognitive approach which we follow developing the methodic basis of education of physical therapists to be is considering the education to be a process of formation of mentality as the ability to perform intellectual operations (analysis, synthesis, correlation, establishment, etc.). It can help to increase a level of the most essential cognitive skills of physical therapist such as:

- attentional – the ability to stay focused in spite of tiredness and external stimuli; ability to allocate attention to fulfilling a few tasks at the same time; high level of active attention span;
- intellectual – high level of analytical, creative and intuitive thinking in process of activity, review and operating with information, coming to the right conclusion under the scarcity of information or the lack of time for its comprehension;
- mnemonic – memorization, identification, reproduction of information, accuracy of reproduction in time, ability to determine a problem, pathological changes or lack of progress in health recovering with the small number of characteristics; high level of active attention span; ability to keep in mind the information during a long time; active memorization;
- imaginative – ability to visualize a new problem solving or carry out traditional treatment under new conditions; ability to arrive at new non-stationary solutions and forecast the result; ability to find a few ways of situation development and choose the most effective way of problem solving;
- volitional – ability to mobilize, being selfdisciplined; self-control; taking responsibility (Алборова, 2017).

The mentioned essential professional skills match with the competences indicated in the standard of higher education of the specialty 227 «Physical therapy, ergotherapy»:

- ability to solve complicated special problems related to physical therapy and ergotherapy which are characterized by complexity and uncertainty of conditions using principles, theories and methods of biomedical, social, psychological and pedagogical sciences;
- knowledge and comprehension of subject area and professional consciousness;
- ability to search, process and analyse information from different sources;
- ability to study and mastering new knowledge;
- ability to put knowledge in practical use;
- ability to analyse body constitution, regular and individual development of human organism and its moving function;
- ability to interpret pathological processes and use the appropriate means of physical therapy and ergotherapy to correct them;
- ability to adapt own practical activity for variable conditions, etc. (*Стандарт вищої освіти*, 2006).

In addition, the above-mentioned professional skills of physical therapist require practical ability to take action in non-standard situations. That's why it is obvious that there is a need for assurance of knowledge and skills in process of solving of problems which can emerge in process of professional activity. A basis for the organization of the process of formation of professional readiness of physical therapists to be is a conception of problem education.

A problem education is a form of organization of interaction of educators and students aimed at creation of problem situations and contribution to their solving by students in process of education.

Appropriateness of problem education is conditioned by the fact that information obtaining does not contribute to formation of professional readiness of the students. The traditional system «knowledge to problem» does not form a belief about professional activity under real conditions.

An issue of problem education is considered in the works of J. Bruner, F. Diesterweg, J. Dewey, I. Lerner, J.-J. Rousseau, K. Ushinsky and other researchers.

An essence of problem approach lies in the idea that an educator does not offer information that is ready to use; the problem tasks and a process of their fulfilling arise an unusual degree of interest in research and cognitive activity. New information is offered only for fulfilling of specific task.

Problem solving requires creative thinking, but not for reproduction of schemes, models, algorithms. Activation of creative thinking and motivation comes in process of collective fulfilling of tasks (subject-subject relations).

A success of problem education is supported by logic and content of educational process. An important characteristic of problem education is a reflection of objective contradictions due to which it is considered to be developmental one as it is aimed at generation of knowledge and development of ability to put them in practice (Буланова-Топоркова, 2002).

In problem education information is usually interpreted after attempts of the students to accomplish a problem task. It contributes to the satisfaction of need for new information and cognitive interest. Data interpretation is also based on individual approach and has to show new information (rule, approach) in case when a student arrived at the right solution to the previous task (Курлянд та ін., 2009).

Since problem education is aimed at the formation of critical and logical thinking of the students as well as the ability to improve knowledge and skills it ensures the integration of characteristics of professional importance into a process of education of physical therapists to be. These characteristics are: active development of knowledge and ability of putting them in practice by specific problem solving; formation of creative thinking for variant problem solving; development of ability to communicate and interact; motivation for professional activity by interest in the necessity to fulfil the tasks (Ягупов, 2002).

The formation of professional thinking skills in process of education of health care specialists is of great importance for rehabilitation, maintenance of health and capacity for work. It provides the opportunity for independent updating of knowledge and skills, increasing of professional level and search for the most effective ways to solve a problem.

A final stage of any educational process is determination or assessment of the level of education quality. To perform this task we work on a basis of the idea of competence approach about the opportunity for the objective quantitative assessment of the level of readiness using the data on valid targets of education.

Discussion. A competence approach is an approach the results of education in which are considered to be important out of the educational system.

It provides for the distinct structure and sequence of the components of education of specialists to be. It is well known that the formation of readiness of specialists to be is the chain of the following components: development of general competencies – general knowledge and skills – development of applied skills – development of ability to put knowledge and skills in practical use.

The essence of competence approach lies in the aiming of educational process at specific purpose which constitutes the formation of professional competences. This purpose includes the ability to use knowledge and skills in process of professional activity, development of specific knowledge and skills which form professional readiness, teaching of effective problem solving, etc.

Competence is usually understood as a combination of characteristics which demonstrate a level of actualization of knowledge, skills, views, responsibility. Thus it is a set of specific requirements for the skills which are formed in process of education (Буренко, 2012).

I. Zymnia, A. Khutorskyi and other researchers assert that a professional competence is an actual appearance of a complex of general competences which determine its essence. The researchers consider a professional competence to be an activity of a person based on the knowledge, skills and experience. At the same time general competences are considered to be the qualitative components which show a level of personal ability to put own experience, knowledge and skills in practical use under specific conditions. It is worth noting that the general competences are considered to be developed in contrast to professional competences (Хлебнікова, 2009).

One of the concepts of competence approach is professional competence as a complex development of knowledge, skills and personal characteristics in process of professional activity. The above-mentioned characteristics do not form a system of components, but form an integrated concept (Царенко, 2017).

Conclusions. Thus, according to the competence approach the education results in the formation of professional competence. In our research a professional competence is considered to be a readiness to put knowledge and skills in practical use under real and variable conditions with the means of physical training technologies.

We believe that the use of above-mentioned scientific approaches and forms of scientific knowledge is sufficient for the development of effective model of the process of formation of professional readiness of physical therapists to be as well as for the development of educational conditions and methodical guidance for educational process.

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