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Pedagogical Potential of Discipline Logic in the Development of Student Thinking Culture

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ABSTRACT

Considering the culture of thinking development in a pedagogical context, it should be noted that during an individual development, a person learning concepts historically shaped by a humanity, does not spontaneously perceive and remember them. Acquisition of knowledge requires any mental activity, corresponding to the content of concepts. The aim of the article is to justify the development of a student thinking culture of a high school in the course of studying humanitarian discipline logic and to identify the main features, criteria and indicators of university students thinking culture development. The leading methods of research are: a) the theoretical analysis of philosophical, psychological and pedagogical literature; b) study; c) synthesis of advanced pedagogical experience, which allowed to substantiate the prognostic value of the pedagogical potential of the discipline logic in the students thinking culture development and an introduction to the student's curriculum of humanitarian course of logic. The following criteria were identified: motivational-axiological (degree of awareness of the students the value of thinking culture); cognitive (the degree of awareness of operations and methods of thought activity); the operational (the nature of the operations and of intellectual activity techniques acquisition and skills to produce rational actions on their application in the educational and extracurricular cognitive processes) and personal (maturity of a reflective position, the degree of mind efficiency and the ability to solve problems creatively). The following provisions have been proved: methodological basis (it constitutes a dialectical and formal logic, the laws of non-contradiction and of the excluded middle); psychological basis (the definition of leading role of receptive kinds of communicative activity in a thinking culture development in a process of logic teaching); logical basis (adoption of logic as a necessary attribute of social life, which is also a way to communicate between different groups of people).

KEYWORDS
Pedagogical potential, development of student thinking culture

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Introduction

The current socio-economic situation in our country determines the new direction of development of the educational system, among them, the task of achieving a high performance training and personal development in higher education, qualitative

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preparation of high school student, able to comprehend and generate innovative ideas in a chosen profession, to solve actual professional and socio-cultural problems thinking outside the box is brought to the forefront. Therefore, high school is designed to train and educate young people on the basis of the real requirements of life, taking into account the emerging political and socio-economic prospects of the development of society in order to rise above the rather conservative system of views on life and be able to respond to the challenges of today adequately.

Pedagogy and psychology, as we know, has a sufficient understanding of the formation of the theoretical and practical, productive and reproductive thinking of students Moreover, there is a holistic concept of problem-based learning as a means to develop their own culture of thinking in the process of acquisition of knowledge. Here, we refer such important mode as critical thinking, the search for optimal forms and methods of teaching of which a lot of researchers are turning today. Thus, the various aspects of pedagogical cooperation aimed at developing a brainwork culture of students can be found in the works D.B. Bogoyavlenskoy (1983), A.M. Matyushkin (1972), M.I. Makhmutova (1975), N.A. Menchinskaya (1966), G.I. Zhelezovsky (1993) and others.

Among the key competencies required for a successful post-graduate professional activities, an important place is given to the student culture of thinking, the development of which is put forward as a priority task of the higher school.

Analysis of the source base on the problem of the formation of a culture of thinking shows that, despite the rather considerable coverage in many studies, its theoretical aspects and practical conclusions need rethinking and correction in accordance with modern conditions of development of the domestic school. It is obvious that at the present time there is an objective need for new studies to identify pedagogical conditions of high school students' culture of thinking formation in the process of studying humanities. The study of high school practice shows that the level of development of students' thinking culture does not meet the requirements of the labor market to senior professionals. One important reason for it is the lack of attention to the development of a culture of thinking in the study of academic disciplines. The culture of thinking is an important component of the general culture of a person, because in essence it acts as a certain level of development of a person's ability to adequate reflection in various mental forms of objective logic of life and his own existence. The universality of the human mind, in this regard, is a necessary condition of culture and human existence in general.

Literature Review

It has long been an axiom that the emphasis in teaching should be on the development of a young man thinking, in order to teach him to consider studied spheres analytically, which supposes the evidentiary nature of any reasoning. Thus, the intellectual development of a person is defined in our time is not by the volume of knowledge and ever-increasing volume of scientific information, but the willingness of the individual to the selection of necessary knowledge through critical analysis, interpretation of information and the ability to make decisions independently. And the successful implementation of these requirements depends on purposeful formation of culture of thinking of young people in the course of their training. And this, in turn, suggests that the process in the course of educational activity takes a complex, dynamic and sufficiently long-term character, the essence

of which lies in the psychological and pedagogical impact on the student's personality in order to ensure the development of the culture of his thinking in the framework of higher education in today's complex conditions of market economy functioning.

The ultimate goal of the specialist training in this aspect is the thinking formation that would adequately and promptly respond to situations arising in a rapidly changing world. Despite the difficulties in learning of some pretty abstract, and, at first glance, do not have anything common with a real life, issues (for example, the modality of judgment or advanced forms of logic statement formulas) students must study the basics of modern formal logic patiently and persistently. But logic, as you know, is mainly interested in the question of the most common characteristics of correct thinking (certain properties, consistency, consistency and evidence), acting in its turn, as the content of the basic laws of logic, expressing the most common properties. Therefore, the correct way of thinking as an indicator of the development of thinking culture is characterized by such features as certainty (clear, precise, free from ambiguity thinking); consistency and coherence (thinking, not allowing contradictions, violating a link between thoughts) and argumentativeness (thinking, formulating the truth and putting forward the grounds on which it is recognized as a true).

Hence, a necessary condition for correct thinking and, consequently, its certainty, consistency, consistency and argumentativeness is a strict compliance with the basic laws of logic thinking - the law of identity, the law of non-contradiction, the law of excluded middle and the law of sufficient reason. Most of these laws are called basic because they represent the most common and necessary conditions of not only the logical correctness of any particular link between different forms of thinking, but also the very possibility of thinking as a cognitive activity. Formal logical laws of thinking in terms of content are objective, independent of human consciousness. Gradually formed as a result of social and productive human practice, they are used by him to improve the culture of thinking, identifying and eliminating logic errors. Knowledge of thinking logic laws is a requirement for the proper organization and regulation of a thinking culture itself.

A component of the term "culture of thinking" is the concept of "thinking", which is a property of the brain, in our case - a human brain. Thinking is the process of creating each time a new information unit required to a person (as well as another living being) for the implementation of the action. Hence the concept of "thinking" becomes the object of study of various branches of knowledge, as a subject of study of the theory of knowledge, logic, psychology, neuroscience, pedagogy, cybernetics, and others.

While thinking has as its sole source the sensations, it transcends boundaries of the direct sensory reflection and allows to obtain knowledge of such objects, properties and relations that cannot be perceived by man directly.

Analysis of the psychological literature shows that thinking in the context of psychology is seen as an indirect reflection of the external world, based on the impressions of reality and enables a person depending on the acquired knowledge and skills handle the information correctly to build his plans and behavior programs successfully (Zinchenko & Morgunov, 1994). It is also defined as the mental process by which a person perceives the objects and phenomena of the world in their essential properties and characteristics and reveals the connections and relationships that exist in and between them (Plotnikova, 2008). Psychological

dictionary ed. by V.P. Zinchenko & E.B. Morgunov (1994) ans B.G. Meshcheryakov (1992) considers thinking as a mental process of reflection of reality also, as the highest form of human creative activity.

As you know, thinking is characterized by three main factors:

• cognitive thinking, i.e., happening internally in mind, but it is judged by the behavior;

• thinking - is the process when there is some manipulation of knowledge in a cognitive system;

• directed thinking, and its results are manifested in behavior, which "solves" some problem and is directed to its solution (Spirkin, 1988).

In this regard, believing that thinking is a function of the brain, representing in this sense a natural process, it should be noted that each individual acquiring a language, concepts, logic becomes a subject of thinking only. And this is already a product of social practice, ie the tasks that we set before our thinking, are generated by the social conditions of our own lives. Thus, the human mind has a socio-historical nature (Fridman & Kulagin, 1998). In this sense, as indicated by L.M. Fridman & I.Y. Kulagin (1998), thinking by its nature is social, as occurs, takes place and develops in the process of social communication between people. At the same time man's thinking, as we noted above, is subjective and has a personal character, as the concrete human person, possessing by diverse feelings, desires, interests and expressed in its orientation, aspirations, motivations, is thinking (Halpern, 2000).

When we talk about the culture of thinking, we cannot ignore the most important qualities of mind. Analysis of the psychological and educational literature (Plotnikov, 2008; Spirkin, 1988; Halpern, 2000) can attribute to them a critical intelligence, flexibility and mental stability, concrete thinking, speed of thought, intellectual curiosity and inquisitiveness of the mind, profundity of thought, consistency and argumentativeness of thinking. Thus, mind criticism is manifested in the ability to evaluate the work of thought rigorously, weigh all the arguments "for" and "against" of emerging hypotheses carefully and expose these hypotheses to a careful scrutiny. An indicator of the mind criticism is the ability to perceive the assumptions as hypotheses need to be tested.

Mental flexibility (or agility, mobility, and so on. d.) involves not only the wide use of learned knowledge, but also to overcome the barrier of past experience, departing from the usual train of thought, the resolution of conflicts between actualized knowledge and the requirements of the problem situation, the originality of the solutions, their peculiarity. When the flexible mind of man passes easily from one action system to another, ie, if a solving problem requires it, he may refuse from the usual action, and so on. Stability of mind is characterized by a clear allocation of the essential features of the problem, the retention of the summation in the mind, in order to act in accordance with them, without succumbing to the influence of external, random signs of analyzed situations. Substance of thought is expressed in the ability to cover the entire issue as a whole, without losing any particulars of the case at the same time. The speed of thought is the result of the high development of other qualities of the mind, it is characterized by the amount of time needed to solve the problem.

Intellectual curiosity of the mind manifests itself as the need to know what remains unknown, to reveal (to understand) something new and unusual that

occurs in everyday human life. The depth of the mind always appears when it is necessary to abstract from all the trivial when learning new material, in solving problems, or in the generality level. Logical thinking and argumentativeness are characterized by the ability to solve the task, to justify a decision and to prove its correctness. At the same time, when it comes to the field of individual educability, we believe a man awareness of his mental activity as one of the main qualities of the mind. This quality of mind is manifested in the ability to express in words or other symbols (in graphs, charts, models) the purpose and the product, the result of mental activity (essential features of the newly formed concepts, laws), as well as the ways with the help of which this result was found. The absence of conscious mental activity is reflected in the fact that a person cannot give a report on the solution of the problem (even if it is true), does not notice his mistakes, can not specify those attributes on which he relied on, giving a particular response.

Mental abilities of the person are judged not because of he can do on the basis of imitation or to learn as a result of a detailed, full-scale explanation. The mind of man is manifested in a relatively independent acquisition, "discovery" of new knowledge for themselves, in the width of transferring this knowledge to new situations, in deciding non-standard, new tasks for him. And productive thinking peculiarities, which we discussed above, are shown in emerging of a mind qualities in a human, determining the level and the specifics of the individual learning (Karpov, 2003; Meerovitch, 1997; Pidkasistyĭ, Friedman & Garunov, 1999).

It is known that the criterion of the thinking culture verity is social practice, because thinking cannot be reduced to a set of mental operations and manipulation. Developed thinking is closely related to speech, ie, ability to clothe their thoughts into words and to communicate with the outside world. Under the methods of thinking activity are understood the means by which it is implemented. They include: a comparison, specification, analysis, generalization, classification and systematization, synthesis, abstraction. The rest refer to a derivative of them. Every act of thinking is a process of solving any problem arising in cognitive and practical activities. Therewith thinking is based on the knowledge and the acquisition of a new knowledge - on thinking (Yaskevich, Burke & Pavlyukevich, 2006).

Materials and Methods

The methodological basis of the study were: psycho-pedagogical concept of activity (Vygotsky, 1996; Leontiev, 1997); theory of personality development (Davydov, 1972); cultural theory studies (Kravchenko, 2000) general theory of thinking (Ananiev, 1997; Brushlinskii, 1983; Rubinshteyn, 1968); the theory of the formation of thinking (Matyushkin, 1972; Zalmykov, 1981; Zhelezovsky, 1993; Makhmutov 1975; Menchinskaya, 1966), the theoretical study of ways of scientific outlook formation (Davydov, 1972 and others.); the idea of contextual learning in high school (Verbitsky, 1991).

Research methods

For the most effective diagnosis of the students culture of thinking level in motivational-axiological, cognitive, operational and personal-reflexive criteria is necessary to use such techniques as test – questionnaire of life values (Senin, 1991); method of diagnosis of students educational activity motives (Rean, 2001), V.A. Yakunin (1994); the problematic task for the course Logic A.G. Sabirova (2004), intelligence structure test R. Amthauera (2003); methodics for evaluating the logic of thinking:"Quantitative relationships", "Laws of numerical series", a technique for the study of the ability to classify and analyze "Exception of concepts"; technique of diagnostic of an reflexivity individual measure A.V. Karpov & V.V. Ponomareva (2000).

The above mentioned instructional techniques using is the most effective in such forms of university learning organization forms as: theoretical studies (lectures, talks, discussions, stories, explanations); practical training (workshops, work on the chosen theme, creative work and tasks, reading reports); conference; independent work; competitions (thematic, substantive). On this basis, the practice shows that for these forms of training the following methods of organizing an elective on "Logic" are the best: group exercise; method of problem-based learning; project method; role-playing games; visual method (illustration, demonstration).

Results

Analysis of the psychological and pedagogical, philosophical, sociological and cultural literature reveals the following structural components of culture of students thinking: motivational and evaluative, cognitive, the operational and personal.

Motivational and evaluative component is a set of relatively stable values in the field of vocational training, learning that a student subjectivized them, making personally meaningful. Subjective perception and appropriation professionally significant values by the student are determined by the richness of his personality, the development of thinking, by the presence of a formed system of professional priorities, reflecting thus the inner world of the student, forming a system of his value orientations.

In the course of training in high school, young people actualize, above all, the values which have a vital and necessary professional personal meaning for him. On this basis, formed in the minds of "Professional ego" as a set of goals, ideas, attitudes, correcting the individual experience of the specialist activity, the associated feelings, beliefs, attitudes and professional relationships.

Cognitive component is a set of professional skills of students.

The operational component is considered by a future specialist in connection with the use in the process of solving of different kinds of professionally-oriented tasks, mental operations of analysis, objectives, synthesis, comparison, classification, systematization, abstraction, generalization and concretization. Various mental operations skills of the students cause the ability to carry out analytical and reflective (analysis and reflection of a holistic professional activity of a specialist and its elements), design-predictive (implementation of the process of goal-setting and design of professional activity, its planning and the desired results foresight), organizational-activity (use of adequate means, forms, methods, techniques, activities to achieve optimal results of professional activity), assessment and information (self-test of the level of professional education, personal general

cultural and professional development, formation of culture of thinking components), correctional and regulatory (making adjustments and regulation of their activities on the basis of the information) activity.

The personal component is due to the fact that it can be implemented by the student who is aware of himself as a person capable to release his "Professional ego" from the surrounding reality, reflect his actions, words and thoughts. Personal sense of culture of thinking requires a high degree of activity, conscious acquisition and possession of thought techniques and operations.

Looking at the components of a culture of thinking, we set out the task to identify those of its features which depend on the ease of acquiring knowledge, the pace of progress in them, i.e. associate it with the concept of general abilities. These properties of students psyche cause the success of their training activities, quickness and ease in learning new knowledge, ie, act as their general aptitude for learning. The term "learning" is widely used to refer to these training skills in pedagogy and psychology. The higher learning, the faster and easier is acquisition of new knowledge of the person, the freer he operates in relatively new conditions, the higher the rate of development of its culture of thinking. It can be concluded that the ability to learn, along with effective knowledge luggage, i.e. those which the student is using in practice, enters into the overall structure of his intellectual development.

Thus, the culture of thinking is a set of formal logic, language, content-methodological and ethnic requirements and standards imposed on intellectual property rights. Their assimilation and application depend on both the further development of socialization and its professional successes and creative achievements. Culture of thinking as a product of the developed culture of thought defines the individual as an intelligent being, capable to decide efficiently both their life and social problems, to give an adequate assessment of himself and everything around. Therefore it should be noted once again that the development of culture of student thinking in all aspects is related to the formation of its subject-specific thinking as a future specialist that, in fact, is an integral part of the general professional training.

On this basis, it is possible to identify these evidences of culture of thinking, as dialectical nature (holistic knowledge of the subject in his deep relationships); the ability to "vision" of the problem (the ability to self-formulation of problems as the action of intellectual and enterprising person); spatial imagination (makes it possible to synthesize the individual elements in a holistic way and to operate by spatial images freely); ability to evaluation activities (assessment of different options of decision and the subsequent finding of more rational solutions); the ability to transfer (the ability to apply the experience gained in the solution of one problem to the solution of the other); the ability to mix the new data with the previous amount of knowledge (knowledge activation information is received).

Thus, the task of developing a culture of thinking in high school is that to guide the thinking of students in creative direction, to teach future specialist to abandon from the irrational tendencies, erroneous skills, to do all kinds of thinking deep, real, to create conditions that develop professional thinking of the future expert. The development of a culture of thinking in the process of training in high school - is the improvement of all forms of thinking, the development of abilities and skills for the application of the laws of thought, as well as the transferring of mental activity techniques from one area of knowledge to another.

If we consider the logic in the broadest sense of its essence, it explores the structure of thought and reveals the underlying regularities. Thus abstract thinking, generally and indirectly reflecting the reality, is inextricably linked with language, because language is the expression of that reality, the structure and method of using of which gives us knowledge not only about the content of thoughts, but also of their forms, the laws of thought. And as in connection of linguistic expressions and relations between them logic sees one of its main tasks, there is a significant position that it is important not only what to teach in the development of a culture of thinking, but also how to teach and what to teach. This logically leads us to the question of the establishment of appropriate teaching environment conducive to the development of culture of thinking through academic discipline "Logic". To this we add that in the process of study of logic an evaluative attitude to improve the quality of their education is formed, and this involves the formation in the future expert, such motifs as:

- live creatively and be useful to society, to be requested, to achieve self-realization and thus gain life stability.

When considering the value of the logic for the development of a culture of thinking, we can see that modern logic represents two interrelated but relatively independent science - dialectical logic and formal logic, having thus the same object of study - thinking. That's why a correct understanding of the dialectical and formal logic excludes their opposition and identification.

Dialectical logic, which studies the mental form in their genesis, development, and the relationship is a science about the laws and forms of theoretical thinking. Studying the laws of development of human thought, it generates the corresponding methodological principles and requirements, the most important of which are: 1) the principle of historicism; 2) the requirement of objectivity and comprehensiveness of the subject matter study; 3) the principle of the unity of the historical and logical; 4) ascent from the abstract to the concrete; 5) bifurcation of unified into opposites.

These principles and requirements in its totality at the level of dialectical logic are the content of thinking of culture as a culture of dialectical thinking, which is a high degree of development of mental abilities. However, in order to acquire the requirements and principles of dialectical logic, it is necessary to have an excellent knowledge of formal logic. Elucidation of the specific features of the logical form of the phenomenon leads to the definition of the formal logic subject, which, like a subject of any science, is objective in nature. Formal logic studies the objectively existing structure of the thought process, the established relationships of concepts and judgments in deriving new knowledge in inferences. It is stable connection of right thought elements, the analysis of such links, as well as the description of the structural forms of thought is the subject of formal logic study. And the laws and regulations of the latter are the least without which logical culture of thought is impossible. Thus, the development of formal logic problems during the course of the discipline "Logic" in the first place, will require an understanding of its methodological role for professional practice of a specialist in any field, understanding the specifics of formal-logical approach to knowledge of objective reality. And in this context, the definition of the subject and the value of logic is of a great practical importance, because it means the acquisition of applied logic by students, its regulatory requirements and turning them into their own mental activity norm of the individual.

So, with regard to social requirements for modern specialist an objective of learning logic in the university should be transferred from the accumulation of knowledge and development of skills of logical thinking possession to the formation of future specialist personality, and as an important criterion for its formation - the developed culture of thinking stability of young people. It is important to bear in mind that logic applies to the spiritual component of the culture also, and only through it, one way or another, is embodied in various elements of material culture, occupying there an important place. As one of the oldest and most serious science in human history, it is an integral part of the system of sciences that form the intellectual core of spiritual culture, and together with them performs a diverse and important functions in society. These social functions of logic manifest its nature and deep science specifics. The main functions of these we would call the following:

1).Cognitive function. Like any science in general, logic is concerned the discovery and study of the objective laws of thinking, taking its place in the general system of the world knowledge, and performing general scientific - namely, cognitive function, ie, explanatory and predictive. It gives more or less accurate explanation of a certain group of phenomena and processes of thinking, and on this basis – predicting, the conditions under which is possible to achieve true knowledge, and what are the consequences of the erroneous course of reasoning.

2). Worldview function. Introducing a special science, logic, compared with thinking (which in the natural and social sciences is only a means of reality cognition), is the direct purpose of knowledge. Therefore, revealing regulations of thinking as one of the most important areas of research (together with nature and society), logic makes a significant contribution to any decision of the fundamental philosophical problem - the relationship of thinking and being. Therefore, it is actively involved in shaping the worldview of young people - the totality of their generalized view of the world in general, and the relation of a man to the world.

3). Methodological function. Like any other theory, logical one, being a result of prior knowledge of its object, becomes a means, and the method of further knowledge. This thesis can be, for example, be attributed to the traditional formal logic, which is based on the theory of reasoning and evidences and which serves the sciences by the methods of output knowledge obtaining. This can be fully attributed to the dialectical logic, the requirements of which are, essentially, the requirements of the most common, the dialectical method used by many sciences.

4). The ideological function. Originating and developing in a class society, logic has never been neutral in the ideological struggle. It served as an important means of justification of one ideology, a weapon against another one. The ideological confrontation between the major philosophical trends - materialism and idealism, between dialectics and metaphysics was always developing in it. It most always unfolded the ideological confrontation between the major philosophical trends. Its ideological function is clearly observed in it.

Thus, education is given a major role in the formation of a highly intelligent person who has developed culture of thinking and striving for productive relationships between people. Shaping the personality of the future specialist in any field through the development of his culture of thinking within such, in particular academic discipline, as logic, university at the same time creates a positive motivation to useful social activities in young people. Proceeding from the above, we conclude that in the field of teaching logic, studying its laws, in addition to the use of productive technologies, which are focused on the development of students' thinking

culture, it is important to consider a pedagogical potential of the discipline logic, as it is in many respects, as it turns out, determines the substantive development of the logical culture, contributing to the formation of value perceptions of the objective laws of the world in young people.

In the development of students' ability to perceive the features of logic and thinking in general consciously, there is an educational feeding of their intelligence, as well as their citizenship strengthening, which constitutes an important part of the ethics of communication in a business partnership in the framework of professional activities. To all other professionally-oriented interests are generated, the realization that a student can connect his future professional activity with a group profession, for example, "man-man". Thus, the culture of thinking as a set of intellectual, social and moral skills and abilities can help every young person not only to communicate successfully with other cultures in everyday life and in professional contexts, but also personalize itself as a cultural individual.

Discussions

Some people feel as if logical knowledge is not essential, since people can think without special knowledge properly. Indeed, people are able to think logically, not knowing the logic and its laws, just as they can speak properly, not knowing the alphabet and grammar rules. This is due to the fact that the world, which is reflected in our thinking, is logical per se. However, using the intuitive skills are not enough for high school graduates. As for modern professionals a correctness of thinking spontaneity will clearly impoverish their logical culture. Any person with higher education have to know how and on the basis of which logic laws the right reasoning are built, be able to analyze and recognize the common scheme (structure) of reasoning and to separate it from the specific content, to distinguish between right and wrong reasoning, to disclose and explain the essence of all sorts of errors in reasoning. He must learn to control the mind in its shape, manage this process consciously, check its accuracy, prevent the occurrence of errors in logic, as well as find and fix them. Moreover, he must learn to use logic as a communication tool in the dialogue of cultures and civilizations of the modern world. And all this he should be able to do professionally, so there will not be enough just common sense and intuition, as if they were highly developed. On this basis a pedagogic aspect of the educational process is implemented, in which the logic training is aimed not only at intellectual, but at socio-cultural development of a young person also to prepare him for a productive dialogue in the course of its future professional activity, as well as to the use of logic as a self-education in different fields of human knowledge.

Thus, an important part of students training has to become their logical training. However, we should avoid the traditional error, which manifests itself in the statement that logic teaches man to think. This is not entirely true, because thinking is an objective process, as, for example, breathing. Therefore, any normal individual can think without studying of logic. However, in practice areas where thinking is a tool for professional activities not just the ability to think is important for a specialist, but to think correctly. As the ability to breathe in such professional activities, like swimming, running, singing, etc. is necessary. And the logic in this aspect is just a tool that helps a person to think correctly. In this regard, asking the question: is our thinking right or wrong, is impossible without logic.

Taking into account the fact that every profession constantly requires a solution of complex professional problems of logical and creative type, the students being in the university have to acquire a variety of intellectual skills associated with analysis of the phenomena and processes, comparison, abstraction, generalization, concretization, etc. Therefore it is so important in the modern educational process to focus on the development of culture of students' thinking. To solve this problem the implementation of certain teaching conditions is required. As it is known, the complex teaching environment is a set of conditions, the combination and sequence of which provide results corresponding to the set goals and are determined by the content and teaching methods. They, in turn, take into account the nature of the problem forms and methods of training, motivation and especially the specifics of the educational process at the university. Analysis of psychological and educational research as well as our own experience as a teacher of high school allow to put forward the following set of didactic conditions of students' culture of thinking:

- taking cue of the features from students thinking development and achievement a positive motivation their activity on methods of theoretical thinking acquisition;
- certain structuring of educational material that allows students to understand and gut the structure of the studied knowledge and logical ways and methods of explaining of the material by the teacher;
- development and application of a special system of logical and informative and challenging tasks for the students performed in the course of lectures and seminars;
- organization of independent educational activity of students in the learning process, aimed at the formation of logical ways and methods of solution of professionally-designed logical problems;
- arming students with reflexive mechanisms of logical thinking in the development of competencies process that are relevant to the profession.

However, in the context of our thinking we should take into account that the internal structure of the thinking process is formed in accordance with the laws of nature and properties of the human brain, to which we also refer taking cue of the features from students thinking development - yesterday's school graduates. In particular, it is necessary to take into account such features of thinking, as: a / critical and categorical nature of young people thinking; b / reasoning is not at the level of facts but by the ideas generalization; c / gradual transition from thinking of formal logic level of generalizations and inductive inferences to the hypothetical-deductive thinking; d / ambition to a dialectical thinking.

In conclusion, we underline that the narrow, at first sight, theme of the culture of thinking with all its specificity leads us to the problems of global, planetary character. Today, in the conditions of association of the overall efforts aimed to decide various socio-economic and other problems young people activities and ways of dealing with the outside world will be largely determined by their untroubled mind and undistorted thinking. And the culture of thinking of individual becomes his essential entity, his attribute and value. Pedagogic potential of educational

disciplines, in particular, the course logic plays an important role in the development of the culture of student thinking.

Conclusion

As a result of a comprehensive study of the theoretical aspects of culture of thinking of students in higher education, we reached the following general conclusions.

In the process of study of the culture of thinking problem we have been defined its phenomenology understanding and recorded the current state of issues in this area. It, in particular, includes the following issues: the willingness of the individual to self-organization of his mental activity; right mindset development (while subjecting to the requirements of the basic laws of logic thinking - the law of identity , the law of non-contradiction, the law of excluded middle and the law of sufficient reason); proactive approach to the culture of thinking development of the person; targeted development of intellectual skills (training mental actions and techniques of cognitive research); theoretical thinking (associated with the correct definition of cause and consequence); formation of professional thinking; the development of creative thinking; problem-based learning; critical thinking; the development of brainwork culture of students; social and personal nature of thinking; productive and reproductive thinking; developing qualities of mind (critical mind, flexibility and mental stability, concrete thinking, speed of thought, intellectual curiosity and inquisitiveness of the mind, the depth of mind, consistency and conclusiveness of thought); the development of an innovative style of thinking. Based on the analysis of all the above mentioned topics culture of thinking and related psychological and pedagogical, philosophical, sociological and cultural literature, we were able to identify the following thinking culture structural components of students: motivational-axiological (a set of relatively stable values in the field of vocational training, which are personally meaningful to students); cognitive (the set of professional knowledge of students); the operational (decision of the professionally-oriented tasks on the basis of mental operation analysis, synthesis, comparison, classification, systematization, abstraction, generalization and concretization) and personal (conscious acquisition and possession of a thought-techniques and operations).

The basic concept of "culture of thinking", as a part of the general culture of personality, which manifests itself in a person's ability to give the definitions of concepts logically correct, operate with concepts, make inferences and evidence-based conclusions, reveal contradictions, organize the existing knowledge, constantly strive to find new ones and apply them from a reasonable point of view of everyday logic and creative approach in all aspects of their livelihoods in the process of development of socio-professional experience and productive interaction with the surrounding reality.

In this context, we have identified the following features of a culture of thinking, as dialectical characteristic (holistic knowledge of the subject in its deep relationships); the ability to "vision" of the problem (the ability to self-formulation of problems as the action of intellectual and enterprising person); spatial imagination (makes it possible to synthesize the individual elements in a holistic way and to operate spatial images freely); ability to evaluation activities (assessment of

different decision options and the subsequent finding of more rational solutions); the ability to transfer (the ability to apply the experience gained in the solution of a previous problem to the solution of the other); the ability to mix the new data with the existing amount of knowledge (knowledge activation to receive an information).

As a result of work on the theoretical understanding of logic as a science, it is possible to explicate its basic functions in educational activities, such as: - cognitive function (or explanatory and predictive, explaining various phenomena and processes of thinking and predicting conditions of possible achievement of a true knowledge);

- worldview function (reflecting thinking relation to being and forming the students worldview as a set of generalized views on the world);
- methodological function (using formal and dialectical logic);
- ideological function (there is a certain ideological confrontation between materialism and idealism, dialectics and metaphysics in its basis).

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