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Psychological Ways of the Development of Different Types of Thinking of Students as Their Soft Skills

Психологічні шляхи розвитку різних типів мислення здобувачів вищої освіти як їх soft skills

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ABSTRACT

The purpose *of our article is to analyze psychological ways of the development of different types of thinking of students as their soft skills.*

Methods of the research. *The following theoretical methods of the research were used to solve the tasks formulated in the article: a categorical method, structural and functional methods, the methods of the analysis, systematization, modeling, generalization. The experimental method was the method of organizing empirical research.*

The results of the research. *We proved, that a distinction had to be made between theoretical and practical thinking. Practical thinking has the aim to solve certain problems or transforming practical situations, and often exists in conditions of time shortage. Theoretical thinking acts as a process of cognition. Another dichotomous classification of thinking divides it into analytical, namely, that which unfolds in time, consists of different stages in the consciousness of the person who thinks, who is intuitive, who proceeds quickly, does not have clear stages and who is realized in a little degree. A distinction is also made by us between creative and reproductive thinking. We believe that mental culture implies a productive nature of thinking, which cannot exist outside the assimilation of reproductive procedures by a person, therefore, both types of thinking*

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are important for the formation of a mental culture. All these characteristics of different types of thinking are so called soft skills, which are the basis of the development of students as future professionals.

Conclusions. *To learn a new subject and solve a problem facing a person, the subject's creative thinking progresses through the implementation of many operations that are components of the thinking process. The following groups of thinking components are conventionally distinguished: thinking operations –> analysis, synthesis, comparison, generalization, abstraction, concretization, classification, systematization; thinking forms –> concepts, judgments, inferences; thinking qualities –> proveness, criticality, objectivity, laconicism, etc. We note that thinking cannot be reduced only to a system of intellectual operations. Occupying a central place in the structure of general intelligence, thinking and soft skills determine intelligence both procedurally and personally.*

Key words: *thinking, different types of thinking, students' soft skills, thinking operations, analysis, synthesis, comparison, generalization, abstraction, concretization, classification, systematization; thinking forms, thinking qualities.*

Introduction

In the context of the development of modern secondary education, the problem of forming the thinking culture of students as their soft skills is becoming increasingly important. After all, the globalization of social, economic and cultural processes, entry of Ukraine into the world of economic and information space, actualize the need of students to educate a new generation of young people who will have the ability to think at a high level, to obtain and process information, to analyze situations, adequately evaluate the results of their activities, always be understandable to others in the presentation of their own thoughts, and interact constructively with others, including a paradigm of a cross-cultural space.

In scientific researches, mental culture is considered as the individual's ability to self-develop, the person's ability to think using non-traditional, non-stereotypical methods and principles of thinking (Ivashkevych Ed., & Onufriieva, 2021). In pedagogical and psychological researches, the culture of thought is analyzed as a kind of "discipline" of our mind, which means, on the

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one hand, the ability to prove one's own point of view with arguments and convince the partner of communication in its correctness, and, on the other hand, the ability to listen and understand the partner's position, as well as, putting oneself into the place of communicator, evaluate his/her own ideas (Honcharuk, Onufriieva, Haletska, Kurytsia, Ivashkevych Er., & Nabochuk, 2023).

The term "culture" is one of the key concepts of modern social life and it is used in Philosophy, Psychology, Sociology to define phenomena, their characteristics, as well as some main abstract ideas that embody some dominant ideals, positive experience and which act as a certain reference model. The sources of the formation of a culture come out from the space of evolution of the mental reflection of the individual and the emergence of the person's consciousness as a non-instinctive ability to shape his/her relations with the world. The term "culture" was introduced by Cicero into Philosophy, and the scientist focused on the content aspect of this category, since he applied it, first of all, to determine the features of the education of a human mind in a whole. At the beginning of the 17th century, Francis Bacon, like Cicero, spoke about culture as a mechanism for nourishing the person's mind. Gradually, the word "culture" began to be used more and more often to denote the processes of the development and improvement of both objects and subjects.

Nowadays, there are more than 200 definitions of the concept of "culture". Modern Philosophy understands the term "culture" primarily as a characteristic of the human community: culture is not inherited biologically, but involves the system of learning. Scientists (Dubovyk, Mytnyk, Mykhalchuk, Ivashkevych Er., & Hupavtseva, 2020) believe that culture is an acquired set of knowledge that is used by people to interpret their life experience or choose a strategy of a behavior. The culture of each people accumulates the experience of their life, determines communication and helps to establish mutual understanding between people, outlines ways and means of solving many issues

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and problems. Culture is multidimensional and, as an infinite, even more complex system than the physical world, allows us to create various theoretical constructions within the limits of possible postulates.

As some contemporary scientists note, modern scientific culture is studied in three main directions:

– as a set of material and spiritual values (Chen, Zhao, de Ruiter, Zhou, & Huang, 2022);

– as a specific way of human activity (Alahmadi, Shank, & Foltz, 2018);

– as a process of creative self-realization of the individual (Collins, Sanchez, & Espana, 2023).

Thus, culture is considered as a historical system of material and spiritual values, norms, ways of organizing the person's behavior and communication created by a man; as a process of human creative activity, etc. Acting as a process and at the same time as a result of the activity, culture includes the sense what a person creates, and what means and methods he/she uses to do. The most specialists point out that modern civilization is experiencing a crisis, the basis of which is a global crisis of culture, which is the result of the exhaustion of opportunities and their development in alienated forms. But at the same time culture is assessed by scientists as a means of creative self-realization of each individual as a member of the society.

So, the purpose of our article is to analyze psychological ways of the development of different types of thinking of students as their soft skills.

Methods of the research

The following theoretical methods of the research were used to solve the tasks formulated in the article: a categorical method, structural and functional methods, the methods of the analysis, systematization, modeling and generalization. The experimental method was the method of organizing empirical research.

In our research we use our author's Methodology for identifying motivation of student for solving a problem.

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Results and their discussion

For a deeper understanding of the phenomenon of a culture of thinking, it is necessary to analyze modern scientific ideas about ***thinking***. Thinking belongs to a number of difficult-to-define concepts. The psychological concept of thinking is built on the principles of the unity of the person's activity and thinking, activity, socio-historical and cultural determination, development, systematicity, reflection. Thinking in modern Psychology is defined as an intellectual action (activity), in which intellectual processes (planning, design, evaluation, understanding, etc.) and intellectual operations (analysis, synthesis, comparison, generalization, etc.) can be distinguished. Psychological theories of thinking include: associative, behavioral, Gestalt Psychology, operational, genetic-epistemological, etc. In addition to general principles, each Psychological Theory is built on certain conceptual principles and characterizes various manifestations of the vision and understanding of thinking by psychologists-researchers (Івашкевич Ер., & Комарніцька, 2020; Heidari, 2019).

Let us briefly describe some theories of thinking, the sources of which arose abroad, and which ones there are important for the subject of our research. One of the first theory has to be developed was ***the theory of associations***, whose representatives considered association to be the main mechanisms of mental activity, including thinking (Astle, & Scerif, 2011). The study of thinking as a process of solving problems was carried out by the Würzburg School (de la Garza, & Harris, 2017), the ideas of which were developed in the researches (Guerrero, 2023), who considered thinking as functioning of intellectual operations. Representatives of Gestalt Psychology (Wong, 2019) interpreted thinking as an act of restructuring a situation in order to solve it.

In fact, *subjective behaviorists* (Mai, 2022) consider thinking as a process in the organism of a person. The problem of motives of human behavior was outlined by Psychoanalysis: in-

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voluntary figurative thinking that occurs during people's sleep is interpreted as one of the most important features of the manifestation of unconscious motives that underlie our thinking. *Psychoanalysis* also includes the concept of autistic thinking, according to which the person's thoughts are subordinated to affective needs (Mykhalchuk, & Khupavsheva, 2020). The theory of cognitive dissonance (Huang, Loerts, & Steinkrauss, 2022) and the theory of self-actualization (El-Zawawy, 2021) consider cognition in the connection with the emergence of motivation. Cognition is defined as the basis for the manifestation of a motive, the functions of which in human cognitive activity are not analyzed in detail (Duarte, 2019).

An important direction in the study of thinking in foreign Psychology is the scientific researches of scientists, who define thinking as the progressive reversibility of mobile mental structures, as a consequence of increasingly complicated adaptation to the requirements of the environment in the natural conditions of human interaction with the outside world. In the middle of the 20th century, a new approach to the study of thinking as cognitive activity was formed (Alyami, & Mohsen, 2019). The general definition of cognitive activity according to scientists is the following: "This is an activity associated with the acquisition, organization and use of knowledge" (Berninger, & Abbott, 2010: 636). We consider this definition as the closest to the subject of our research.

We do not have the aim to provide a complete description of various approaches and theories of thinking, but we will focus on those ones that are fundamental to the formation of the thinking culture of students in the process of literary learning. From these positions, the most interesting there are the results of the research in the field of Pedagogical Psychology and Psychology of thinking.

In contemporary Psychology, the problem of thinking is also given considerable attention. In the researches of scientists (Bialystok, 2018), thinking is considered as a holistic

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problem. In the researches of other scientists (Mykhalchuk, Plakhtii, Panchenko, Ivashkevych Ed., Hupavtseva, & Chebykin, 2023), only individual aspects of this phenomenon are analyzed. In these researches the problem of units of the analysis of verbal thinking is studied. Scientists also consider thinking as the formation and the development of a system of internalized operations. The problem of the formation of creative thinking of the individual was studied by scientists (Mykhalchuk, Levchuk, Ivashkevych Er., & Nabochuk, 2023); intellectual activity – by scientists (El-Zawawy, 2021); the researches of scientists (Heidari, 2019) deal with the study of the qualitative side of thinking. Thinking as the functioning of intellectual operations, as forecasting is considered in the researches (Duarte, 2019). Problem situations in thinking are analyzed by scientists (Huang, Loerts, & Steinkrauss, 2022). The problem of mental development is considered in the researches of scientists (Mykhalchuk, Plakhtii, Panchenko, Ivashkevych Ed., Hupavtseva, & Chebykin, 2023).

So, we define thinking as *the highest level of cognition*. We believe that the mental development of a child cannot be analyzed separately from the mental development as a whole, from the interests of the child, his/her feelings, that deal with personal traits and qualities. We define the diversity of types of thinking, speak about the impossibility of reducing all thinking only to theoretical and verbal-logical ones. The fundamental factor in our approach to the psychological aspect of thinking is the provision on combining the separation of practical objective activity and theoretical activity into a single structure. We propose to specifically study the motivation of thinking activity, distinguish between the activity of people using by them actions and operations.

We'd like to emphasize that Psychology does not study the entire process of thinking, but only the part of it that is responsible for the subject's orientation to thinking when solving intellectual problems. We theoretically substantiate the operational

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side of the thinking process, substantiate its main mechanism, that is, a means of analysis through synthesis.

In our opinion, the beginning of thinking is in a problem situation. This problem situation is in a great degree determined by the involvement of the individual into the thinking process. Thinking unfolds in time, has a beginning and the end, it acts as a certain manifestation of the subject's activity. This idea of thinking as a process is also reflected in the researches (Honcharuk, Onufriieva, Haletska, Kurytsia, Ivashkevych Er., & Nabochuk, 2023). These scientists understand thinking as a process, which replaces practical actions on things with ideal actions on images. So, we consider thinking as a process of establishing connections between knowledge about actions and the construction of new knowledge. We understand thinking as *a cognitive activity*, the products of which are characterized by a generalized, mediated reflection of the reality. We distinguish following three meanings of the term "*thinking*": a) thinking as knowledge (a conceptual term); b) thinking as a process, as a result of which knowledge (cognition) is achieved; c) thinking as one of the human abilities (a person's mind).

The object of our research is *thinking activity*, the development of soft skills by this thinking activity. We'd like to note that a creative thinking activity of the individual leads to different changes in the nature of the person's thinking and raises the individual to a higher level of creative thinking activity. So, the essence of thinking is that it contains intentional structures within itself. Intentionality is considered in Psychology as a sense, which it is "from me to the outside" relationships, it determines the processes of reproduction of creative thinking activity, a transmission and communication, the processes of formation and development of cultural norms and their functioning during creative problem solving. This statement is too close to the goal of our research.

We understand, that creative thinking is a change in the known sense in order to create something new. There are several

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classifications of thinking in the scientific literature (Alahmadi, Shank, & Foltz, 2018). One of them distinguishes between visual-active thinking (practical-active), figurative (visual-figurative) and verbal-logical (conceptual, verbal, discursive, theoretical) thinking. If we tell about students, all three types coexist, and conceptual, theoretical thinking is developed precisely in a students' age.

There are also other dichotomous classifications of different types of thinking. Scientists (Berninger, & Abbott, 2010) classify thinking according to the features of connections and relationships, distinguishing empirical and theoretical types. Thinking activity has the aim at distinguishing and registering the results of sensory experience, which is considered by us empirical thinking, and thinking that illuminates the essence of objects, demonstrates the internal laws of their development, which is theoretical thinking. The content of theoretical thinking is determined by interrelated processes: the analysis, reflection, planning, etc. Theoretical thinking has the aim at discovering general laws, characteristics of objects, therefore it is considered purely as *scientific or theoretical thinking*.

In the ascertaining section of the experiment, which was conducted during 2024, 423 students of Rivne State University of the Humanities took an active part. Among them there were 154 students formed by us by the random method of control and experimental groups, such as:

– *experimental groups*:

E1 – 38 students of the 1st course of philological faculty of Rivne State University of the Humanities;

E2 – 36 students of the 2nd course of philological faculty of Rivne State University of the Humanities;

– *control groups*:

C1 – 39 teenagers of the 1st course of philological faculty of Rivne State University of the Humanities;

C2 – 41 students of the 2nd course of philological faculty of Rivne State University of the Humanities.

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At the first stage of the experiment, we have the aim to analyze the level of formation of the motivational sphere of the mental culture of students. To assess the content layer of the motivational sphere, we developed a questionnaire. The content of the questionnaire has the aim at determining the attitude of students to the study of foreign literature, reading novels, analyzing motives for performing this type of activity, as well as whether students understand the concept of "mental culture", whether they consider it as a quality of personality's necessary for the successful solution of students both educational problems and tasks, and for the achievement and implementation of life goals.

So, we proposed for students our author's Methodology for identifying motivation of student for solving a problem.

Methodology for identifying motivation of student for solving a problem

The name of a student, his/her surname_____

Group_____

Instructions to respondents. The test consists of 20 phrases. You need to agree or disagree with each statement. Choose one of the answer options "yes" or "no" and circle it.

1	I like solving problems.	Yes	No
2.	It is important to me when a problem is solved quickly.	Yes	No
3.	When I solve a problem, the most important thing for me is to get a positive result.	Yes	No
4	I like solving complex problems.	Yes	No
5.	I solve problems because my parents and teachers force me to do this.	Yes	No
6.	I like it when problems are solved collectively in the whole group.	Yes	No

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7	I like to solve problems that are quick and easy to solve.	Yes	No
8.	My desire to solve problems depends on the lesson material.	Yes	No
9.	It is important for me to solve the problem on my own.	Yes	No
10	I solve problems because I like to find interesting ways to solve them.	Yes	No
11.	I am interested in finding an original way out of a difficult situation.	Yes	No
12.	I like to solve problems that are easy to find answers to.	Yes	No
13.	I like to solve problems only after the teacher explains them.	Yes	No
14.	I solve problems because I realize that I have to.	Yes	No
15.	I like to solve problems, but they are not very difficult.	Yes	No
16.	I am not interested in solving problems or solving tasks.	Yes	No
17.	I like to solve problems, but only those ones that are interesting for me.	Yes	No
18.	I like to solve only easy problems.	Yes	No
19.	I like puzzles that have an original solution.	Yes	No
20.	I am not only interested in the result, but in finding a solution to the problem.	Yes	No

Key Code: answers "Yes" depend on questions 1, 2, 4, 6, 9, 10, 14, 15, 17, 19, 20; answers "No" depend on questions 3, 5, 7, 8, 12, 13, 16, 18.

The results of the survey showed that most students (83.7% in E1, 80.6% in E2, 85.2% in C1, 84.3% in C2) do not understand the essence of the category of students' motivation accurately or

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at all, identifying it either with thinking or with intelligence. The following answers were typical for students: "I don't know", "People with a developed thinking culture are smart". Only a few students formulated their answer in such a way: "Thinking culture is the ability to use your mind". However, even these students could not explain how exactly this category affects a person's life.

The analysis of students' answers to the questions showed that only 6.7% of students in group E1, 7.3% – in E2, 8.2% – in C1, 7.5% – in C2 really possessed the skills of intellectual culture of students. Most students did not properly understand the essence of intellectual culture, they did not have the skills to work with concepts. Almost all students did not know how to combine learning with the processes of self-education and self-knowledge, and students also had great difficulties in situations of choice. They had almost no skills to consider a category, a concept, a term in the context of a holistic idea of the phenomenon (90.3% – in E1, 95.2% – in E2, 91.8% – in C1, 90.9% – in C2), to take into account the hierarchy of concepts about a given phenomenon in a certain context (98.7% – in E1, 99.4% – in E2, 93.7% – in C1, 94.5% – in C2), to see the problem, to make the transition from the empirical to the theoretical level of understanding the phenomenon being studied (98.9% – in E1, 95.8% – in E2, 96.6% – in C1, 98.1% – in C2).

The results of the questionnaires showed that many students did not have the ability to reflect on their educational activities, which was an extremely necessary condition for their general cultural growth. More than a half of respondents noted that they did not know how to use the knowledge they received at the university to understand their own life activities. The program does not provide for the training of such a skill, therefore, the educational process does not include tasks that would contribute to the development of students' intellectual culture.

A positive attitude towards studying academic subjects was expressed by 23.4% of students in E1, 24.8% – in E2, 26.7% –

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in C1, 22.3% – in C2. Some students were indifferent: 41.6% – in E1, 42.7% – in E2, 44.1% – in C1, 45.0% – in C2. Only 12.7% of students in E1, 17.4% – in E2, 11.3% – in C1, 10.6% – in C2 considered most of the academic subjects necessary in their future profession. 94.8% of students in E1, 90.2% – in E2, 93.7% – in C1, 92.8% – in C2 preferred to obtain knowledge in the process of joint activity of the teacher with the group; independent acquisition of knowledge is: 3.5% of students in E1, 4.8% – in E2, 5.2% – in C1, 4.3% – in C2.

The greatest interest at the lessons was shown by students in receiving the most positive results: 87.6% – in E1, 98.5% – in E2, 93.9% – in C1, 95.6% – in C2, while only 27.8% students in E1, 24.6% – in E2, 21.7% – in C1, 23.0% – in C2, in teacher's explanations: 14.7% of students – in E1, 18.6% – in E2, 17.9% – in C1, 13.4% – in C2, in performing creative activities: 10.8% of students – in E1, 11.6% – in E2, 9.7% – in C1, 10.8% – in C2. Only 3.2% of students in E1, 4.8% – in E2, 5.6% – in C1, 4.9% – in C2 stated that they really liked studying the subject material; 13.7% of students in E1, 12.1% – in E2, 12.4% – in C1, 16.8% – in K2 said, that they liked it; 63.4% of students in E1, 52.7% – in E2, 50.6% – in C1, 52.9% – in C2 – they don't like it very much; 19.7% of students in E1, 30.4% – in E2, 31.4% – in C1, 25.4% – in C2 do not like to study. 18.9% of students in E1, 21.6% – in E2, 24.8% – in C1, 23.7% – in C2 want to learn to think culturally (learn to compare according to certain principles, generalize, analyze, etc.).

We proved, that a distinction had to be made between *theoretical and practical thinking*. Practical thinking has the aim to solve certain problems or transforming practical situations, and often exists in conditions of time shortage. Theoretical thinking acts as a process of cognition. Another dichotomous classification of thinking divides it into analytical, which is developed in time, consists of different stages in the consciousness of the person who thinks, who is intuitive, proceeds quickly, does not have clear stages and who is realized in a little degree. A distinc-

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tion is also made by us between *creative and reproductive thinking*. However, we consider any thinking to be a creative process in which the subject always discovers something essential, new, which cannot be predicted in advance. Some researchers believe that for the formation of human creativity as a criterion for the development of his/her mental culture, one should make considerable personal efforts, mobilize personal resources and creative capabilities of the intellect. We believe that *mental culture* implies a productive nature of thinking, which cannot exist outside the assimilation of reproductive procedures by a person, therefore, both types of thinking are important for the formation of a mental culture. All these characteristics of different types of thinking are so called soft skills, which are the basis of the development of students as future professionals.

All of these classifications, on the one hand, consider different types of thinking that involve the use and knowledge of laws and rules by the subject for operating with higher-level concepts and generalizations, a high degree of awareness by the subject of the actions performed. On the other hand, they are contrasted with different types of thinking in which the main content is physical transformations of the object, and which are based on the use by a person of widely used concepts and empirical generalizations.

At the current stage of the development of the problem of distinguishing different types of thinking and building appropriate classifications, it cannot be considered completely solved. This significantly complicated description of the psychological content of the phenomenon of thinking culture of students as their soft skills. Thus, between different types of thinking, we emphasize, there are complex relationships. We'd like to note that in general the relationships between different types of thinking have not been fully revealed yet.

Conclusions

To learn a new subject and solve a problem facing a person, the subject's creative thinking progresses through the imple-

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mentation of many operations that are components of the thinking process. The following groups of thinking components are conventionally distinguished: thinking operations –> analysis, synthesis, comparison, generalization, abstraction, concretization, classification, systematization; thinking forms –> concepts, judgments, inferences; thinking qualities –> proveness, criticality, objectivity, laconicism, etc. The development of thinking is usually reduced to the formation of individual thinking operations or the development of its qualities, which are soft skills. We consider this approach to have a main task solving this problem to be partial in relations to the formation of a thinking culture as soft skills that make up a general culture of the individual. We note that thinking cannot be reduced only to the system of intellectual operations. Occupying the central place in the structure of general intelligence, thinking and soft skills determine intelligence both *procedurally and personally*.

The formation of a thinking culture is influenced by the person's language and speech, which ensure his/her awareness of the processes of reflection and mental modeling, the exchange of mental models in the process of communication. In the cultural-historical concept of thinking the word sign is the driving force of a child's mental development. Having a socio-historical conditionality, thinking is manifested in the fact that in each act of cognition of our complex reality a person relies on the experience accumulated by previous generations, operates with those means of cognition that were created by the individual. Such means, according to our empirical data, primarily include language as a tool for expressing, generalizing and preserving the results of people's cognitive activity. The meaning of a word contains the essence of that unity, which is called *speech thinking*. This is because the meaning of a word is a speech and thought phenomenon at the same time, that is, it belongs to both *the sphere of speech* and *the sphere of thinking*.

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Верьовкіна Олена, Сімко Алла, Завацька Наталія. Психологічні шляхи розвитку різних типів мислення здобувачів вищої освіти як їх soft skills.

***Метою** дослідження є проаналізувати психологічні шляхи розвитку різних типів мислення студентів як їх soft skills.*

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Методи дослідження. *Для розв'язання поставлених завдань використовувалися такі теоретичні методи дослідження: категоріальний, структурно-функціональний, аналіз, систематизація, моделювання, узагальнення. Експериментальним методом є метод організації емпіричного дослідження.*

Результати дослідження. *Доведено, що потрібно розрізняти теоретичне та практичне мислення. Практичне мислення спрямоване на розв'язання певних завдань або на перетворення практичних ситуацій, часто існує в умовах дефіциту часу. Теоретичне мислення постає процесом пізнання. Інша дихотомічна класифікація мислення поділяє його на аналітичне, а саме те, що розгорнуте в часі, складається з етапів у свідомості тієї людини, яка мислить, та інтуїтивне, що протікає швидко, не має чітких етапів, є мало усвідомлюваним. Ми розрізняємо також мислення творче та репродуктивне. Вважаємо, що мисленнєва культура передбачає продуктивний характер мислення, який не може існувати поза засвоєнням людиною репродуктивних процедур, тому для формування мисленнєвої культури важливими є обидва види мислення. Усі ці характеристики різних типів мислення є так званими soft skills, які є основою розвитку здобувачів освіти як майбутніх професіоналів.*

Висновки. *Доведено, що до пізнання нового предмету та розв'язання завдання, яке стоїть перед людиною, мислення суб'єкта просувається шляхом здійснення багатьох операцій, що є складовими процесу мислення. Умовно виділяють такі групи компонентів мислення: операції мислення –> аналіз, синтез, порівняння, узагальнення, абстрагування, конкретизація, класифікація, систематизація; форми мислення –> поняття, судження, умовиводи; якості мислення –> доказовість, критичність, об'єктивність, лаконізм та ін. Зазначено, що мислення не можна звести лише до системи інтелектуальних операцій. Посідаючи центральне місце в структурі інтелекту, мислення детермінує інтелект як процесуально, так і особистісно.*

Ключові слова: *мислення, різні види мислення, soft skills здобувачів освіти, мисленнєві операції, аналіз, синтез, порівняння, узагальнення, абстрагування, конкретизація, класифікація, систематизація; форми мислення, якості мислення.*

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