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## **Representation as a separate category in B. bloom's taxonomy**

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**Abstract**---Annotation: In the article, based on a long study of ways to optimize the process of cognition, the place of the new category "representation" in B. Bloom's taxonomy is considered. The newly introduced category "representation" is located after the category "Knowledge" and before the category "Understanding". Experimentally, out of 50 concepts, meaning verbs of action, revealing the essence of the process of an active presentation, on which the understanding of the information received depends, 10 are singled out, which most fully reveal the main patterns of creating a bright, clear, long-lasting presentation. The use of the "Representation" category in organizing the cognitive process improves understanding, develops logic, scientific and practical thinking, and more effectively forms the formation of professional skills and abilities of specialists.

**Keywords**---bloom's taxonomy, cognitive process, professional training, competence, representation, psyche, learning, skill, ability, perception, control.

## Introduction

The world of globalization of processes and phenomena, the rapid build-up of new information, information and production technologies, the in-depth development of fundamental and applied science require that each person realize these realities in the light of real time and find their rightful place in this system of interdependence, find personal meanings of activity, determine their positive life guidelines, self-improvement, self-development. All these processes that take place in life are the result of the application of new, innovative ideas, which, in contradiction to the old ones, make their way into life. Such innovative ideas began to function in education, organization of the pedagogical process. Innovation in the pedagogical process optimizes the process of cognition, enhances logical and critical thinking, activates the activity of memory and imagination, enhances the development of a person's competence. The French psychologist A. Vallon, actualizing the role of ideas in the formation of new ideas and concepts, points to their social nature. He writes that the source of such thinking is society, its material is a system of socially developed ideas and concepts. (one)

Given this feature of real time, the international forum on education notes that in the 21st century the main way for the stable development of the world is education and the main task is to encourage quality education and the creative abilities of a developing individual.[16] ( 2 ) Rapidly changing world processes change the personality, its outlook, spiritual and moral qualities. Much in the development of cognitive activity and the formation of a person's professional competence directly depends on the mobility of his style of thinking. Currently, people are moving away from traditional thinking intensively. They develop new, innovative thinking. Going beyond the established style of thinking means a progressive leap - a transition to a new style of thinking. The style of thinking, fixing attention on the general tendencies of the cognitive process that are stable at this historical stage, reveals the objective nature of scientific creativity. The systemic style of thinking, providing real connections and relationships between phenomena, objects and processes, provides only a toolkit for solving complex problems.

Actualizing the role of representation in the development of social and professional competence of personnel, many scientists note that a modern specialist must be distinguished by the originality of his thinking, which cannot be developed without representation skills. They argue that the formation of abilities that allow the student to capture non-obvious associations, to produce non-standard ideas and solutions to problems, is one of the most urgent and at the same time the most difficult pedagogical tasks. ( 3 ) Some researchers emphasize the importance of students' self-image, their potential in developing their cognitive confidence. In their opinion, the difficulties of many

underachieving children are not the result of their mental or physical disability, but rather the result of their perception of themselves as incapable of serious learning. Success in school, at work, and in life in general, they argue, is no less dependent on a person's idea of \u200b\u200bhis abilities than on those abilities themselves. ( 5 )The great Ukrainian teacher V.A. Sukhomlinsky, analyzing the possibilities of continuous education, notes that it is gradually necessary to instill in children the skills of intense, creative mental work. Children must understand the very essence of intellectual work, which lies in the strain of mental efforts, in penetrating into various complexities and subtleties, details and contradictions of things, facts and phenomena. [12c.95] ( 6 )

The psychological laws of the cognitive process, the complexities on which the results of a person's quality education directly depend, are revealed by the English specialist in educational psychology E. Stones. He notes that the biggest problem in this case is the lack of agreement on what constitutes quality education. First of all, we want children to learn something and the task of education is to help them in this. This is not only the knowledge of "facts", but also the ability to think, the desire to know the world, the desire to do something in it, respect for the views of other people and the ability to defend one's point of view.[12c.58].( 7 )

E. Stones notes that the Swiss psychologist Piaget studied the cognitive development of the child. This gives the key to understanding the mind of the child. In the course of his development, the child moves from the level at which the formal aspect of understanding predominates, i.e. understanding of the physical state of objects to a level at which the dynamic aspect already prevails, i.e. understanding the physical state of objects that change according to certain laws. Piaget believes that the gradual mastery of the laws of transformation of objects is the history of the development of the child's thinking.[12c.95]. (7.) Many experiments conducted in the first half of the 20th century by Western and Eastern researchers prove the conclusion that the process of perception and comprehension is an analytical-synthetic process, although self-observation creates in a person the illusion of a sudden emergence of a holistic image of an object. ( eight. )

E. Stones believes that the concepts that form thinking and consciousness are built on experience and any activity facilitates a more complex future development. Since all of the above characterizes the essence and structure of the cognitive process, its innovative organization and management based on new laws of psychology is a problem of the latest pedagogy, which is increasingly becoming cybernetic. In this regard, the thought of the French psychologist Henri Wallon, who studied the role of activity, technology and action in the formation of thinking as a result of cognition, is important. He argues that knowledge in its essence is knowledge, knowledge is divided into images. It is images that make it possible to restore mental life in accordance with all needs. Then he clarifies his thought - concepts are the result of judgments. They separate from judgments to become systems of relations and classes, then becoming the starting point for new judgments.[2.39] (1)

Developing this idea of A. Wallon, we assume that the essence, meaning and content of the concept is specified and formalized not only by the state of socio-political development, but also by the state of its technical and technological development. The accuracy and identity of the meaning of new concepts is determined by the level of development of the technical, technological development of society and the frequency of the rational functioning of these concepts. The cognitive process today is a systemic, complex, synergistic formation that proceeds according to the laws of psychology, pedagogy and physiology. The mechanism of this process is most clearly revealed in the taxonomy of the American educational psychologist B. Bloom.

According to the results of our study, B. Bloom's taxonomy, which reflects the stages of cognition based on knowledge, understanding, application, analysis, synthesis and evaluation, does not take into account the procedure for consciously evoking a clear, clear, continuous representation between the procedures "knowledge" and "understanding". According to the requirements of semantic identity, the category "knowledge" means awareness and understanding of the information received. In B. Bloom's taxonomy, this category mainly means receiving and perceiving information. In order for the perceived information to be systematically and logically understood, we tried to develop a new category - "representation". The study of the patterns of representation is due to the fact that in recent years people, especially young people and children, are addicted to endless useless computer and telephone games, they cannot purposefully choose information, understand its content, and conclude. Due to the fact that people have little idea of the consequences of a new world disease - coronavirus, more than 70% of them do not wear masks, participate in public events, and neglect their own and other people's health.

The weakened view of cause and effect in the cognitive process in humans is a research problem. Solving this problem is the aim of the study. The purpose of our study is to develop the category of "representation" and substantiate its place in B. Bloom's taxonomy to optimize the cognitive process. Research methods: theoretical analysis of the literature, questioning, experiment, modeling, the method of functional value analysis (AFA). To this end, since 2010, we began to research and develop the category "Representation in order to optimally organize the cognitive activity of students and students. In his taxonomy of goals, B. Bloom does not separately consider the presentation process as a category. According to the laws of psychology, the cognitive process proceeds on the basis of receiving, processing and inference through the analysis and synthesis of this information. The organs of sensation, perception, memory, thinking, imagination are actively involved in this process, which will ensure the appearance of the idea.

The category "Knowledge" in taxonomy includes such processes as the reflection of information, its perception, the activity of memory, thinking and imagination. We have divided these mental processes into two parts:

- reflection of information, perception and fixing it in memory are included in the functions of the knowledge procedure;
- the transfer of information from memory to thinking and imagination, where there is a complex process of understanding the reflected information, diverse

forms of representation, capturing cause-and-effect relationships and relationships - is included in the functions of the category "representation". We will consider the patterns of formation and implementation of this process in this article.

The mastery of B. Bloom's taxonomy by teachers is a part of their professional instrumental training, since this systematic training includes theoretical, methodological, practical and methodological training. In this regard, the opinion of I. Zakharova sounds relevant, which emphasizes that "... the solution of the problems of education begins with the professional training of teachers. Without a qualitative growth of pedagogical professionalism, she notes, we will be doomed to remain in the past" [4 p. 5].( 3 ) Life circumstances require that it is necessary to teach future teachers the skills and abilities to purposefully evoke and retain in the memory of students bright, clear, long-lasting ideas. This requirement is of particular relevance today, when the computer receipt of immense information via the Internet, disks and electronic sources does not allow a person to normally focus consciousness and attention on an object, to call and hold an idea for its awareness and understanding. A person thinks as he imagines, as he thinks, as he says and does.

The activation of the activity of thinking, which is closely related to the receipt of information, its analysis, comparison and synthesis, on the basis of which an adequate conclusion proceeds, aimed at practical implementation, requires a worldwide phenomenon - a pandemic - viral poisoning not only of human life-support organs, but also stupefaction, clouding his consciousness and spiritual world. One of the symptoms of coronavirus infection is a weakening of memory, increased forgetfulness, which is why a real picture of the danger of infection does not occur in thinking and imagination, i.e. a person clearly, clearly, intensely does not represent the cause and effect of this infection. Perhaps that is why, due to the poor understanding of the consequences of coronavirus infection, most people do not wear masks, rarely wash their hands, hug, even kiss when they meet, and organize public events. This paradoxical phenomenon leads to a decrease in his responsibility for his own and others' health, a feeling of indifference to himself and others. We called this mass phenomenon the phenomenon of indifference to one's physical and spiritual health. This phenomenon will intensify the problem of investigating the psychological and social roots of representation formation.

A modern specialist, even at school, college, then at a university, must be able to generate new ideas, think creatively, work competently with information, be able to use new ideas in practice, and obtain competitive results [4 p. eleven]. (3) The presented and understood information provides the basis for the development of innovative thinking of a specialist. In this article, based on a long analysis of the formation of an active cognitive process in learning, we will try to substantiate the role of the "Representation" procedure for a clear understanding, application, analysis, synthesis and evaluation of the information received. Representation is the restoration by memory of the image of a perceived object or phenomenon, as well as the creation of an image by imagination. Representation is the process and result of the mental reconstruction of images of objects and phenomena that do

not currently affect the human senses. Images of representation are the basis of our memory in the full sense of the word.

The main requirement of modern development to the system of education of the younger generation is the transition to competence-based learning. It is implemented on the basis of new pedagogical technologies and makes it even more relevant to consider the problems of studying the "Representation" process as an additional category. The problem of enhancing the cognitive activity of schoolchildren and university students is actualized by the Russian methodologist of pedagogy B.S. Gershunsky and sees its solution in the use of innovative, creative methods of teaching and education. He sees the strength of American science and higher university education in the fact that US universities, in addition to their educational functions, also perform purely scientific, research functions purposefully and systematically. He emphasizes that the task is for the general education school to adopt the same method of activating the cognitive activity of students, so that the entire pedagogical process is permeated with problems and heuristics. [3p.210] ( 4 )

According to the researcher B.B. Aismontas, the use of new systemic methods of a cognitive nature affects the productivity of memory, the hallmark of which is: the meaningfulness of information, its coherence, understandability, visibility and rhythm. This is how the cause causes the development of scientific, logical and critical thinking (1. p.63). (5) Such training can be organized and its optimal functioning can be carried out based on the use of innovative pedagogical technologies. Such pedagogical technologies include the system of educational categories of the American teacher-psychologist B. Bloom. The targeted organization of training and education of the younger generation based on such interactive methods will ensure the professional competence of the future specialist. At present, all universities of the Republic of Uzbekistan are gradually moving to a modular and credit organization of the educational process. Modular training and its credit organization, as an effective process of creating educational work, are aimed at ensuring the professional competence of future specialists, which also proceeds on the basis of B. Bloom's taxonomy, and actualizes the problem of scientific development of the "Representation" category. The development of professional competencies of teachers through modular training is designed to ensure the formation of practical abilities to solve specific tasks of training and education. Ultimately, these abilities are expressed in skills and abilities, which are expressed at the level of methodological readiness for activity. Such skills and abilities develop successfully when using the above taxonomy in the educational process.

### **Materials, Methods and Results**

According to the results of our study among teachers of SamSU, the Samarkand branch of TUIT, the Samarkand Medical Institute, which was conducted in the last twelve years, many are poorly aware of the concept of "pedagogical thinking", the laws of transforming the information received to the level of understanding, the psychological patterns of the competence-based approach to their profession. [8.p.54] (7.) There is a certain trend of a superficial approach of teachers to the psychological and pedagogical foundations of modular-credit education and

competent preparation for it. Therefore, we are for the development of competent professional-pedagogical and innovative thinking of future teachers in the classroom in the disciplines "Pedagogy", "Psychology",

"Innovative pedagogical technologies", a special course "Development of skills and competencies", introduced them to the psychological patterns of the cognitive process in the way of a specially evoked presentation [7.p.92] ( 8. ) The following methods were used in the study: a comparative analysis of foreign and domestic pedagogy, psychology, questioning, observation, testing, mathematical analysis of the information received. The results of the study were covered at many international conferences, meetings, two monographs were published (8.22), articles were published (9.10) in international and local journals. Practice has shown that the organization of the cognitive process and with the help of the "Representation" procedure greatly optimizes mental activity, develops criticality, divergent thinking, and creative imagination.

According to B. Bloom's taxonomy, educational goals are divided into three parts: cognitive, affective and psychomotor. The cognitive (cognitive) area includes goals from memorizing and reproducing the studied material to solving problems, during which it is necessary to rethink existing knowledge, build their new combinations with ideas, methods, including the creation of a new one. The function of the category "Representation" is that from the information received and stored in the memory to create as bright and long-lasting images of the representation as possible, to show the connections between the parts of the received image, to create as many images and pictures about objects, phenomena and processes as possible in order to capture the causal investigative links. The affective part of the cognitive process reflects the fact that a person reacts emotionally. Affective goals are related to human relationships and emotions. The brightness, clarity, intensity of the evoked performance creates a vivid, clear and intense feeling.

The psychomotor part provides the ability to manipulate tools or tools. In this part, skills are developed that are also associated with emerging ideas. In our study of the patterns of the cognitive process with the help of B. Bloom's categories, we studied the role of the procedure for creating the representation process to ensure a more efficient flow of the understanding process. Memory, thinking, imagination, emotions, etc. actually participate in the process of appearance of a representation. In general, a representation this is the process and result of the mental reconstruction of images of objects and phenomena that at the moment do not affect the human senses. It is also known that representation images are the basis for reflecting information in memory, fixing and reproducing it.

The interpretation of the concept "Representation" is given in dictionaries. The concept of "Representation" has several meanings. In the dictionary of S.I. Ozhegov, five meanings of this concept are given. Only the fourth interpretation of this concept as "reproduction in the mind of previously experienced perceptions" is more or less suitable for its logical understanding [S. 472]. ( eleven )In the Dictionary of Synonyms of the Russian Language, the concept of . "Representation" is interpreted as "seeing, thinking, imagining mentally,

recreating, reproducing someone - 1., What - 1." [7; pp.232-233].(12) A more specific interpretation of this concept in psychological terms is given by the Psychological Dictionary. "Representation is a visual image of an object and phenomenon that arises on the basis of past experience by reproducing it in memory or imagination" (p.272-273). (13) In our study of the concept of "Representation", we rely on the interpretation of this concept in psychological terms, as a visual image of an object and phenomenon that arises on the basis of past experience by reproducing it in memory, thinking and imagination.

On the basis of such formation of a representation, a weak or complete understanding of it directly and indirectly depends on previously and just received information. Here, interactive pedagogical methods come to the rescue: brainstorming, cluster, syncwine, the ZHU system, etc., which are designed to evoke vivid, complete presentations. The quality and nature of the presentation is greatly influenced by activity. Creative activities associated with innovative intelligence are primarily associated with the development of representation, which gives rise to new ideas and creativity. The ability to present influences the choice of a profession being mastered. From the point of view of psychology, the development of the ability to represent in one or another modality (visual, auditory, tactile) is an adaptive mechanism that is inherent in our psyche by nature. Performing this or that activity, the brain adapts to it, gradually increasing the quality and efficiency of work.

Education in the 21st century is considered the main way for the sustainable development of society in the world, obtaining a quality education and encouraging the creative abilities of students and students is the main requirement of the international educational concept until 2030. (fourteen) The conscious evoking of ideas in pupils and students by keywords, basic "concepts", "terms", categories of a topic or section of the subject being studied is aimed at increasing the efficiency of the cognitive process, thanks to which, mentally trained, catching cause-and-effect relationships, they learn these laws, moving from the simple to the complex, from the unknown to the known, from understanding the form of phenomena, the processes of reality to their essence, which is the basis for the development of knowledge. Representations, as the basis of the imagination, stimulate it.

All types of imagination need to create a bright, clear, voluminous, long-lasting presentation. This requires the teacher to have special knowledge and skills to develop the representation of learners, which improves their learning activity. Recreating imagination, as a prerequisite for creativity and the development of innovative thinking, manifests itself when a person needs to recreate the representation of an object that matches its description as fully as possible. The same representations are recreated in the verbal description. Sometimes a representation is recreated based on diagrams and drawings. This develops a person's ability to spatial imagination. Here an image is created in three-dimensional space.

The development of ideas goes from the initial, incomplete, undifferentiated, often incorrect and fuzzy, little connected with each other images of reality to the construction of distinct, bright images of reality, distinguished by a certain



completeness and correctness, interconnected with each other. The physiological basis is the "traces" remaining in the cerebral cortex of those excitations that took place during sensations and perceptions. General and individual representations are visual in nature: these are images of certain specific features of objects, phenomena, processes, states, etc. Representation as the basis of imagination determines its productivity. Imagination it is the creation of something new in the form of images-representations. For representation, the stimulus is not an external object, but a word or thought about the purpose of the object. A word or thought evokes an image, an idea, revives the traces of physiological reactions stored in the brain, corresponding to past perception processes.

According to the results of our study, according to the laws of psychology, the category "Knowledge" is understood fully, steadily and practically, when it (information) is clearly, clearly, steadily presented. Educators should know the psychological and physiological roots of evoking such ideas in the cognizers within the limits of a reasonable and professional imagination, which feeds the formation of scientific, practical and innovative thinking. A consciously evoked representation, which is bright, clear and voluminous, greatly facilitates the origin of such thought processes as deduction, induction, comparison, definition, classification, analysis, hypothesis. Based on these processes, correct and effective thinking occurs. Dialectical thinking is focused on the problem, reveals the contradictions of the object, determines the trends of its change and development. The core of such thinking is the ability to reveal a contradiction, to find ways to resolve it through concrete consideration, analysis of the existing state of affairs. The development of such thinking is the basis of its innovativeness, which is the source of invention and rationalization.

The stability and clarity of the representation helps the cognizer to define the concept and classify it. The role of representation in understanding causal relationships in the process of forming thoughts is invaluable. A cause-and-effect relationship in thinking is found when an individual in the representation discovers connections between a change in one phenomenon and changes in another phenomenon, and the rest of the circumstances remain unchanged. Here a person catches the fact that between these phenomena there is a causal relationship. It is the core, the basis for the formation of knowledge. The use of the "Repose" procedure in lessons and lectures, practical exercises develops such didactic possibilities:

- organizes the perception and observation of the student and student of reality;
- influences the sensory sphere of the cognizer, develops his observation, thinking and imagination;
- stimulates cognitive and creative activity;
- provides long-term memorization of internal connections and relations of phenomena, processes and objects of the objective world;
- contributes to the filling of generalizations with specific content;
- increases the quality of assimilation and understanding of the perceived material.

We conducted an experiment on using the "Representation" procedure to deepen knowledge and develop skills at school No. 75 in Samarkand. In the labor classes of 30 students of grades 5, 6, 8 in knitting, cooking, embroidery, creating bouquets from different papers, teachers used innovative pedagogical technologies as a cluster, Z.Kh.U. Venn diagram, cards, writing an essay or essay, questions and answers that caused students to activate the perception of information, memory, the work of thinking and imagination by forming a vivid and intense presentation. The same methods were used among the students (25 people) at the labor circle. The experiment showed that in 90% of students, knowledge and skills are formed faster and remain in memory for a long time, if students purposefully evoke clear ideas during theoretical and practical classes.

Pedagogical activity is a complex system of interactions, management, control and evaluation, which is aimed at another open system - a person, which is dynamic, adaptive, rationally sensual. Here the cause-and-effect relationship is also special, complex. A complex cause produces a complex result. Part of the cause causes a certain part of this result. For future teachers, before experiments, before the application of new ideas in the practice of educational work, such a procedure can be carried out in representations that greatly simplify the search and find effective ways of teaching and educating. Representations, speaking in today's language, have the property of transformability, which allows immeasurably to manipulate the available information, to innovatively create new models of the phenomenon. The foregoing indicates the invaluable role of representation as the main part of the imagination for the formation of logical, critical and professional thinking of the cognizing person. Therefore, in our study, as in B. Bloom's taxonomy, we tried to create a class of action verbs that reflect the structure and semantic significance of the action for the reproduction of a qualitative, practical idea. The number of such verbs was 50 units. See table No. 1

Table 1  
Action verbs that reveal the meaning of the category "Presentation"

| No | Verbs      | No | Verbs       | No | Verbs      |
|----|------------|----|-------------|----|------------|
| 1  | Create     | 18 | Form        | 35 | Compose    |
| 2  | Form       | 19 | Transform   | 36 | Form       |
| 3  | See        | 20 | Reestablish | 37 | See        |
| 4  | See        | 21 | Accomodate  | 38 | Design     |
| 5  | Create     | 22 | Cut out     | 39 | Design     |
| 6  | Correct    | 23 | Inflate     | 40 | Catch      |
| 7  | Catch      | 24 | Skip        | 41 | Correct    |
| 8  | Correct    | 25 | Arrange     | 42 | Mix        |
| 9  | Mix        | 26 | Systematize | 43 | Complicate |
| 10 | Complicate | 27 | Confuse     | 44 | Clarify    |
| 11 | Clarify    | 28 | Heat up     | 45 | Simulate   |
| 12 | Simulate   | 29 | Zoom in     | 46 | Imagine    |
| 13 | Imagine    | 30 | Compress    | 47 | Manifest   |
| 14 | Manifest   | 31 | Separate    | 48 | Recreate   |
| 15 | Recreate   | 32 | Crush       | 49 | Structure  |

|    |           |    |           |    |       |
|----|-----------|----|-----------|----|-------|
| 16 | Structure | 33 | Quit      | 50 | Learn |
| 17 | Learn     | 34 | Hightlite |    |       |

More than 500 university teachers, students, masters, doctoral students, school teachers participated in the experiment. They were asked: out of 50 action verbs associated with invoking a presentation, choose the 10 most necessary for creating a high-quality presentation and number them in order of importance. According to the results of the study, it was revealed that for the emergence of a representation, first of all, it is necessary to carry out the procedures for restoring the image of the necessary information from memory, to hold the information, to systematize, to provide its vision, to design on its basis, to imagine, to structure its components, to foresee, form and design based on it.

These are the main ten verbs of action, which, in our opinion, will help for the emergence of a qualitative representation in the cognitive process, on which a deeper understanding of the perceived information and the development of scientific, practical, innovative thinking and consciousness of the individual in everyday and professional life depend. Thus, we believe that in the six-level hierarchical structure of B. Bloom's cognitive sphere, it is necessary to introduce the seventh category "Representation", which will be located after the category "Knowledge" and before the category "Understanding".

In B. Bloom's pyramid, the category "Representation" performs the function of developing a list of tasks for cognizers to restore in memory previously perceived impressions (temporary neural connections), knowledge, feelings, their causes and possible consequences. Such tasks are aimed at resuming, recreating and penetrating into cause-and-effect relationships, restoring, capturing connections, relationships in representational images. According to B. Bloom's taxonomy for the category "Submission" can be such learning objectives: Levels of learning goals. "Representation" - reproduction in the imagination and thinking of information, ensuring clarity, brightness, stability of the image of representation, capturing connections between the parts of the represented objects, phenomena, showing causes and effects, which provides a deep understanding.

Specific actions of students, students to achieve this level. Form a bright, clear, stable representation, to restore previously received information in memory, to focus on the connection between objects, phenomena, processes, to capture patterns, to form new knowledge, skills and abilities. The following interpretation of B. Bloom's pyramid reflects the relationship between the requirements of the categories and the performed intellectual and physical actions of the cognizing person. What procedures does the cognitive process according to B. Bloom with our addition consist of?

- Choose, evaluate, predict - this takes place at the level of evaluation.
- Relate, create, discuss, experiment - this takes place at the level of synthesis.
- Divide, study, go deep - this takes place at the level of analysis.
- Use, apply - this happens at the level of application.
- Describe, explain - this takes place at the level of understanding.
- Restore, develop, create, hold - this takes place at the presentation level.

- Highlight, show, tell, describe - this takes place at the level of knowledge.

According to psychological laws, one can clearly, clearly, stably and fully represent: an object, a phenomenon, a process, connections between objects, phenomena and processes, cause-and-effect relationships from contact between them, capturing these connections, their perception and analysis in thinking for practical reasoning. What gives us the use of the developed category "Representation" for the activation and practical effectiveness of the process of cognition? These regularities, their use in the presentation organization procedure optimizes the cognitive process, activates the development of creative, innovative professional thinking. Knowledge of the regularities of the "Representation" category for the development of critical and logical thinking of B. Bloom, who knows according to the pyramid, will ensure the development of high-order thinking skills, on which the formation of practical, creative thinking depends.

The procedures performed from the first to the fifth category (from top to bottom of the pyramid) develop high-order thinking skills, form creative and innovative thinking. Work done in the sixth and seventh categories develops low-order thinking skills. The development of high-order thinking skills directly depends on the low-order thinking skills, where the role of representation is great. The developed ability to represent images of possible processes, phenomena and objects intensifies the formation of skills and abilities to acquire knowledge, its understanding and critical, innovative thinking. Scientific, practical thinking, developed with the help of a systematic, complete, clear, continuous representation, forms such a relationship between thinking and imagination that determines the quality of thinking in a problem situation by methods of analysis, synthesis, comparison and generalization, the quality of imagination of an uncertain problem situation by methods of agglutination, typification, hyperbelization and schematization. Here an organized system of images develops in a certain way, causing new synthetic representations. Mental actions here function at the search level. This level is characterized by a consistent and independent solution of cognitive tasks, which ensures the creative assimilation of new knowledge, self-management of the assimilation process. The process of evoking a representation mediates the appearance of such mental actions as: analysis, synthesis, hypothesis, thought experiment, ideal model, and others. The vivid representations evoked in the classroom form and contribute to the improvement of such characteristics of creative thinking:

- awareness of dominant ideas, change or rejection of them;
- finding a different approach to phenomena;
- going beyond the limits of logical thinking;
- susceptibility to random events.

At the "Knowledge" level, the ability to evoke a clear, concise, continuous presentation significantly improves the memorization and reproduction of the studied material. Here, on the basis of representation, cognizers reproduce terms, specific facts, methods, procedures, basic concepts, rules and principles. At the level of "Understanding", the cognizers transform the material from one form of expression to another, interpret the material, suggest the further course of phenomena and events. The effectiveness of these processes is closely related to

the ability and skill to purposefully represent. It will help the most complete explanation of the facts, rules and principles. At the level of "Application", a developed understanding will help to form the ability to use the learned material in specific conditions and new situations, to obtain specific results. Pupils and students learn to apply this knowledge in new, non-standard, practical situations. At the level of "Analysis" for learners, the skill of representing mediates the development of their ability to break the material into parts in order to understand the internal structure, the connections between the parts. A clear understanding in the analysis will help students in isolating parts of the whole, identifying relationships between them, determining the principles of organizing the whole, seeing errors and omissions at the level of reasoning, distinguishing between facts and consequences, and assessing the significance of data.

At the level of "Synthesis", the evoked idea of something develops the skills of the learners to combine elements, parts to create a whole, innovative. Synthesis will provide an aggregate state of interconnected elements aimed at performing a specific function. At this level, the ability to prepare something new that did not exist before develops. This level develops the ability to plan experiments, make a list of tasks, develop inventive skills. At the "Evaluation" level, the use of the "Presentation" category improves the formation of students' skills to evaluate the value of this or that material, the results of their activities, and other people. The ability to clearly and continuously represent a process or phenomenon develops in pupils and students the skill of evaluating the logic of the information received, its significance, evaluating the correspondence of conclusions to the available data, evaluating the significance of a particular product of activity. In conclusion, we can cite the following opinion of the Russian scientist Sapogova E.E., who argues that the laws of cognition are in a special relation of the subject of cognition to the cognizable, in the subject - subjective interaction, in dialogic communication, in the implementation of the mindfulness and experience of mental attitudes when teaching psychology. phenomena. ( fifteen )

## Conclusions

- The cognitive process proceeds according to the laws of psychology, physiology and pedagogy, as a systemic managerial phenomenon.
- Part of the teachers do not know the psychological patterns of the cognitive process and methods of managing it.
- Teachers are required to know B. Bloom's taxonomy.
- The cognitive process is activated by the implementation of the "Representation" procedure in the process of educational work.
- The use of the "Representation" procedure activates the processes of memory, thinking, imagination, develops emotional - sensory perception, logic, criticality, systematic conclusions.
- Coronavirus disease as a cause will lead to a decrease in the analytical thinking of a person due to a false representation of its consequences.

## Offers

- Teachers should know the psychological laws of the cognitive process, methods and ways of managing it.

- It is necessary to create special courses, hold seminars, conferences, organize research centers for teaching teachers the skill of optimal organization of the cognitive process.
- B. Bloom's taxonomy is a complex, systemic, logically complete system. In classes, practical work, seminars, etc., more attention should be paid to the analysis and practical application of this taxonomy, enriched by the category "Representation" developed by us
- To teach teachers the real and optimal use of B. Bloom's taxonomy based on the psychological laws of knowledge.
- Since the pandemic is a worldwide phenomenon, in each lesson with students, it is necessary to devote 2-3 minutes to emphasizing the danger with vivid examples that evoke clear ideas.

Thus, the introduction of the category "Representation" in the taxonomy of B. Bloom and the management of the cognitive process with its help will greatly improve the quality of the knowledge gained, the development of skills and abilities of practical activity.

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