



Cognitive psychology in education and management

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ABSTRACT

This article is devoted to a brief overview of this direction, as well as an overview of the therapeutic approach associated with it – cognitive psychology. Cognitive psychology is one of the relatively young, but quite progressive and very popular areas. Cognitive psychology is a branch of psychological science that studies the cognitive processes of the human psyche. Research based on the cognitive approach in psychology is focused on the study of feelings, attention, memory, imagination, logical thinking, presentation of information, and the ability to make decisions. This is a whole concept, focused on the activity of consciousness and the process of cognition. The internal cognitive schemes and activities of the organism involved in the process of cognition are of primary importance in it.

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Ta'lim va boshqaruvda kognitiv psixologiya

ANNOTATSIYA

Kalit so'zlar:

psixologiya,
kognitiv psixologiya,
ta'lim,
boshqaruv,
tanqidiy fikrlash,
bilish,
yondashuvlar.

Ushbu maqola ushbu yo'nalishning qisqacha sharhiga, shuningdek, u bilan bog'liq terapevtik yondashuv – kognitiv psixologiyaga umumiy nuqtai nazarga bag'ishlangan. Kognitiv psixologiya nisbatan yosh, ammo juda ilg'or va juda mashhur sohalardan biridir. Kognitiv psixologiya – psixologiya fanining inson psixikasining bilish jarayonlarini o'rganadigan sohasi. Psixologiyada kognitiv yondashuvga asoslangan tadqiqotlar his-tuyg'ularni, diqqatni, xotirani, tasavvurni, mantiqiy fikrlashni, ma'lumotni taqdim etishni va qaror qabul qilish qobiliyatini o'rganishga qaratilgan. Aslida, bu ong faoliyati va bilish jarayoniga qaratilgan butun bir tushunchadir. Unda bilish jarayonida ishtirok etuvchi organizmning ichki kognitiv sxemalari va faoliyati birinchi darajali ahamiyatga ega.

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Когнитивная психология в образовании и управлении

АННОТАЦИЯ

Ключевые слова:

психология,
когнитивная психология,
образование,
менеджмент,
критическое мышление,
познание,
подходы.

Данная статья посвящена краткому обзору когнитивной психологии, которая является одним из относительно молодых, но прогрессивных и популярных направлений психологической науки. Когнитивная психология изучает когнитивные процессы человеческой психики, такие как чувства, внимание, память, воображение, логическое мышление, представление информации и способность принимать решения. Это направление ориентировано на деятельность сознания и процесс познания, при этом ключевую роль играют внутренние когнитивные схемы и деятельность организма, участвующие в познавательном процессе.

Cognitive psychology studies the process of obtaining information about the world by a person, how it is presented to them, how it is stored in memory and becomes knowledge, and also how this knowledge affects a person's behavior and attention. This direction concerns the entire range of mental processes, from sensations to perception, attention, learning, pattern recognition, memory, concept formation [3]. Also, it concerns thinking, language, memory, imagination, emotions and developmental processes, as well as all possible behavioral areas. This direction appeared in the 50s of the XX century in the USA. Although, the attempts to study the problems of consciousness have been made before, the philosophers of antiquity wondered where thoughts and memory are located. For example, in ancient Egypt, they were believed to be located in the heart. This idea was also supported by Aristotle. However, Plato believed that the place of their storage is the brain. Without going into details, we can say that people showed great interest in the problem of consciousness hundreds of years before cognitive psychology developed into a scientific direction. One of the people who influenced the development of cognitive psychology more seriously is the German psychologist and physiologist Wilhelm Wundt, because he repeatedly said that consciousness has a creative potential. Subsequently, this topic was partially developed in functionalism and structuralism, and only with the advent of behaviorism, which focused not on consciousness, but on behavior, at the beginning of the 20th century, interest in it faded for almost half a century [7].

In the 1950s, a new stage in the development of cognitive science began, one of the pioneers of the movement was the American psychologist Edward Tolman. He pointed out the importance of considering cognitive variables and contributed to the abandonment of the stimulus-response approach inherent in behaviorism. However, the most significant contribution to the formation of the approach was made by the Swiss psychologist Jean Piaget, who studied child psychology, focusing on the stages of cognitive development. And even despite the fact that Piaget's work was devoted mostly to child psychology, the range of applicability of the cognitive approach has significantly expanded, and Piaget himself received the award "For outstanding contribution to the development of science" [9].

Cognitive psychology in its research relies on several fundamental ideas. In the thesis form, we present each of them:

- The main objects of study are cognitive processes. These include thinking, speech, perception, imagination, attention and memory. In addition to them, cognitive science deals with the study of human and artificial intelligence, the emotional sphere of personality, developmental psychology, and the process of pattern recognition.

- The most important premise of cognitive psychology is the study and analysis of cognitive processes in the form of computer functions. Representatives of the direction consider the cognitive processes of the human psyche exactly, for example, an electronics engineer studies a computer. The computer performs many operations related to receiving, processing, storing and issuing data. Human cognitive functions are responsible for similar operations.

- The third idea follows from the second. It says that the psyche processes data in stages. Those any stimulus received from the outside world goes through a chain of ordinal transformations.

- Mental information processing systems have their own limiting capacity. This assumption explains the direction of work and tasks of cognitive psychologists – they seek to find the most natural and most effective methods of working with information entering the psyche from the outside world (cognitive therapists use this knowledge to correct the behavior of patients).

- All information that enters the psyche through cognitive processes is encoded and reflected in a special (individual) way.

- For any research, it is necessary to use chronometric means to assess the response time to the proposed tasks and / or the speed with which the psyche responds to signals. Cognitive psychology does not use introspective technologies (when a person himself observes the processes taking place in the psyche and does not use tools and standards), and considers them to be insufficiently accurate [6].

These ideas may seem quite simple at first glance, but in reality they form the basis on which a whole range of complex scientific research relies. This suggests that cognitive psychology, despite its relatively young age, is a very serious scientific branch. By studying the processes of cognition that take place in the psyche, it can draw certain conclusions based on empirical evidence. The cognitive approach in psychology makes it possible to explain human behavior through a description of the processes of cognition, to study and interpret the processes of perception, pattern recognition, problem solving, memory functioning; to explore the mechanisms of constructing a cognitive picture of the world, unconscious perception and cognition, not only in humans, but also in animals [5].

All research in the field of cognitive psychology is carried out using special methods. First of all, these are methods of microdynamic and microstructural analysis of perceptual processes. The microstructure and microdynamics of mental activity are the subject of cognitive science, which studies the features of mental life. The structure is a relatively static representation of the system of organization of the elements of mental processes [4]. And microdynamics is the study of the processes occurring in mental life through the processing of information coming from the outside world. The human actions are considered as parts of a single intrapsychic system, and not as separate phenomena.

The next method is the microgenetic method, based on one of the types of Gestalt theory (Leipzig school), which focuses on the features of the formation of mental phenomena. According to this theory, the images of objects do not appear in the human

mind immediately, but after passing through several stages, which can be identified by creating certain conditions. But the main task of the method is not to study the final result of the thought process or its relationship with conditions, but the process itself, leading to this result. These three methods are designed to analyze thinking and cognitive processes. But there is another one that attracts the most attention [7]. This is a personality construct replacement method developed by the American psychologist George Kelly in 1955. Despite the fact that the cognitive approach in psychology was still being formed, Kelly's works became decisive for him, and today such an important field of practical cognitive psychology as cognitive-behavioral psychotherapy is built around them. When considering it, we will touch a little deeper on the above method [6].

In general terms, therapy can be defined as a comparative analysis of the features of people's perception and interpretation of external information. This analysis consists of three steps:

- At the first stage, the patient works with various tools to help identify erroneous judgments and then find their causes.
- At the second stage, the patient, with the help of a therapist, masters the techniques of correct correlations of the phenomena of the surrounding world. The task of a specialist is to show a person the benefits and harms, advantages and disadvantages of an existing construct.
- At the third stage, the patient must become aware of the new construct and begin to build his behavior on its basis [11].

It is important to note that the specialist only starts the treatment process, and then simply corrects it. And a lot here (which is also typical of other areas of psychiatry and psychology) depends on the person being treated. Kelly's theory describes a conceptual schema that allows a person to comprehend reality and create specific behavioral patterns. By the way, it was supported by the famous Canadian and American psychologist Albert Bandura. He developed a "learning by observation" system used to change behavior. The personal construct is used by world experts who study the causes of low self-esteem, fears and phobias, depressive states.

Today we need modern organizational development methods based on the use of humanitarian and engineering approaches, which will allow to obtain a synergistic effect from their interaction.

The humanitarian approach considers the organization as a social organism. Sociology is used as a methodological base and psychology. This approach can also be described as person-centered in all senses. The personality is the main object and subject of transformations [2].

The engineering approach to the development of organizations evolved from methods of creating complex in technical systems. Methodological base – systems theory, system analysis, cybernetics. This approach develops the technology and structure of the organization's information flows and includes system analysis, scientific organization of labor, TQM (Total Quality Management), SADT (Structure Analysis and Design Technique), business process reengineering [3].

In industrialized countries, the new millennium has coincided with the beginning of a period of major social change, stimulating attention to more effective management of intellectual resources in the economy and knowledge management. The analysis of social prerequisites allows us to draw a conclusion about a certain regularity in the emergence

of the concept of knowledge management. Gradually, the emphasis shifts from material production to innovative technologies, production of information and knowledge. Throughout the history of mankind, knowledge has always been an important factor in intellectual and economic development. But it is in recent years that the process of obtaining new knowledge: advanced technologies have directly affected the innovation process. New means of processing and transmitting information, distributed information networks have made routine many procedures that were in principle impossible even 20-30 years ago.

Under these conditions, new management technologies and *approaches in management* are developing, in particular, a cognitive approach in management. Mastering knowledge about "management knowledge" becomes an urgent need. A prerequisite for the use of *cognitive approach* in management practice is the complexity of the analysis of functioning processes, and hence the adoption of managerial decisions, in such areas as economics, sociology, ecology. Due to the fact that the active component in the process of functioning in these areas is human. The multidimensionality of the processes occurring in them and their interconnectedness also influence, as a result of which it is difficult to isolate and investigate individual phenomena: the processes occurring in them must be considered as a whole. Lack of sufficient quantitative information about the dynamics of processes compels a qualitative analysis. The number of situational factors can be measured in hundreds.

Development of organizational management in the direction of increasing the efficiency of the functioning of the organization, situational adequacy in conditions of uncertainty, rational use of resources (both material and intellectual) is associated with the concept of organizational knowledge. A significant contribution to the theory and practice of organizational knowledge was made by well-known specialists – T. Davenport and L. Prusak in the field of organizational knowledge management. They define organizational knowledge, as follows: knowledge is an ever-changing mix of structured experiences, values, contextual information and insights (insight) and serves as the basis for assessing and assimilation of new experience and information. It arises and is used in the minds of its bearers. In organizations, knowledge exists not only in documents or repositories, but also in accumulated techniques, processes, practices and norms [1]. The information is in response to questions "who?", "what?", "where?", "when?", i.e. such data is perceived in relation to other information (for example, it is an electronic database with clear links between the tables included in it), while knowledge is information in a context capable of producing a compelling to action understanding. Knowledge uses information to achieve a certain result and answers the question "how?".

Understanding – the ability to create new knowledge based on previously acquired, the answer to the question "why?". Knowledge and understanding are different from memorization and study. In information (including computer) technology functions, understanding is performed by analytical and intellectual systems that form new probable or possible knowledge based on available data, information and knowledge. However, you should not try to unequivocally divide everything into data, information and knowledge.

Cognitive management as a concept arose from the understanding of the fact that directions of competition has changed, and the competition for intellectual resources has replaced dependence on natural resources. Cognitive management is defined as

systematic management of the processes by which knowledge is identified, accumulated, distributed and applied in an organization to improve its performance. Cognitive management in the system of organizational learning is described on the basis of the principles in practice. Basic principles of cognitive management are as follows [1, 11]:

- knowledge arises and resides in people's minds;
- sharing knowledge implies trust;
- technologies make possible new forms of cognitive behavior;
- knowledge sharing should be supported and rewarded;
- the management support and additional resources needed;
- knowledge use initiatives should be preceded by pilot programs;
- initiatives should be evaluated using qualitative and quantitative indicators;
- knowledge is a product of creativity, and in order for it to develop in new directions, it must be encourage.

The main thing in cognitive management is continuous learning based on a variety of experiences; systematic management processes by which knowledge is identified, accumulated, distributed and applied. However, the development of cognitive management procedures is often not only in demand, but also causes resistance. But, clearly realizing that knowledge is becoming the most important resource and, accordingly, the key direction of economic development, leading companies seek to constructively overcome organizational resistance to the introduction of cognitive management technologies.

The main trend in the field of cognitive business management has become an active application for information-analytical and cognitive decision support systems in the infrastructure of enterprises and organizations. Given the diversity tasks solved in the management process, in the structure of the corporate management pyramid there are clearly several information layers corresponding to the levels of management: operational, tactical and strategic. Senior managers make strategic decisions. It is advisable to introduce an additional level between top management and managers in the middle level. They are experts in various fields. They are advisors to managers top and middle level. Many of these professionals can be considered as employees' knowledge.

In conclusion, three main areas and basic agreement on basic principles, cognitive science, trying to answer the ever-increasing questions, united more and more new disciplines aimed at developing appropriate to the problems. However, the broadening of the problem has led to the loss of agreement on basic concepts and notions, and cognitive science gradually became the science of about everyone". Of course, the development of the considered areas was the result of criticism of the basic postulates in the cognitive psychology and cognitive science. The rate of growth of scientific knowledge, various empirical data not only does not bring to understanding the general mechanisms of functioning human knowledge, but also removes from them. So, for example, neurophysiological methods make it possible to test a number of constructed theoretical models.

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