

## BASIC ANALYSIS OF THINKING

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### ABSTRACT

*In this article, the analytical operations of thinking operations theoretically illuminated and grounded. The basis for the conclusion is the initial judgments from which a new judgment is derived. This new judgment, obtained by logical means from buildings, is called a conclusion. Mental operations with visual-active and visual-figurative thinking are carried out with information that gives us emotional cognition in the form of direct perception of specific objects and their images-suggestions.*

**KEYWORDS:** *Synthesis, Comparison, Object, Abstraction, Visual-Effective, Ontogeny, Discursive, Holistic, Contemplative, Contemplative Operations, Integration.*

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### INTRODUCTION

Analysis is the mental division of the whole. It is based on a desire to know the whole more deeply by studying each part of it. There are two types of analysis: the fragmentation of the whole as a mental fragmentation and the analysis of its individual characteristics or aspects as a whole as a mental isolation.

Synthesis is the mental connection of parts to a whole. As in the analysis, two types of synthesis are distinguished: synthesis as a mental combination of integral parts and synthesis as a mental combination of different signs, aspects, properties of objects and events.

Comparison is the mental identification of similarities and differences between objects and events, their properties or qualitative characteristics.

Abstraction (distraction) - the mental separation of important features or characteristics and at the same time abstraction from non-essential features; signs of objects and events. Abstract thinking is the process of distinguishing any moment, side, feature, or feature of a perceived object and considering them without associating them with other features of the same object.

Generalization is the process of mentally uniting an object or event on the basis of common and important features and attributes, reducing less general concepts to more general concepts.

Concretization is the mental separation of a particular feature or feature from the general, in other words - the mental transition from generalized knowledge to a single, definite state.

Systematization (classification) - the mental division of objects or events into groups or subgroups according to similarities and differences (separation of categories according to the essential sign).

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All mental operations (action) take place not in isolation, but in various combinations.

## 1. Types of thinking

There are three main types of thinking that emerge sequentially in the process of ontogeny: visual-effective, visual-figurative, and verbal-logical.

Visually-effective (practical) thinking is a type of thinking that relies directly on emotional impressions from objects and events of reality, ie. their main image (sensations and perceptions). In this case, there is a real, practical change in the situation in the process of concrete actions with specific objects. This type of thinking can only exist in the context of direct perception of the area of manipulation.

Visual-figurative thinking is a type of thinking characterized by reliance on ideas, ie. works with secondary images of objects and real-life events, as well as visual images of objects (drawings, diagrams, plans). Unlike visually-active thinking, the situation here changes only in terms of internal (subjective) appearance, but at the same time the choice of the objects themselves and the most unusual and even incredible combinations of their properties will be possible. Visual-figurative thinking is the basis for the formation of verbal-logical thinking.

Abstract-logical (abstract, verbal, theoretical) thinking is a type of thinking based on abstract concepts and logical actions with them. Mental operations with visual-active and visual-figurative thinking are carried out with information that gives us emotional cognition in the form of direct perception of specific objects and their images-suggestions. Abstract-logical thinking, because of abstraction, allows the creation of an abstract and generalized picture of a situation in the form of thoughts, viz. concepts, judgments and conclusions expressed in words.

This type of thinking develops consistently from content to conceptual in the process of ontogeny.

Adult thinking includes all three types of characters: objective-effective, visual-figurative, and conceptual. The proportion of this type of thinking is determined not only by age but also by individual characteristics and is related to the dominance of one of the hemispheres. The predominance of effective and visual-figurative thinking belongs to people with dominant activation of the right hemisphere, such people succeed in technical activities, geometry and drawing are easier for them, they are prone to artistic activity. People with a predominance of the left hemisphere are more successful in theoretical, verbal-logical thinking, they are more active in mathematics (algebra), scientific activity ... will be. Advanced practical thinking “quickly understand a difficult situation and find the right solution almost instantly” is commonly referred to as intuition.

Intuitive thinking is characterized by the speed of the course, the lack of clearly defined stages, low awareness, and vice versa. discursive, step-by-step, conscious thinking. The high speed of solving intuitive problems is associated with the reconstruction of logical and figurative thinking processes. Of particular importance is the operation of difficult situations (complexity of the situation, lack of time, the need to take into account the opposing forces, high responsibility for each decision). It is these indicators that characterize the work of the doctor. Therefore, in the practical activity of the physician, all these types of thinking are manifested in unity.

Creative and critical thinking. If we look at thinking in terms of novelty, the specificity of the problem being solved, we can distinguish between creative thinking (productive, divergent, creative) and reproductive (reproductive, convergent). Creative thinking is thinking that is the result of discovering something radically new or improved in solving a problem. Guilford, a well-known researcher of creative thinking, has identified four key factors in creativity.

1. Uniqueness describes the originality of creative thinking, an unusual approach to a problem, the ability to respond non-standardly.
2. Flexibility - the ability to respond differently, to share quickly.
3. Integration as the ability to take into account several conflicting conditions, small buildings or principles at the same time.
4. Sensitivity as the ability to sense subtle details, similarities or differences.

While studying creative thinking, Torrance found that creativity peaks in childhood (3.5 to 4.5 years), then in the first three years of school and before puberty. Later, its downward trend was noted.

As barriers to creative thinking, often unconsciously, conformism (the desire to be like everyone else, the fear of separation. So there is an internal censorship - a person rejects everything that may not be accepted by other people) ; rigidity - the desire to think, to go the beaten path, to solve problems in the usual way, to be overly motivated, the desire to find an immediate answer also often forces a person to use the first solution that comes to mind. The rule is not innovative.

Critical thinking is the examination of proposed hypotheses to determine their scope. We can say that creative thinking gives rise to new ideas, and critical thinking reveals their flaws and shortcomings.

Based on all the above, the following qualities can be distinguished in the description of thinking: depth-superficiality; width-narrowness; speed - slowness; flexibility - rigidity; originality-insignificance.

## 1. Basic forms of thinking

Concepts, considerations and conclusions are the main forms in which mental operations are performed in abstract thinking. A concept is a form of thinking that reflects the most general and important features, expressed in words, an object or event of the objective world. Concepts are based on our knowledge of these objects or events. It is common to distinguish between general and individual concepts.

General concepts are concepts that cover the whole class of the same objects or events with the same name. Common concepts reflect features that are specific to all objects, combined with the relevant concept.

Any general concepts arise only on the basis of one thing and events. The method of forming concepts is a movement from the particular to the general, viz. by generalization.

The basis for the formation of concepts is practice. Often, when we lack practical experience, some of our understanding is distorted. They can be unnecessarily narrowed or widened. In differential concepts are formed through personal practical experience. Visual-figurative

connections play a key role in them. Scientific concepts, which are formed with the leading participation of formal-logical operations, their definition is formed by general differences.

In logical relations, only comparable concepts can be found. Physician's diagnostic errors, for example, may be related to a violation of the logic of thinking in terms of a particular disease - an overly broad or very narrow understanding of the content and scope of the concept. reef replacement. With a description with a list of individual symptoms of the disease.

The mastery of a concept is not only the ability to name its signs, even if it is very much, but also to apply the concept in practice, viz. to be able to operate on them. One of the most important points in mastering a concept is to understand it. Sometimes using a concept, we don't fully understand its meaning. This means that understanding comprehension can be seen as the highest stage of concept formation, the link that connects concept and understanding.

Judgment is a form of thinking that reflects the connections between concepts expressed in the form of affirmation or denial. If the concept reflects a set of important features of the objects, listing them, the sentence reflects their connections and relationships. Usually judgment (e.g., red rose) consists of two concepts - two terms of judgment: subject (Latin subjectum - subject), viz. something that is affirmed or denied in a judgment, and a predicate (Latin praedicatum - predicate), viz. verbal expression of approval or rejection.

In general considerations, something is affirmed or rejected on all objects of a particular class or group (e.g., all fish breathe with gills). In private judgments, this applies to certain members of a class or group (e.g., some students are excellent students). A single judgment is a judgment that confirms or denies something on a subject (e.g., this building is an architectural monument). That is, any judgment can be right or wrong. true or false.

In the process of working with different considerations using certain mental operations, another form of thinking emerges - drawing conclusions.

Conclusion - This is a form of thinking through which a new judgment (conclusion) is obtained from one or more judgments (buildings). Conclusion is the highest form of thinking and is the formation of new judgments based on changing existing ones. Conclusion is based on concepts and considerations as a form of thinking and is often used in theoretical thinking processes.

Any conclusion consists of grounds, conclusions, and conclusions. The basis for the conclusion is the initial judgments from which a new judgment is derived. This new judgment, obtained by logical means from buildings, is called a conclusion. And a very logical transition from buildings to the conclusion is the conclusion. The logical consequence relationship between buildings and conclusions implies a connection between buildings in terms of content. If the judgments do not depend on the content, it is impossible to draw conclusions from them. When there is a meaningful connection between buildings, we can gain new real knowledge if two conditions are met in the thinking process: the buildings must be correct and a certain inference rule must be followed - thinking methods.

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