

### §3.3. PSYCHOLOGICAL FEATURES OF ATTENTION DEVELOPMENT IN PRIMARY SCHOOL STUDENTS

For a long time, the study of attention abroad in practice has been seen in the context of cognitive psychology. All created attention theories in the cognitive paradigm can be grouped as a selection filter (structural-functional theories) that filters insignificant information in the process of receiving and processing information, as a mental resource based on attention perception. Energy, the amount of which depends on current operational requirements (economic theories), as it is coordinated in the process of receiving and processing data in the context of managing external and internal operations and solving the problems they face (activation theories). Cognitive psychology is a trend that emerged in foreign (mainly American) psychology in the early 1960s at the intersection of Gestalt psychology, neuhevorism, and systemic linguistics. So far, it is one of the leading areas of foreign psychology.

The analogue of cognitive psychology in modern science and technology is the computer. The latter rule of cognitive psychology has been dubbed the “computer metaphor” and is the most challenged by researchers of cognitive processes pertaining to other directions and approaches. Representatives of the cognitive-information approach derive from the ability to accurately quantify the process of knowing knowledge as a process of information processing [7].

The process of cognition is considered a complex multi-stage and step-by-step, in which individual cognitive processes (attention, memory, thinking, etc.) occupy a certain place and perform certain functions. In cognitive psychology, to date, several models (theories) have been proposed by various researchers to describe and explain attention. The beginning of their research in the framework of this approach began with the sensational English psychologist D. at the time. It is associated with the publication of Broadbent's book *Perception and Communication* (1958) [167].

However, electronics engineer K.S. Cherry (1953) proposed his own method for studying auditory attention - the dichotic listening method (shading method) and was the founder of a new approach to the study of attention. K. Cherry tells us about the limited size and selectivity of our minds. He emphasized the point made by James. Models of filtering, selection (selection) of data from outside and processed by man have emerged and explained the selectivity of their perception [157].

There is a “narrow space” in the structure of information processing, but different models imply different spaces. Therefore, three groups can be distinguished among the selection models: 1) early selection models (D. Broadbent's filtration model); 2) late selection models

(double Deutsch model and D. Norman's relevance model); 3) compromise model of early selection (agreement) (A. Treysman's distinguishing model). Dozens of experiments have been conducted to confirm the above theoretical models of attention, but the advantage of any of them has not been proven to date [156].

In addition, these experiments revealed many facts that could not be explained using selection models. To solve this problem, whole cascade filter models have been proposed. These did not clarify the understanding of the essence of attention and led to the rejection of the idea of filtering and the emergence of other views on the nature of attention. This is U.Naisser's approach, which encouraged attention to be viewed as a creative apperceptive positive synthesis process (constructive), d. Instead of postulating “narrow spaces” in information processing, it is appropriate to cite Kanneman's approach to the limitation of a person's ability to perform general mental work [107].

Structural-functional models promote the idea of “narrow space” of selection and link it to a constant clear functional level of stimulus processing. There are two ways to look at the “location” of a filter. According to the first, the management of incoming data, its selection and processing is carried out in the initial stages. In the second context, the controlling, selected role of attention is interrelated with the stage of selecting a response to an existing situation. This group may include early and late filtering theory, relevance theory, multiple and flexible selection model, character integration theory, and active synthesis model [8].

D. Broadbent created the first “filtering model,” in which attention was seen as a selection mechanism. He points out that the human central nervous system is the only communication channel with limited capabilities that can transmit a certain amount of information per unit of time. D. Broadbent noted that in the first version of his model, selection is based on the physical properties of the stimulus, and that the shift in attention is not related to the content (meaning) of the message. In this case, the selection of information is made immediately, at its input, ie in the early stages of its processing. The filter works on the principle of “everything or nothing”, that is, if some information is selected, the rest will be completely “dropped”, acting on sensitive channels at the same time as the selected [9].

Subsequent processing of information occurs only after attention is paid to it, and it is transmitted to the “channel with limited throughput” through the selected filter. Since there is more data in a data processing system than is processed by a channel with limited bandwidth, D. Broadbent believed that the selected channel could be transferred to another touch channel to avoid overloading the system [10].

In the late 1950s, the results of some experimental studies were published abroad, which called into question the integrity of the early selection (selection) model. E. Treisman suggested modifying the model with filtering. He presented his ideas in the form of an attenuator model. He concluded that, unlike sensory material, sensory processing data is stored elsewhere and at short intervals, the messages are compared at the next stage of material identification, which involves distinguishing and knowing features and meanings. According to his model, the analysis of incoming stimuli is initially performed by parallel sensory processing. The signals then enter a selective filter (attenuation system), which regulates the intensity of the message, acting as an intermediary between the signal and its verbal processing. E. Treisman's model logically explains why adults focus on immediate meaning rather than immediate physical features [156].

The two variants described in the early selection theory are compared with the late selection models. The first model of this group was E. Doych and

Proposed by D. Doych. In their view, the constraints in the processing system lie much closer to the output part, i.e., in the awareness, decision-making, and response phase. According to their model, all signals reach the logic analyzer, where the specificity of each of them is analyzed. Each signal is fully processed according to all the cues, regardless of whether attention is focused on it. The combination of certain features activates the appropriate vocabulary combination. The more important a signal is to the organism, the clearer the activity of the logical analyzer neurons it receives, regardless of its initial strength [166].

Alternative model to the early selection model is the pair E. Doych and D. Proposed by Deutsch and later revised by D. Norman one of the key concepts of the model is the concept of data relevance, which is why it is called the “relevance model”. The basic idea of this model is that all signals entering the senses are first analyzed and then only the data are selected for further processing [17]. In other words, data filtering is carried out in the later stages of the information processing process, rather than as considered by

proponents of early selection ideas. The difference of this model from the A.Treisman model is that, according to the authors, this or that stimulus occurs at the stage of selection of the reaction or earlier. In other words, a large number of insignificant stimuli need to be processed using long-term memory before a decision can be made to select the required data. All sensor (sensory) input signals are "parallel processed" [18].

The limitation of system properties is manifested only after the incoming sensor (emotional) signals are somehow processed, with the priority of important and up-to-date messages. D. Norman considers important signals to be important and relevant in order to achieve the goal. Physical signals begin their presentations in the storage system while igniting the mechanisms of analysis of the sensory (sensory) system and stimuli. Analysis of previously encountered materials, expectations, rules - these are the basis for determining the relevant information. All signals are recognized (even if the control is received by the signal), but even after the person confirms it, the control is not able to process the information from the channel [19]. Thus, even in D. Broadbent's model, D. Norman and the couple also acknowledged that the ability of Docs to process incoming data was limited [108].

However, there is disagreement between them as to exactly where the elephant is located, dropping some of the data, and transmitting the rest.

D. The main objection of Broadbent and his supporters to the late-chosen model is that the brain is a D. of "compatibility". Norman, the savings you see in the double D moon ch model won't work for you. In cognitive psychology, attention patterns such as information selection have been experimentally studied and tested by various researchers. However, it is always clear that the facts identified in one case can be explained from the point of view of one model, and in another from the point of view of the second or third model. In other words, none of the models of attention under consideration has its superiority over the others so far. did not prove the explanatory value [20].

Among the sets of experiments, in particular, the experiences of Johnston and his colleagues can be singled out. They sought to distinguish between the A. Treisman and Norman-Deutsch models and proposed a more sophisticated model that selects e - shit data in several stages. But the most important thing in their hypothesis is that the choice of information should occur as early as possible, that is, the person can process more information to solve a problem that can be solved more [23].

Thus, the question of the nature of attention has not been resolved within the framework of a selective approach in cognitive psychology, which has led to the emergence of concepts of attention that differ sharply from selection models and criticize them.

Signal is assessed experimentally. The work of a logic analyzer is not controlled by the mind. Only data from it will be accepted [25]. In their view, the selection of the most important unit is done by comparing the pairs of signals according to the significance parameter. Thus, it follows from the psychologist Deutsch model that all stimuli go into a process of complete perception and parallel processing, in which the subject can distract attention.

The Doych hypothesis formed the basis of a series of studies aimed at testing the hypothesis of complete processing of insignificant messages. One of the main ideas of the concept in Yu. Used by Norman, he developed his theory of attention, which was related to late selection theories and called "relevance theory" [27]. According to this model, all alerts go through a primary automatic processing phase, where the physical signals are rewritten in a physiological form. In the second stage, special, only sensitive features of all signals are isolated using various operations and transformations. The psychological processes of interpreting them begin with the third stage of automatic analysis [108].

Each of the touch outputs automatically finds a matching image in the “memory” system. In the next step, the signal is selected with maximum activation of its function in the memory system. D. Norman hypothesized that it would take time to further process a mechanism with limited capabilities called “attention”, and that the choice of response would be influenced by the expectation and preliminary analysis of the physical signs of the signals [29]. Thus, he introduced the assumption that the repetition of recognition processes  $q$  when added to a stimulus and response.

In general, the general trend in the development of late selection models was to reconsider the concept of stimulus selection in the information processing system. After the theories described in Yu Qori were published, a large number of experiments were conducted, on the basis of which various researchers obtained data that speak in favor of early selection and late selection theories.

In 1969, E. Traysman proposed a flexible and multi-  $p$  selection theory. Following others, he speaks of the presence of analyzers for certain stimulus characteristics (size, tone, color, position, shape, etc.), resulting in a combination of these analyzers giving an object image. A analyzers can be organized in a series and parallel analysis system [31].

The study of cognitive processes shows under what conditions and  $q$  ay method a particular ability is manifested. In modern psychology, it is common to distinguish several levels of reflection of objective reality: sensory, perceptual (primary images), level of imagination and imagination (secondary images), and level of speech thinking. Attention psychodiagnostics is a set of techniques and methods aimed at the psychological study and measurement of attention traits (its distribution, concentration, stability, and mobility).

The difficulty of studying attention has long been recognized by psychologists who have tried to understand its phenomena, to determine its specificity. Many psychologists are currently concluding that it is not possible to find an answer to the question of the nature of attention by conducting experimental studies. It is necessary to formulate this problem on a broader database and a solid methodological basis, and to seriously discuss it, to address a set of theoretical questions that cannot be achieved for direct experimental verification.

Attention is a special feature of the human psyche. It cannot exist independently of thought, perception, memory, and action. A person can simply be attentive  $e$  mas - just be attentive by doing something. This is why it is called selectively directing the mind to do a particular task. The forms in which attention is manifested are diverse. It can be directed to the work of sensory organs (visual, auditory attention), memorization, thinking processes, etc. [41].

1. There are a number of challenges in the process of attention research. It has long been recognized by psychologists who have tried to understand its phenomena, to determine its specificity. Many psychologists are currently concluding that it is not possible to find an answer to the question of the nature of attention by conducting experimental studies.

2. High-validity diagnostic methods were selected to perform the tasks identified in the study.

The following is a list of times younger students can use this feature in the learning process:

when performing an interpreted text (the student must say what he or she is writing at the same time and complete the writing process);

her work (the student should read the written text and at the same time look for the spelling, check and check what is written in the notebook);

in performing mathematical dictations, and so on.

the following conclusions can be drawn from the results of the correlation between the manifestations of attention and subjective-objective causes in primary school students :

1. Age differences were observed in the correlation between the factors influencing the development of attention. In Grade 2 students, only one of the simplest features of attention, its stability, was identified. Positive correlations were observed among other features of attention as 4th grade students developed at a young physiological level.

Positive association between attentional stability and choleric and sanguine type of temperament was found in 2nd grade students of primary school age. Choleric and sanguine temperament type is strong, balanced, agile has a nervous system and has rapid excitability. Therefore, our study showed that this feature of attention is developed only in strong types of the nervous system.

Negative correlation between attentional stability and melancholic type of temperament was found in 2nd grade students of primary school age. The melancholic temperament type has a strong, unbalanced weak nervous system and is distinguished from other temperaments by its slow-moving tempo.

Positive correlation between attentional stability and learning motivation was found in 2nd grade students of primary school age. Learning motivation of the student is one of the important features in the reading activity and shows a sense of interest and responsibility towards the lesson. Therefore, the learning motivation of the student has a positive effect on the development of the stability feature of his attention.

Negative correlation was found between the liberal style of the teacher and the mobility of attention in 2nd grade students of small school age. It is well known that the liberal style of government means fragmentation, chaos. If the teacher conducts the lesson in a liberal style, it leads to student chaos. This in itself causes them to shift their focus. There will be many situations during the lesson that can distract the student.

6. A positive correlation was found between the distribution of attention and the choleric type of temperament in 4th grade students of primary school age. Distribution of attention is a subjective experience in which a person focuses on objects that are not the same at the same time.

7. A negative correlation was found between attentional mobility and the melancholic type of temperament in 4th grade students of primary school age. In our study, a negative correlation with factors affecting the development of attention in melancholy-type students was identified in both 2nd and 4th grade students.

As a result of research on the dissertation on "Psychological features of attention development in students of primary school age" we came to the following conclusions :

1. The low level of attention development in a small school-age student has an impact on the optimal development of other cognitive processes. As a result, low mastery in a small school-age student leads to negative consequences of communication with the teacher. As a result, a positive environment is not created for the formation of the process of psychological socialization in a small school-age student.

2. Studies have shown that attention development is age-related, with complex features of attention requiring mental maturity. Gender differences were found in the manifestation of attentional features in students of small school age. The distribution feature of attention is more strongly developed in girls than in boys. Stability of attention and mobility of attention were more pronounced in boys than in girls.

Negative correlation was found between attentional mobility and the liberal style of the teacher in 2nd grade students of primary school age. In the lessons of liberal teachers who have left students alone, the attention of learners is scattered, moving to everything. A positive correlation was found between democratic style in primary school

teachers and students' learning motivation. In the lessons of teachers who conduct the lesson in a democratic style, students will have a strong motivation to learn, interest in learning.

4. A positive correlation between attentional stability and choleric and sanguine temperament with negative, melancholic temperament was found in 2nd grade students. Pupils of the choleric and sanguine type also have a longer period of attention because of the strong excitatory processes. They can point to an object.

Positive correlation was found between choleric, sanguine temperament and attentional stability, mobility, and distribution in 4th grade students of primary school age. A negative correlation was found between melancholic temperament and attention span, mobility. A positive correlation was found between phlegmatic temperament and attentional mobility.

6. Correction of attention development is effective through mechanisms such as achieving a state of mastery of a particular skill and competency by reacting to the child using stimuli and means.

Failure to develop attention in a timely manner in young school-age students has led to serious problems in his academic and work activities. Because attention is the hole in all cognitive processes, its poor formation is a barrier to knowing and understanding the whole universe. Later, as a result, there are deviations in the mental state and characteristics of the person.

**recommendations** based on the idea of educating a perfect person, to prevent various negative consequences associated with the impact of attention on personal activity, cognitive processes. In particular, we believe that **psychologists** should pay attention to the following when working with children with developmental delays:

1. If a psychologically impaired or hyperactive student is studying at the institution where he / she works, he / she should consult with the student's parents and recommend that he / she be examined by a neurologist in order to make a definite diagnosis.

2. The psychologist should explain to the teacher of the underdeveloped or hyperactive student that such children are not "bad" and "harmful". Below we offer a systematic mechanism for working with a psychologist's attention deficit and hyperactive student:

Work in the field of mental development of students:

- To develop the student's ability to self-develop;
- To develop the student's ability to self-control and manage;
- Development of programs for socio-psychological adaptation of students;

Work in the field of socialization of students:

- To form an adequate attitude of the student to his personality (self-esteem, pride, conscience);

- The student develops the ability to plan and follow their work and to be disciplined, self-regulating;

- To prepare students for social autonomy, to form the ability to interact in a team.

We recommend the following to **parents** to work with a child with low attention span :

1. If you want your child to be attentive, always focus on the object of attention when communicating with him. The child needs to focus on something specific (ask him or her about it) and also remember something specific (remember the phone number, address, poem, story).

2. Don't share his thoughts when the child is expressing his thoughts. It is important to talk to the child and discuss together what is happening at school and outside. Ask to retell a fairy tale or story, try not to interrupt.

3. When your child is tired during the lesson, relieve fatigue by practicing fine motor skills of the hands (fingers, art crafts, buttons or other small separation exercises, etc.).

4. Use the "positive model" approach to your child. If your child deserves it, praise him or her in any situation. Don't worry, a low-attention or hyperactive child will reject reprimands, but a little praise is too important to him. Encourage him to engage in any activity that requires concentration.

5. Keep a diary that your child can control. Keep a diary of your success with your child at school and at home. Include clear graphic examples of homework and homework assignments.

6. Create a quiet environment at home for your child. It is advisable to provide a separate room for children with developmental delays or hyperactivity. There must be minimalism in this room, free from things that attract the child's attention. Room colors should be in soothing tones, not bright colors. It is effective if a sports corner is organized at one end of the room.

To develop students' attention, **teachers need to do the** following We recommend:

- It is advisable to use a more democratic approach to the organization of the teaching process;

- The student's temperament should be taken into account in the process of giving examples, problems, new tasks and demanding them in the classroom;

- In dealing with the student, the teacher should take into account the student's temperament in motivating him, and encourage the small success of students in phlegmatic and melancholic temperament.