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FEATURES OF ATTENTION AND MEMORY OF PRIMARY SCHOOL

Abstract: The work is devoted to the problem of the peculiarities of attention and memory of younger schoolchildren. In the course of the study, the following results were obtained: the predominance of the visual-motor-auditory type of memory in younger schoolchildren was established; a low level of attention was revealed; the average level of development of short-term visual memory was determined. In addition, mathematical methods were used in the data analysis process, which allowed for a deeper investigation of the relationship between different types of memory and the level of attention. This made it possible to identify correlations confirming the importance of attention for effective memorization and information processing.

Keywords: Motor memory, primary school student, attention span, auditory memory, attention stability, visual memory, attention, memory.

Currently, researching attention and memory in primary school children holds great significance for understanding how pedagogical strategies should be designed to effectively support and develop their cognitive functions.

Attention is a cognitive process that plays a significant role in psychology and education. Some researchers consider attention as an aspect of other mental processes, whereas others highlight its distinctiveness. For instance, E. Titchener pointed out the selective nature of attention, allowing individuals to focus on just a portion of the overall information stream [8].

Attention is defined as a psycho-physiological process focused on particular aspects of reality while disregarding others. It encompasses both physiological and psychological dimensions. Its physiological foundation is connected with the activity of different regions of the cerebral cortex, thalamus, and reticular formation. Additionally, frontal lobes play a critical role in regulating advanced forms of attention [4].

Among the key properties of attention are concentration, scope, stability, and switching ability. Particularly important for primary school children, attention not only aids in assimilating materials but also fosters the development of volitional qualities [7].

Attention is closely interconnected with the mental process of memory. Memory is a complex mental process encompassing encoding, storage, retrieval, and forgetting of information, playing a pivotal role in cognitive activities and everyday life [6] The initial studies on memory were conducted by Hermann Ebbinghaus, who devised methods for investigating memorization and forgetfulness, including techniques like rote learning, recognition, and anticipation [5].

In discussing the age-specific characteristics of the aforementioned mental processes, it is important to mention that during the period of primary schooling (ages 7-11), there is a notable development of attention and memory. During this time, children's voluntary attention begins to emerge, even though involuntary attention continues to dominate. Voluntary attention demands willful effort and is tied to specific objectives, which is critically important for the learning process [1] [2].

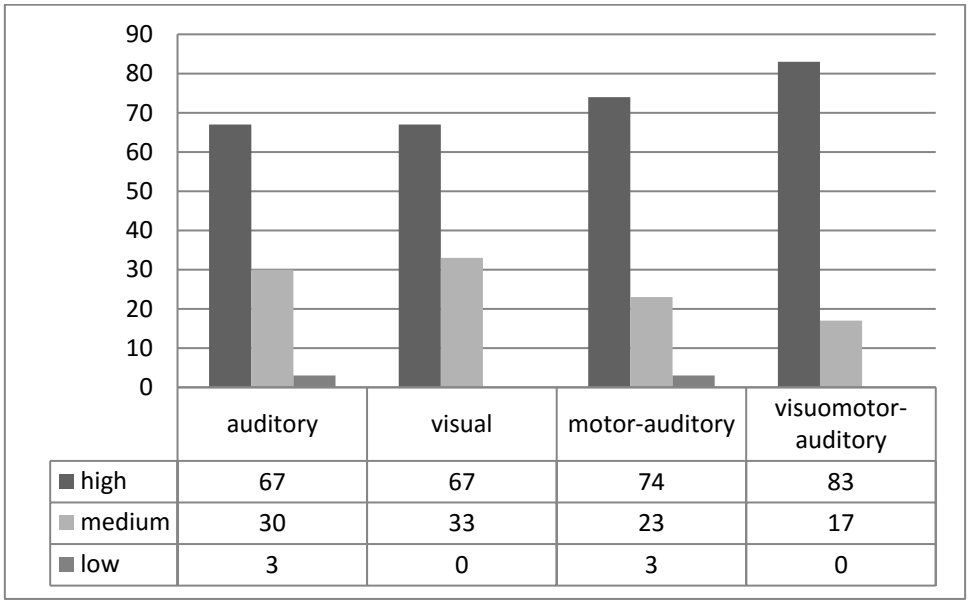
The attention of primary school children is characterized by low concentration levels (10-20 minutes), stability, and limited capacity, which makes it challenging to focus on complex tasks. Their emotional state and interest in the subject matter significantly impact their level of attention [3].

The memory capacity of primary school children is approximately 7±2 units, which is lower compared to adults. Therefore, teachers should divide information into small chunks to facilitate memorization. Effective development of attention and memory in younger students is a crucial component of their educational progress and personality development. Creating a stimulating learning environment and maintaining a positive emotional atmosphere contribute to the successful development of these processes and improvement in academic performance [9].

The objective of our study was to identify the peculiarities of attention and memory in primary school children. A total of 30 elementary school students participated in the study.

To examine the predominant type of memory in primary school children, we utilized O.N. Istratova's methodology "Memory Type Study." To identify the specifics of attention in primary school children, we applied Bordon's "Proofreading Test" methodology. The investigation of short-term visual memory capacity was conducted using the "Remember Pictures" methodology.

The study of the predominant type of memory in primary school children (Fig. 1) revealed that 67% of participants had a high auditory memory coefficient, 30% had a moderate coefficient, and 3% had a low coefficient, possibly due to active cognitive skills development at this age. In visual memory, 67% of subjects also demonstrated a high coefficient, while 33% showed a moderate one, with no instances of a low coefficient. In motor-auditory memory, 74% of participants had a high coefficient, 23% had a moderate coefficient, and 3% had a low coefficient, suggesting improved movement coordination. Lastly, in visuo-motor-auditory memory, 83% of participants had a high coefficient, 17% had a moderate one, and none had a low coefficient, indicating active perception of auditory information via ral instructions and reading.



	auditory	visual	motor-auditory	visuomotor-auditory
high	67	67	74	83
medium	30	33	23	17
low	3	0	3	0

Fig. 1. Results of diagnostic assessment of memory types' prominence according to O.N. Istratova's methodology "Memory Type Study" (%).

The results of studying the characteristics of attention in primary school children using Bordon's "Proofreading Test" methodology (Fig. 2) indicated that the majority of respondents (63%) had a low level of attention, 20% had a medium level, and 17% had a high level. These findings may be attributed to the fact that at ages 7-8, children are in a phase of active cognitive function development, including attention. Their ability to concentrate on a task has yet to reach full maturity, leading to difficulties in sustaining focus on a single object or task over extended periods.

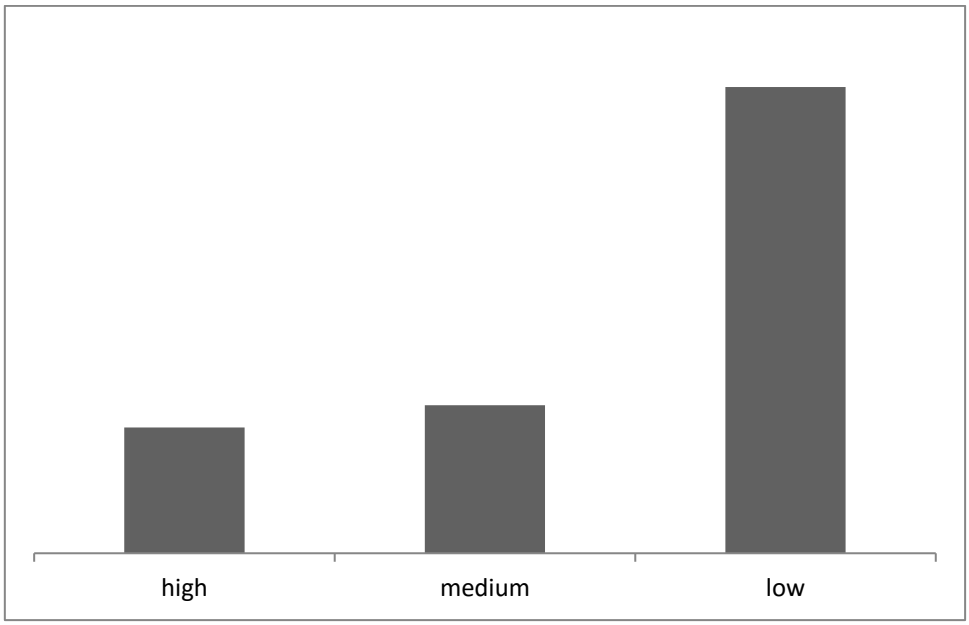


Fig. 2. Results of the "Proofreading Test" Methodology (%).

The study of short-term visual memory capacity (Fig. 3) was conducted using the methodology "Remember Pictures."

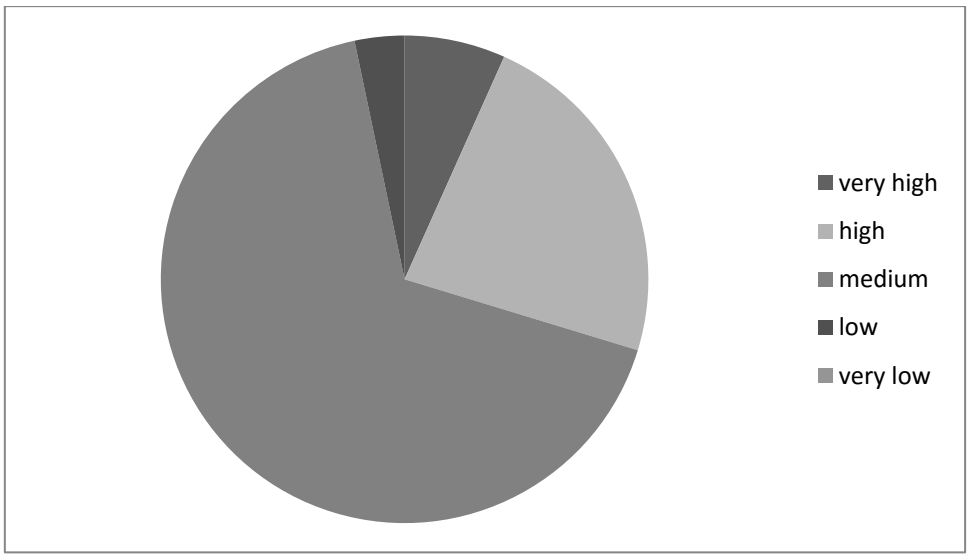


Fig. 3. Results of the "Remember Pictures" Methodology (%).

The final stage of the empirical study involved establishing correlational links between different types of memory, which allow determining whether the data conform to normal distribution. The results of the correlation analysis are presented in Figure 4.

1. Visual memory (correlation coefficient: 0.703, $p < 0.01$) shows a strong positive correlation with sustained attention, indicating that students with high sustained attention better remember and process visual information.

2. Auditory memory (correlation coefficient: 0.689, $p < 0.01$) also demonstrates a high correlation with sustained attention, emphasizing the importance of attention in perceiving and remembering sound-based information.

3. Motor-auditory memory (correlation coefficient: 0.333, p = 0.073) exhibits a positive correlation, but does not achieve statistical significance. This suggests that the effect of sustained attention on motor-auditory memory might be less pronounced and could depend on additional factors, such as motor skills.

4. Visuomotor-auditory memory (correlation coefficient: 0.389, p < 0.05) shows a statistically significant positive correlation, underscoring the importance of attention for integrating diverse types of information.

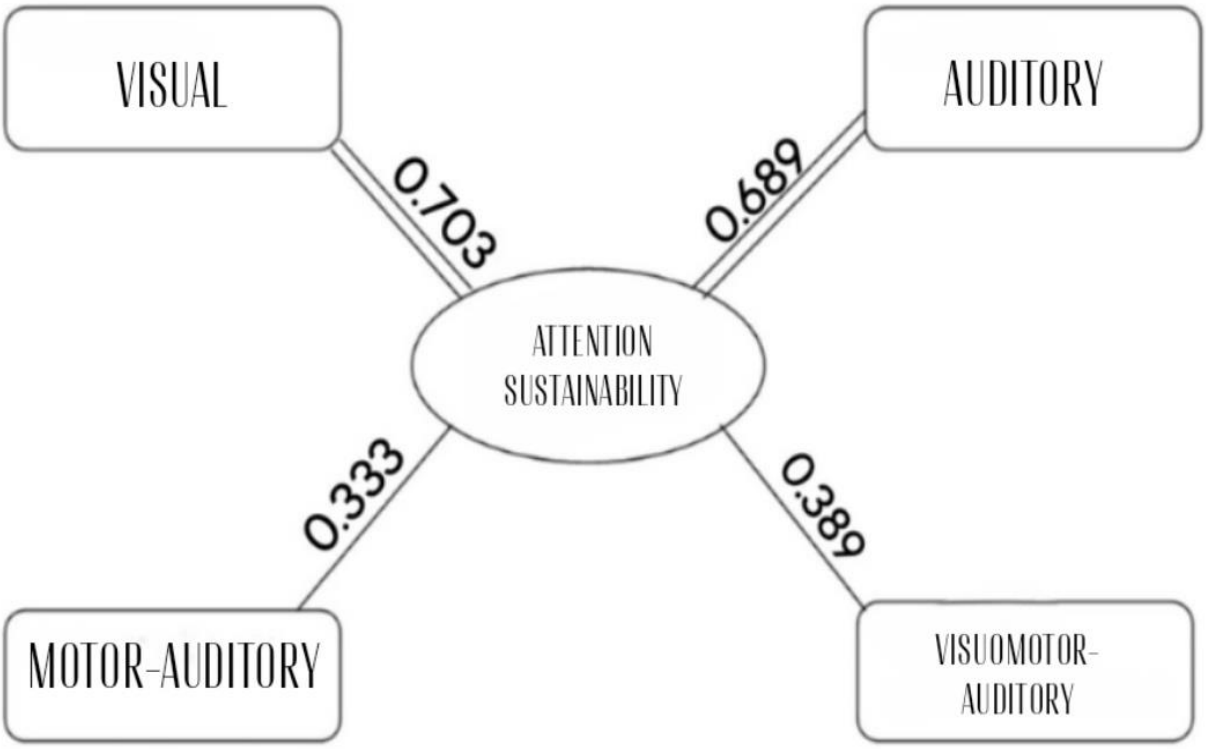


Fig. 4. Correlation pleiad of memory type indicators and attention sustainability in primary school children.

Thus, the conducted research examined the characteristics of attention and memory in primary school children, confirming the hypothesis about the presence of specific traits of these cognitive processes within this age group.

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