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THE IMPACT OF MNEMONIC TECHNIQUES ON THE COGNITIVE DEVELOPMENT OF CHILDREN IN PRESCHOOL EDUCATION

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Abstract: This article highlights the pedagogical and psychological foundations of using mnemonic techniques in the process of developing cognitive abilities in preschool children. The study analyzes the visual-associative characteristics of children's memory, the historical development of mnemonics, its significance in modern educational practice, as well as the practical possibilities of mnemonic tables, mnemonic squares, and the "Major" system based on scientific sources. The effectiveness of mnemonic techniques in developing children's memory, speech, thinking, and attention processes is substantiated.

Keywords: cognitive ability, memory, mnemonics, mnemonic table, preschool education, visual memory, association.

INTRODUCTION

Developing cognitive abilities in preschool children requires high pedagogical competence from educators. In this process, it is important to consider children's age characteristics, individual developmental levels, and psycho-physiological processes. Cognitive abilities are formed and systematically developed in close connection with mental processes such as perception, memory, thinking, attention, speech, and imagination.

The concept of "cognitive" helps explain how people process information, solve problems, and form perceptions about the world.

Numerous scientific discussions, recommendations, and methodological guidelines have been developed and continue to be created regarding the implementation of educational technologies aimed at ensuring the quality and effectiveness of preschool education and the comprehensive development of children. However, there are still insufficient recommendations on methods that facilitate memorization in the development of cognitive abilities.

In preschool-aged children, memory based on visual imagination and repetition is highly active. While visual-imaginative memory has a natural character, memory built on repetition requires motivating the child toward self-improvement. However, knowledge acquired solely through repetition is not always effective and is often quickly forgotten. The uneven placement of knowledge in memory due to repetition can hinder recall when needed. In contrast, visual-imaginative memory helps organize information systematically in the brain. Therefore, relying on visual memory in developing cognitive abilities in preschool children facilitates quick recall of existing knowledge and eases the process of understanding events.

RESEARCH METHODS

After conducting research, Sanderberg concluded that: "Compared to ordinary repetition, information memorized through mnemonic techniques remains in long-term memory for a longer period because it is associated with concepts, images, or emotions. Mnemonic methods ensure a higher level of attention during the memorization process and help maintain focus by distinguishing and correctly structuring the main aspects of information." This method provides positive results in teaching children word meanings.

C. Benge defined mnemonics as follows: "Mnemonics (from the Greek *mneme* – memory and *techne* – art, craft) refers to a set of special methods that enhance human memory and demonstrate the ability to memorize information. These methods are often used in performance arts, especially in circus or stage performances. Mnemonics is based on expanding the limited

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capabilities of human memory through special systems of coding, encryption, and associative connections."

This art form is often presented as an interactive performance involving two participants. In traditional mnemonic performances, the first performer collects various objects from the audience (such as scarves, keys, glasses, watches, etc.) and communicates their names, colors, shapes, quantities, or numerical expressions to the second performer, who appears unable to see anything, often blindfolded. The second performer then accurately recalls the information from memory. This process is mainly carried out through a pre-developed coded communication system involving subtle differences in intonation, hidden hints in question structures, special sound signals, and other unnoticed semantic signs.

The stage form of mnemonics was developed in the 18th century by the French illusionist Joseph Pinetti. Later, in the 20th century, this art form significantly evolved. Arrago, I. Sun, and G. Agaronov made major contributions to the development of mnemonics. In Uzbekistan, this field also developed actively within circus art. Actors such as Y. Shohqulov, F. Rajabov, and P. Egamberdiyev performed mnemonic shows and achieved remarkable success in this direction.

Today, mnemonic performances are successfully used not only in traditional circus programs but also in modern interactive stage performances. Mnemonic techniques serve not only to amaze audiences but also as effective practical models for studying the capabilities of human memory.

In their book *Word Memorization*, Sh. Rahmonov and I. Sattiboyev define mnemonics as "a collection of special methods developed to expand memory capacity and memorize necessary information based on similarity and association. Through this process, unknown concepts are associated with already familiar information in human consciousness, making memorization easier."

RESULTS

Currently, the following problems are increasingly observed among preschool children: limited vocabulary, inability to coordinate words in sentences, pronunciation disorders, attention deficits, and underdeveloped logical thinking.

T. Mironova provided the following recommendations for developing preschool children's speech using mnemonic techniques: "A distinctive feature of mnemonics is the use of symbols rather than direct images of objects. Through mnemonic methods, it is possible to achieve the automatization of word meanings in children's consciousness. Motivation is considered the central component in speech development."

Visual memory dominates in preschool children, and memorization of events mainly occurs involuntarily. Children better remember events, objects, facts, and phenomena that are familiar and close to their life experiences. The effectiveness of mnemonic squares and symbolic images with semio-semantic functional methods in forming initial concepts and systematically mastering creative information has been scientifically proven.

Regarding mnemonic methods, L. Benge proposed a methodology in which complex words for children are presented through cartoon images.

The relevance of mnemonics for preschool children lies in the fact that figurative-visual memory dominates at this age. In many cases, memorization occurs involuntarily because certain events or objects appear directly before the child's eyes. If a child attempts to learn and remember an event or object without visual aids, success is unlikely. Mnemonics helps simplify the memorization process for preschool children, develops associative thinking and imagination, and strengthens attention. Furthermore, due to the educator's skill, it contributes to vocabulary enrichment and coherent speech development.

Mnemonic schematic models, mnemonic squares, and symbolic images used in developing cognitive abilities in older preschool children must meet the following requirements:

a) They should clearly reflect the main features and relationships of the object of cognition and structurally resemble the studied object;

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b) They should clearly and distinctly convey the characteristics and relationships that need to be mastered;

c) They should be easy to understand and convenient to use;

d) They should create an environment for creativity, allowing each child to have their own model according to their imagination and ideas.

However, it should be emphasized that when introducing preschool children to mnemonic tables, it is necessary to follow an algorithm for working with models:

1. Introduction of symbols and elements (for example: color, shape, size);

2. Use of different auxiliary schemes and symbols in all types of activities so that the child does not associate a symbol with only one specific field, since symbols are universal;

3. Introduction of negations (for example: not big, not round, not edible);

4. Reading combinations and chains of symbols;

5. Independent search by children for images representing certain qualities;

6. Reviewing the table and analyzing the depicted objects;

7. Transcoding information, that is, transforming abstract symbols into images;

8. Retelling a fairy tale or story based on the given topic after transcoding. In younger groups, this is done with the educator's assistance, while in older groups independently.

For older preschool children, it is difficult to immediately perceive information through mnemonic tables; therefore, it is more convenient to work with mnemonic pathways. Mnemonic pathways also contain educational information, but in smaller quantities, which is especially important during the initial stage of teaching.

Thus, through mnemonic tables, children expand their knowledge about the surrounding world, develop interest in retelling texts and creating imaginative stories, become more interested in memorizing poems, enrich their vocabulary, improve logical thinking, overcome shyness, and learn to express themselves freely in front of others.

DISCUSSION

Today, it is impossible to imagine our lives without numbers. From ordinary daily activities to performing complex functions, we constantly deal with numerical calculations. Compared to other types of knowledge, concepts, events, and information, numbers are considerably more difficult to memorize. As the quantity of numbers increases, remembering them becomes even more challenging.

Therefore, regardless of how large the numbers are, learning the mnemonic method known as the "Major" system is useful for everyone. The Major system is a mnemonic technique used to memorize two-digit numbers by associating them with consonant sounds, forming words from the initial letters of these sounds, and then creating unusual stories from the words. By mastering this system, children who struggle to remember numbers can easily retain important two-digit numbers in memory.

This system was developed in 1648 by the European scholar Johann Wilkenmann. The Major system and its effectiveness have been scientifically studied by foreign researchers such as Tony Buzan, D. O'Brien, A. Safronov, and S. Matveyev. Experiments have shown that the method positively influences not only memory development but also perception, thinking, imagination, and speech activity. In Uzbekistan, young mnemonists such as Sh. Rahmonov, M. Abdullayev, Sh. Abduraimova, and S. Muydinov have practically studied the Major system. Their research investigated the effectiveness of transferring information from short-term memory to long-term memory.

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Two methods can be used in applying the Major system: the method of location and the storytelling method. In the storytelling method, unusual events are created by sequentially combining words encoded with two-digit numbers. When recalling the numbers, the individual first remembers the story, then the words involved, and finally the corresponding numbers associated with those words.

When using mnemonic techniques with children, educators can provide interesting and interactive educational experiences while coordinating memory and speech development through perceptual dominants. These methods help develop children's cognitive abilities and enhance their memorization, comprehension, and learning skills.

Mnemonic techniques also enrich the lexical and grammatical aspects of speech. Through mnemonics, it becomes easier for children to understand the lexical meanings of words. If children use mnemonic methods when incorporating unfamiliar or weakly connected words, phrases, or texts into their speech, these linguistic units become associated with existing symbols in their minds.

Special scientific methods have been developed to understand the complex and diverse phenomena of nature and society, as well as their essence and developmental laws. These methods determine the direction of scientific research and contribute to deeper and more accurate understanding.

"In science, two stages of linguistic cognition are distinguished:
a) empirical (practical) cognition;
b) theoretical (logical) cognition.

At the first stage, the source under study, its sections, structural components, and characteristics are identified, classified, systematized, and described. Alisher Navoi illustrated this in his work *Lison ut-Tayr* through the story 'The Blind Men and the Elephant,' where blind individuals form different ideas about the elephant. Theoretical cognition cannot exist without empirical cognition. During practical cognition, factual materials are collected and later generalized through intellectual reasoning in the process of theoretical cognition, revealing their essence. In Navoi's work, this stage is represented through the wise man's theoretical understanding of the elephant. Both stages of studying a source are equally important and cannot exist independently from one another."

Cognition is the human ability to form perceptions. Through the process of socialization, individuals acquire speech skills. Thinking develops in humans through language.

CONCLUSION

Mnemonic techniques are effective pedagogical tools for developing cognitive abilities in preschool children. These methods activate memory, speech, thinking, and attention processes while helping children systematically and consciously acquire information. Educational activities organized on the basis of mnemonics increase learning effectiveness and positively influence children's intellectual development.

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