

The Influence of Gender Factors on The Development of Verbal Memory in Preschool Children with Intellectual Disabilities: Analysis Through Fairy-Tale Therapy

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Abstract: This article scientifically explains and analyzes the influence of gender factors on the memory characteristics of preschool girls and boys with intellectual disabilities, particularly on verbal memory, the importance of gender in the psychological development of children, and differences in results observed during assessment.

Keywords: Children with intellectual disabilities, memory process, gender, cerebral hemispheres, speech, attention, special education, communication, fairy-tale therapy.

Introduction: To effectively organize the educational process for children in need of special support, including children with intellectual disabilities, it is necessary to correctly use pedagogical tools aimed at correction and to apply effective methods and techniques of pedagogical influence, taking into account their cognitive activity, emotional-volitional sphere, and individual psychological characteristics. For this purpose, it is essential to analyze the causes, development, and clinical manifestations of intellectual disabilities.

In identifying developmental problems, the ontogenetic stage plays an important role, that is, it is necessary to study which factors directly and indirectly influence a child's development starting from the prenatal period. Modern medicine and psychology currently provide important data for special pedagogy, including the study of child development beginning from the prenatal stage.

In previous studies, we analyzed the memory characteristics of preschool children with intellectual disabilities and discussed factors contributing to memory development, particularly the role of fairy-tale

therapy. During the research and experimental work, an important question arose: just as each age period has its own specific characteristics and developmental dynamics, can gender factors also influence child development? In other words, how significant is gender in developing memory processes or improving the socio-pedagogical condition of preschool children with intellectual disabilities?

METHODS

According to preliminary research results, gender differences were observed in the level of verbal memory retention among preschool children with the same diagnosis of intellectual disability. In particular, girls demonstrated relatively higher results than boys in recalling verbal material. This phenomenon can be explained by several scientific-theoretical factors.

First, A.R. Luria noted in his works that neuropsychological studies show that in girls, the functional maturation of the left cerebral hemisphere, which is associated with speech activity, occurs earlier and more steadily than in boys. Verbal memory is closely related to speech mechanisms, and even under conditions of intellectual impairment, this function is

relatively better preserved in girls than in boys.

Second, L.S. Vygotsky emphasized that memory development is directly related to speech development. In preschool age, girls generally demonstrate higher vocabulary, grammatical structure, and verbal communication activity than boys, and this advantage in speech development contributes to more effective formation of verbal memory in children with intellectual disabilities.

Third, the level of development of voluntary attention significantly affects memory outcomes. Psychological studies indicate that girls develop stability and task orientation of voluntary attention earlier, whereas boys tend to exhibit greater impulsivity and distractibility.

As a result, during verbal memory tasks, girls better understand and consistently perform the tasks.

Fourth, socio-pedagogical factors also play an important role. According to M.S. Pevzner's theoretical views, girls are more often engaged in verbal communication with adults, including question-answer interactions and conversations, which contributes to the development of their speech and memory processes. This is especially evident in special education settings.

From a defectological perspective, compensatory mechanisms—particularly the ability to compensate for deficits through speech—are better developed in girls with intellectual disabilities than in boys. In contrast, boys tend to show dominance in object-manipulative and motor-based activities, which leads to relatively lower performance in verbal memory tasks.

RESULTS

According to a study conducted by researchers at Cambridge University involving approximately 5,000 preschool children, gender differences were identified not in the overall level of memory development, but in its types. Specifically, girls showed relatively stronger development in verbal and emotional memory, whereas boys demonstrated superiority in visual-spatial and motor memory.

Based on this, we conducted a study with children diagnosed with mild intellectual disability (F70) in a specialized preschool educational institution, adapting the methodology to their individual capabilities.

Purpose of the study:

To determine the level of development of different

types of memory (verbal, visual-spatial, and motor memory) in preschool children with mild intellectual disabilities and to analyze gender-related differences experimentally.

Objectives of the study:

To identify the main types of memory in preschool children with mild intellectual disabilities and determine their developmental zones

To compare memory indicators between girls and boys

To identify strengths and relatively weaker aspects across memory types

To develop pedagogical recommendations

Object of the study:

The study involved children aged 5–6 from Preschool Educational Institution No. 3 in Yangiyul city, Tashkent region. A total of 20 children participated: 10 girls and 10 boys with the same F70 diagnosis from senior and preparatory groups.

Subject of the study:

Gender-related developmental characteristics of different types of memory in preschool children

Participants:

Total: 20 children

Age: 5–6 years

Gender: 10 girls, 10 boys

Selection criteria:

Same level diagnosis of F70 (mild intellectual disability)

Developed speech

Regular attendance at preschool institution

Research methods:

Psychological testing

Observation

Interview

Statistical analysis

Task 1: Assessment of Verbal Memory

The child is presented with 10 familiar words (apple, book, bird, car, sun, dress, flower, dog, cup, door).

After 2–3 minutes of distraction (e.g., drawing), the words are repeated again, followed by a short motor activity (e.g., clapping twice and turning around). In the final stage, the child is asked to recall the words.

Evaluation:

6–10 words → high level

4–5 words → medium level

0–3 words → low level

Task 2: Assessment of Visual-Spatial Memory

Method:

6–8 geometric shapes or images are shown for 1 minute, then hidden and later mixed with other shapes and images.

Children are asked to identify and reconstruct the previously shown images from among 10 options.

Evaluation:

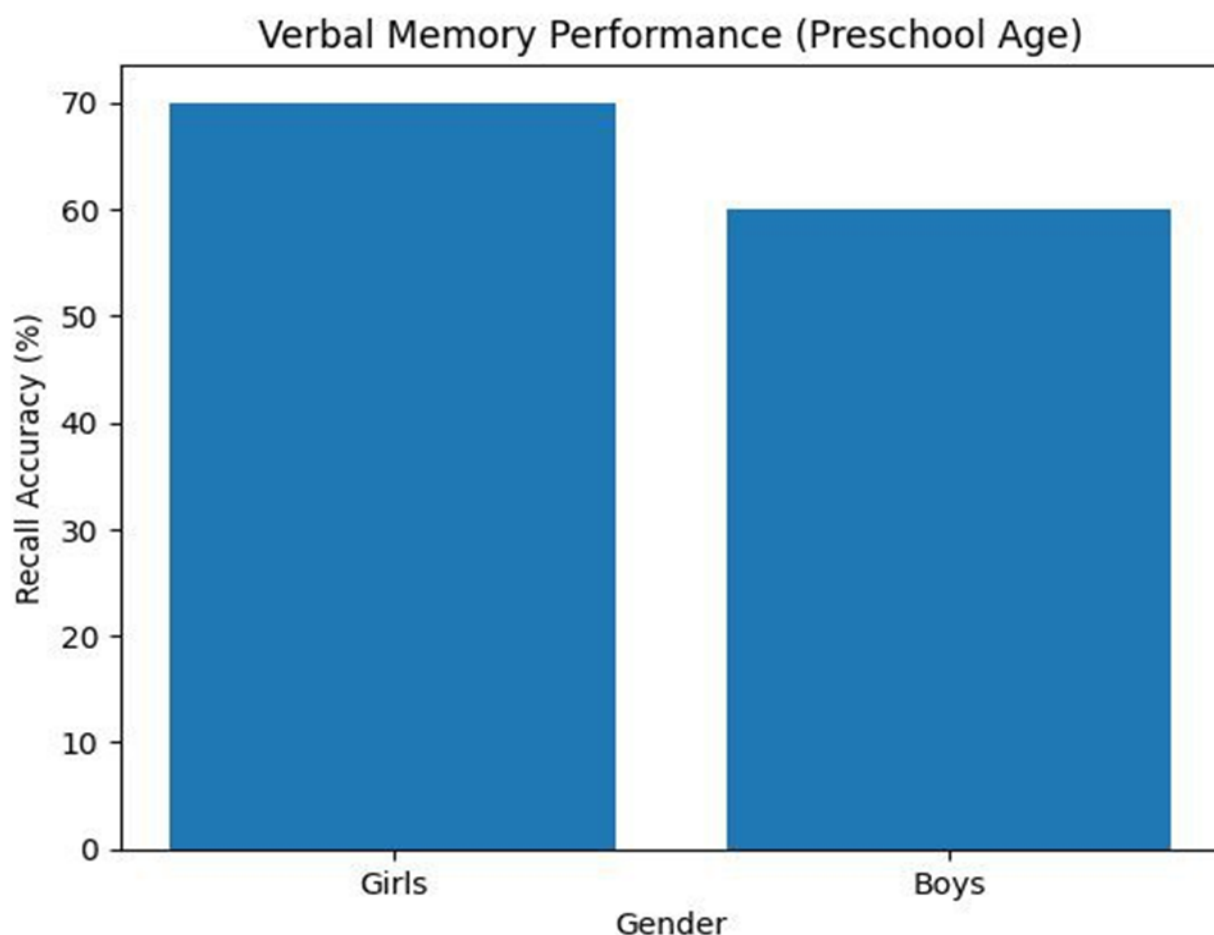
6–10 images → high level

4–5 images → medium level

0–3 images → low level

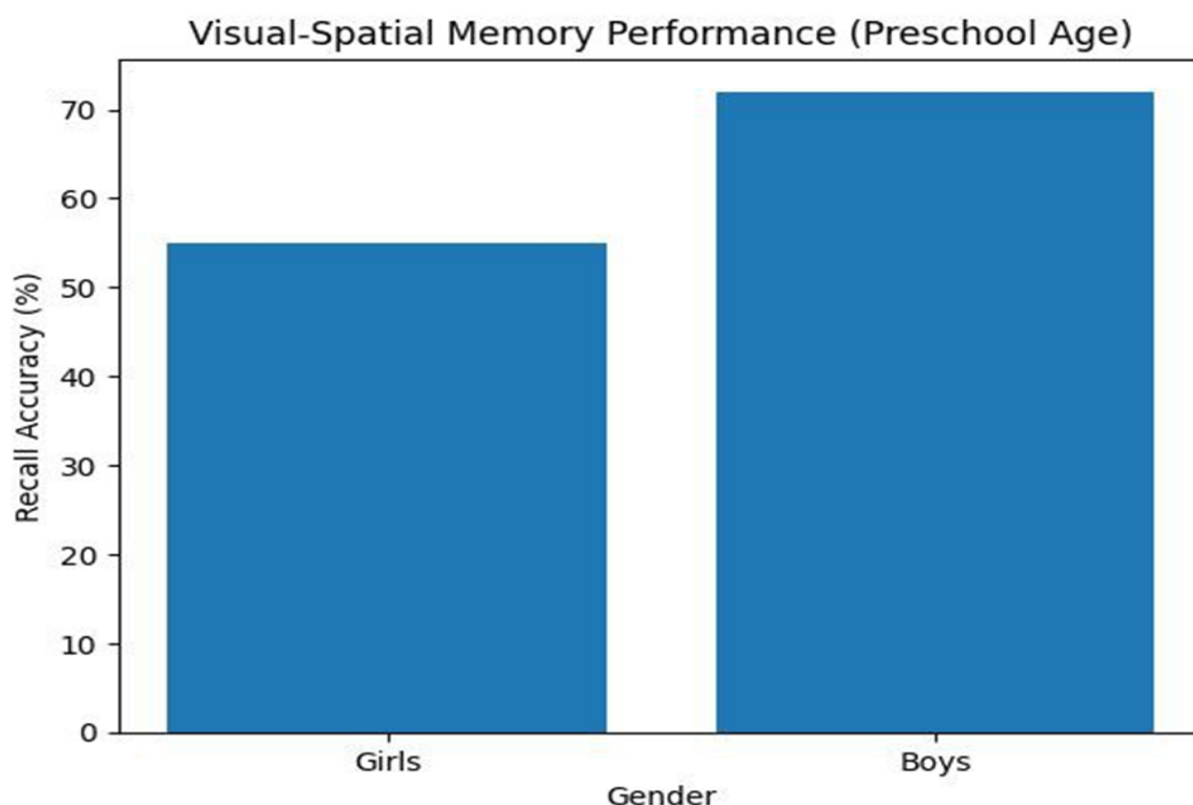
RESULTS

According to verbal memory results, girls recalled words and story content more quickly and consistently. This advantage is explained by earlier development of speech and active social communication. The relative superiority of girls in verbal memory is formed already in preschool age and is reinforced through language-based activities.



Visual-spatial memory results showed that boys more accurately and consistently remembered shapes and spatial arrangements. This is associated with play,

construction, and motor activities. The superiority observed in visual-spatial memory reflects the active development of spatial thinking and motor-related memory mechanisms in boys.



The results indicated that girls remembered words faster, while boys recalled main facts but with less detail and consistency. This suggests that advantages related to verbal memory and speech appear earlier in girls. Girls achieved 70%, while boys achieved 60%.

In the visual-spatial memory test, boys more accurately remembered spatial positions and distances between objects, whereas girls showed slightly lower spatial accuracy but better recall of colors and details. This confirms the relative superiority of boys in visual-spatial memory. Girls scored 55%, and boys scored 70%.

CONCLUSIONS

The results of the conducted experiment showed that the development of different types of memory in preschool children varies depending on gender. Girls demonstrated relatively stronger development in verbal memory, while boys showed superiority in visual-spatial and motor memory.

This can be explained by biological factors: in girls, the left hemisphere (speech center) becomes active earlier, while in boys, the right hemisphere (spatial and motor centers) is more dominant.

Social interactions also directly influence memory development. Girls are more often engaged in conversations, question-answer interactions, and

storytelling, while boys are more involved in motor and object-based play activities.

Researchers from Cambridge University interpret these findings as the result of the interaction between biological and environmental factors.

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