



THE PRACTICAL TECHNOLOGICAL SYSTEM OF USING MARIA MONTESSORI'S METHOD IN DEVELOPING FINE MOTOR SKILLS OF CHILDREN IN PRESCHOOL EDUCATION ORGANIZATIONS

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Abstract:

In this article, the practical technological system of using Maria Montessori's methodology for the intellectual development and fine motor skills development of preschool children is discussed.

Keywords: Child, intellectual development, independence in the educational process, fine motor skill development, Maria Montessori pedagogy, preschool education, developing areas.

Introduction

Today, the central issue of preschool education is ensuring the child's freedom, shaping their independent activity in the educational process, and achieving educational goals through the development of the child's personality. Maria Montessori's pedagogical system is focused on the child's independent self-development. Recognizing that the child has the ability for independent growth,



Maria Montessori developed the "self-development technology" for children and considered that the main task of an educational institution is to provide a favorable environment for the natural process of self-development, or "nourishment," creating a supportive and developmental environment. The most important principle of the Montessori method is to encourage the child to learn independently and develop on their own. For this, a prepared environment is created that helps the child, where specific developmental areas are organized, such as practical life exercises, sensory activities, language, mathematics, and cosmic areas. The main feature of this method, with its unique development plan and the ways of learning about the world around the child, attracts attention. In a Montessori environment, there are great opportunities for a child to develop their talents. A prepared environment has been created to help the child organize



their knowledge about the world into a system. In this environment, activities are conducted using materials specially designed for children, and these activities are interrelated in developmental centers, including practical life exercises, sensory activities, language, mathematics, and cosmic or natural sciences education areas. Maria Montessori's pedagogical system is based on a personalized approach to preschool children. The child is directed towards self-development, independently chooses their didactic materials, and develops at their own rhythm throughout the lessons. [7] Undoubtedly, the main aspect of this approach — the belief in each child's uniqueness and irreplaceability, their individual development plan, and the methods and duration for exploring the world around them — draws attention. Therefore, the Montessori method allows the child to explore the world at their own developmental pace, giving them the opportunity to choose the materials they wish to work with. [10]

In a Montessori group, there are great opportunities for the child to develop their talents. A prepared environment is created to help the child organize their knowledge about the world into a system. In this environment, activities are conducted within five developmental zones: practical life exercises, sensory, language, mathematics, and cosmic or natural sciences education areas. All these activities are interconnected through the use of specially prepared materials. Of course, not everyone has the opportunity to send their child to a preschool institution. In such cases, the Montessori method stands out with its flexibility. By applying this approach, it is possible to create a prepared, developmental environment for the child even at home. The child spends much of their life within the family, and therefore, no pedagogical influence should outweigh the impact of the family. [5]

The meaning of the goals in educating a child according to Maria Montessori's method are:

- **Independence**
- **Self-confidence**
- **Respect for others**
- **Learning to give instructions**
- **Work ethic [2]**

Main Part (Asosiy Qism):

The main task of Montessori education is to create conditions for the child to independently realize their unique abilities and fulfill their nature. To understand



this, Dr. Montessori developed a special environment—the Montessori classroom. Montessori also invented children's furniture used everywhere, including playgrounds, which did not exist before and for which no one had considered the specific needs of children. [3]

Let's explore the Montessori classroom:

- Small chairs, armchairs, tables, and small shelves provide a comfortable environment for children to work, and the furniture is designed to allow children to move and manipulate it independently.
- "Didactic materials" called "Montreal" are placed along the walls of the classroom, creating an environment where children can open and independently use educational materials. [6]
- The materials are positioned at the child's level of growth. The rooms are designed like studios, decorated with bright and soothing colors. The colors should not distract or excite the children.
- The classroom has many plants positioned at a height that allows children to care for them.
- The room is spacious and organized, filled with light and fresh air.
- The Montessori classroom has access to water, allowing children to wash their hands and perform cleaning and service tasks after meals. In short, children can serve themselves. Restrooms should be equipped to be accessible at the child's height.
- In the Montessori classroom, plants are always positioned at a height that allows children to care for them.
- Homework and "daily exercises" are included in the curriculum.
- In a Montessori classroom, children of different ages work together, learning to respect one another. If someone has taken a game or other material first, others must wait their turn. Older children show younger ones how to complete tasks.
- ☐ The game form of the lesson is still a lesson, so you must act accordingly. You cannot scream or make noise. However, walking and running around the room are allowed as long as these movements do not interfere with the learning process of other children.
- ☐ There must be order in each zone: the child should independently handle all the materials and activities.
- ☐ The child does all the tasks themselves. They are never criticized but are also not praised. If everything is done correctly, the teacher will only mention that the task has been completed.



- □ Up to the age of three, the mother takes care of the child. She introduces the child to new toys, items, and skills. If you buy the child a new toy, explain what they should do with it. The same applies to group activities for children after the age of three. The older observer simply monitors and oversees order, but does not force the child to complete any tasks. [6]
- **Methodological Components:**
Classes always begin with a musical greeting. First, the children greet the teacher, and then they greet each other. The key aspect of the songs is that the words are always accompanied by actions, which help develop attention and create a friendly atmosphere. When the music ends, the children independently choose the area they want to work in. Furthermore, the teacher does not interfere with the learning process and simply observes. [7]
- **Maria Montessori's Educational System:**
Maria Montessori's pedagogical system is essentially a natural method absorbed from life, which has gained widespread popularity due to its holistic excellence in child upbringing. Famous Russian educator Yu.I. Fausek, during his 1908 trip to Italy, became acquainted with Maria Montessori's family, which led to a profound change in his life. Fausek not only immediately adopted Montessori pedagogy but also developed practical methods to implement this educational theory. In 1914, Fausek attended a teacher training course on the International Montessori Method in Rome for one month. In 1915, he created his first book titled *"One Month in Maria Montessori's Children's Home in Rome."* [1] In 1923, Fausek once again traveled to Italy with the hope of meeting Maria Montessori. During their meeting in Rome, he presented his book titled *"The Montessori Method in Russia"* to Maria. Despite constant resistance from the government, Yu.I. Fausek supported the Montessori pedagogical system and applied this method in Russia. [1]

Methodology: Montessori Education System Developmental Areas:

The main structural component of the Maria Montessori education system is the division of the entire classroom into developmental areas. By observing children's behavior, Maria Montessori identified these developmental areas, leading to the harmonious development of the child. The most important element is the specially designed environment, which is divided into distinct

zones. It should be noted that in this specially prepared environment, everything is a teaching tool. The environment is organized according to a specific logic. Dividing the room into zones allows for the necessary order to be maintained, making it easy for the child to find the materials they need. The areas are divided as follows: [11]

1. **“Practical Life Development Area”** – The area for exercises related to daily life, where children learn to take care of themselves and their belongings. This includes activities that are essential in daily life (such as washing hands, cleaning shoes, tying shoelaces, ironing, washing dishes, cleaning the floor, and others), and working with small details (such as buttoning up). This area helps children acquire the necessary skills for daily life. By taking care of plants, sweeping, cleaning, washing tables and shelves, and ironing, children prepare their hands for writing and engage their brains in mathematics (for example, how much water should be poured into a flower, how far they need to walk to get other materials, and so on). All of these activities indirectly prepare the child for new, more intellectual tasks. [5]

At the same time, children work with sensory materials, allowing them to develop all their senses.



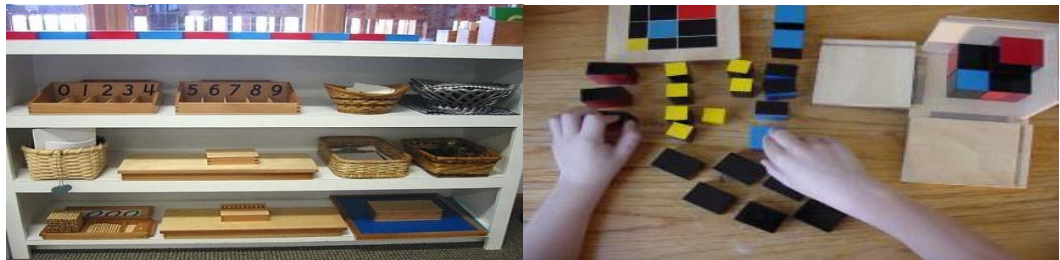
2. **Sensor Development Area”** – The “Sensitive Education Area” is designed for the development and enhancement of senses, perception, and learning quantities, sizes, shapes, and other characteristics. In this area, children learn about the properties of objects, such as shape, size, basic geometric shapes, primary colors, and differentiating the volume of sounds. They also study the weight of objects. The development process of the child is also facilitated through the movements of their hands. One of the core principles of Montessori pedagogy is that finger movements are a tool for the development of human intelligence. Based on this principle, the child can learn the properties of different objects while practicing by moving their fingers. These processes help

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the child develop their abilities to estimate visually, focus their attention, and improve their willpower. [5]



3. Mathematics Area” – In this area, the child learns numbers, the quantity of objects, counting, and mathematical operations such as addition, subtraction, multiplication, division, ordered numbers, and the composition and sequence of numbers. [5]



"Language Area" – In this area, children expand their vocabulary, become familiar with letters and phonetics, and learn to understand and write compound words. Didactic materials for reading and writing are provided in this center. These may include letters, flashcards, and cubes with word combinations, which help children form words. Using these materials, children quickly memorize the alphabet and learn to read by combining syllables during play. [5]



"Cosmic Field" – "Space Center" – In this part of the classroom, children can explore the structure of the universe, weather phenomena, and the characteristics of the animal and plant worlds. To facilitate this, materials that introduce the surrounding world are provided, such as minerals, animal pictures, maps, and globes, which are specially collected for this purpose. This area allows children to grasp the basics of human significance, botany, zoology, anatomy, geography, physics, and astronomy. [5]



Additional Areas: "Creative Development Zone" – In this area, children draw and develop their creative abilities. [5]



"Water Zone" – In one corner of the classroom, children have access to water, where they can wash, pour, and collect water as they wish. After eating, children can wash their own dishes, perform self-care, and cleaning tasks. The toilets should be equipped at a height suitable for children. The classroom should also contain many plants placed at a height appropriate for children to care for them. [5]



"Soft Zone" – "Sandy Center" – This is set up in a part of the classroom where children can work with small details, pour, sift, and create many interesting things. Sand helps relieve muscle tension and also supports children who may have weaker motor skills. Sand play helps children alleviate psychological and emotional stress. [5]



"Circle Zone" – In this area, children practice breathing exercises and finger exercises using musical instruments. They also participate in stories through music. [5]



In the creation of these areas, Montessori saw that the child's inner creative power and the development of the child's personality were being realized. It has been proven that such materials help ease the child's understanding of the surrounding world. Montessori materials primarily contribute to the child's mental development. The goal of Montessori education, as Montessori herself stated, is to "develop power," and this goal defines the overall characteristic of the "didactic material," which is frequently central to Montessori's entire system. Montessori pedagogy is a method of education based on confidence, freedom, independence, and the opportunity for children to prove themselves. [10]

Results:

To determine the effectiveness of Maria Montessori's methodology in the development of fine motor skills in preschool-aged children, we conducted an experiment based on Montessori methodology. We selected 26 children from each of the two large groups at a preschool education institution to be part of the experimental and control groups. We tested the use of a lesson plan designed to develop fine motor skills based on the Montessori method. As a result, we determined that the outcomes of the two groups were different. In the experimental group, exercises such as "Understanding through touch," "Finding objects of the same kind," "Sorting balls by color," "Creative activity with sand," "Putting rice into containers,"



“Water exercises,” and “Magic bag” helped in the development of the children’s fine motor skills. During the experimental research process, the results of fine motor skills development in preschool-aged children were assessed by comparing the initial and final results of the experimental and control groups using the "Student" criterion and mathematical-statistical analysis.

At the beginning of the experiment

	Groups	Number of children in the group	Results of acquisition		
			High	Medium	Low
1	Experimental group	26	6	13	7
2	Control group	26	7	11	8

At the end of the experiment

	Gruplar	Number of children in the group	Results of acquisition		
			High	Medium	Low
1	Experimental group	26	11	12	3
2	Control group	26	8	10	8

It can be seen from the calculations that the results of the experimental group have increased by a factor of 1.07 compared to the control group. This indicates that the experimental group's performance is higher than that of the control group.

Discussions

Exercises based on the Montessori methodology, such as “Understanding through Sensing,” “Finding Similar Objects,” “Sorting Balls by Color,” “Creative Activity with Sand,” “Placing Rice in Containers,” “Water Exercises,” and “Magic Bag,” have proven to be effective in developing children's fine motor skills. First, the good development of children's fine motor skills positively impacts their intellectual development. When using the Maria Montessori method in preschool institutions, the development of fine motor skills influences the nervous system, which in turn improves the quality of education. Second, the Montessori method allows each child to independently choose the type of activity they want to engage in, which increases pedagogical effectiveness. This enables the child to learn to listen to their inner world and understand what interests them in the present moment.



Therefore, when using the Montessori method, each child should independently choose their type of activity. Third, when working with the Montessori method, it is necessary to reduce assistance to the child and provide help only when the child asks for it. This is because independence encourages the child to have more confidence in their abilities and teaches them to appropriately assess their personal achievements.

Conclusion:

The development of fine motor skills ensures the intellectual development of the child. The use of Maria Montessori's methodology to develop children's fine motor skills is appropriate, as the better the fine motor skills of the children, the more active the brain functions become.

In summary, the Montessori approach allows each child to choose their type of activity. The child learns to listen to their inner world and understand what interests them in the present moment; children grow and learn in a specially organized environment. Didactic materials must be freely available to each child. There are rules to be followed, and the educational materials are designed so that the child can independently find and correct their mistakes; there are no "good" or "bad" children. A child's achievements can only be compared to their previous results. In the Montessori approach, there are no restrictions on the child's personality. The Montessori method does not consider punishments or reprimands. In kindergarten or school, the child can either listen to the teacher or move freely around the room during activities. The teacher is not entitled to give explanations because the child should understand on their own that this behavior is not because of misbehavior. The teacher can only observe what is happening; without constantly pointing out the child's mistakes, the child's confidence and independence will naturally increase.

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