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Opinion

Neurolearning and the Importance of Play in Montessori: What does the Brain have to do with it?

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Neurolearning is the science that focuses its studies on the neural basis of learning. This implies knowing and reflecting on cognitive functions (memory, attention, language and perception) in order to plan and develop effective learning strategies according to the educational specificities of each student.

Learning occurs in the central nervous system, in the brain, through the exchange of synaptic connections (transmission of information between neurons). The organ picks up stimuli coming from the environment and through the brain plasticity, it is able to make new synaptic connections, in order to shape human behavior according new acquired skills, such as learning how to crawl, walk, speak, etc.

In this ongoing process of developing new skills, what matters is not the amount of stimuli but the quality of them, and one of the best ways that a child can develop new cognitive skills, is through the play. This activity stimulates child's sensory-motor capacities, promotes an activating in the brain reward system, and exercises the prefrontal cortex, responsible for planning and decision-making skills. It is also through the play that the child learns how to respect limits and rules, as well as how to understand what is safe and dangerous.

In a very natural and practical way, it is possible to observe child's behavior and intention while playing and learning with Montessori materials and activities. The Montessori prepared environment has a playful characteristic that involves cognitive, sensorial and motor stimuli, presenting as a main objective the overall development of the child. Therefore, according to Montessori the activity of play must be voluntary and spontaneous in order to guide the child to develop creative, social, language and physical skills.

Playing involves several areas of the brain, promoting the development of highly complex neural structures. According to Neurolearning, when a child is playing, he/she is working different parts of the brain, such as:

- Motor Cortex: part of the brain responsible for the movements of the whole body, such as walking, running, jumping, swimming and even blinking eyes. The child, while playing, performs various physical activities with the body in order to carry out coordinated and harmonious movements.
- Playing also involves the five human senses (hearing, sight, smell, touch, and taste). In the Montessori Method, the child has the opportunity to learn through the senses by sensorial activities such as Color tablets, Geometric Solids, Sandpaper tablets, The Silence Game, Food Preparation and food tasting, among others.
- The Broca and Wernicke Centers, also activated during play are responsible for speech mobility and verbal comprehension. Singing songs and interacting with peers during play, stimulates and promotes the development of language in children.
- Brain Executive Functions: The executive functions involve cognitive abilities, such as focus, concentration and coordination. In the classroom, they are crucial in activities that requires capacities of planning, reasoning and strategic thinking as in play activities. In a Montessori program, we can easily observe these practices in "daily life activities".

According to Montessori, children are very focused on processes, not ends. This means that when a child is cleaning the table (during the daily life activity) she is in fact, focused in the task process of cleaning the table and not in the end of the activity (have the table clean). We can verified this, observing the child repeating the same activity over and over again, very concentrated and focused, not to achieve a result, but to joyfully participate and domain the process. In this way, we can conclude that is through the interaction of executive functions that a series of skills are developed, from the simplest to the most complex.

Motivation and Learning: Based on a motivation of curiosity and discovery, the child has the freedom to choose the type of activity or play he wants to perform in a Montessori preschool program. The child has inside of him a motivation and a sense of curiosity that are very respectable in a Montessori class.

There are no required group activities or a routine to be followed. The teacher has the role of a guide in which she can introduces a new activity to a student and if he decides to not perform the activity in that moment, he can spontaneously choose another one instead. As we can see, motivation are take into consideration in Montessori play activities, and this is crucial in the learning process. The greater the interest and motivation for an activity, the greater will be the knowledge´s absorption in the child's brain. Without motivation or interest, there is no learning.

Play improves cognitive and emotional healthy: play promotes an activation in a group of neurons that release the neurotransmitter dopamine. This chemical has several functions in the brain, including behavior, motor activity, motivation, reward, humor, anxiety, attention, and learning. For this reason, play activities performs an important role in the cognitive and emotional health of the child. Playing, therefore, improves the ability to reason and understand the world.

Playful activities exercise memory: The act of play enhances the capabilities of thought, attention and concentration. In addition, through playing practices the child develops reasoning and information processing speed, essential capabilities not only at school environment, but also for life.

In the words of Maria Montessori, "play is the work of the child". It means that the play activity is essential in the child's life because it is through it that the child perceives and understands the world around him. In addition, the practice of playing allows the development of new brain connections and the improvement of skills such as the use of gross and fine coordination, language, socialization, emotional intelligence, reasoning and logic, creativity and problem solving. Knowing this, Montessori play activities bring together a range of important exercises for the child's brain development that address cognitive, socio-affective, and sensorimotor aspects [1-3].

Bibliography

1. 10 Indoor Physical Activities For When It's Too Cold To Play

2. "Play Is The Work of the Child" Maria Montessori

3. The Five Characteristics of Play—And of Montessori Work

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