

Study of Effects of Design of the Montessori Space on Child's Cognitive Development

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Abstract - The main objective of this research is to analyze and understand basic needs of children. The spaces in kindergarten plays an important role in child development and growth. This study basically include understanding the child in different phases of life as it focuses on child's growth and development. The role of senses play huge part in kindergarten spaces. This research has helped me to define that cognitive expansion, motor skills, Gross Motor Skill Development, all this takes place according to various senses such as visual sense, tactile sense, olfactory sense. Thus to have a better education path which promotes creativity and natural environment with open spaces give exposure child's development and growth.

Key Words: Cognitive development, senses, natural environment. Creativity, growth.

1. INTRODUCTION

Montessori is a comprehensive approach from birth to adulthood based on observation of children's need as it contains specially designed manipulative "materials for development" that involve children's in different activities. Under the guidance children in Montessori classroom learn by making revelation with materials, discipline, and love of learning. Today, Montessori schools are found worldwide, as in United States there are more than 4000 private Montessori school and more than 200 public schools with Montessori styles programs. The AMI maintains the Montessori educational principles and dissipates Montessori education throughout the world.

1.1 IMPORTANCE OF PRACTICAL LIFE ACTIVITIES WITHIN MONTESSORI METHOD

Kindergarten children are very active explorers of their environment. They are interested in everything and their desire to learn is limitless. The study of child development is often divided into three broad areas: physical, cognitive, and social-emotional. Physical development, which generally occurs in a relatively stable, predictable sequence, refers to physical body changes and includes the acquisition of certain skills, such as gross-motor and fine-motor coordination. Cognitive or intellectual development, meanwhile, refers to the processes children use to gain knowledge and includes language, thought, reasoning, and imagination. Because social and emotional development are so interrelated, these two areas are often grouped together.

1.2 EDUCATION OF SENSES

The education of the senses makes observers, and not only accomplishes the general work of adaptation to the present epoch of civilisation, but also prepares them directly for practical life. In general, when we are teaching, we talk about the object which interests us, and then we try to lead the scholar, when he has understood, to perform some kind of work with the object itself ; but often the scholar who has understood the idea finds great difficulty in the execution of the work which we give him, because we have left out of his education a factor of the utmost importance, namely, the perfecting of the senses.

1.3 COGNITIVE DEVELOPMENT

Cognitive development is a part of Psychology which deals with the processes involving a child's thinking. It studies how children process and gain information at a particular age and how learning mechanisms change and evolve over time.

Piaget theorized on how children used their minds for learning and acquiring new skills. He also noted that as the child ages, the way of thinking also changes. Part of his theory indicated that children will use information from their surroundings to check on their original idea or knowledge on certain things. This may then lead to a change in perception and a particular child may also move on to learn new things and experiences.

2. THE PSYCHOLOGICAL EFFECT OF COLOR

While perceptions of color are somewhat subjective, there are some color effects that have universal meaning. Colors in the red area of the color spectrum are known as warm colors and include red, orange, and yellow. These warm colors evoke emotions ranging from feelings of warmth and comfort to feelings of anger and hostility.

Colors on the blue side of the spectrum are known as cool colors and include blue, purple, and green. These colors are often described as calm, but can also call to mind feelings of sadness or indifference.

2.1 PHASES OF DEVELOPMENT IN MONTESSORI

"The child's development follows a path of successive stages of independence, and our knowledge of this must guide us in our behavior towards him."- Maria Montessori

- The absorbent mind phase- in this children create what they become in give appropriate and secured environment.
- The second stage (Intermediate development) - in this phase the child is energetic, calm, and more stable. The child has the ability to learn or answer through his imagination to explore further. It is the period of developing moral and ethics.
- The third stage (physically and psychologically)- this plane of development is divided into 2 main sub groups:

-The first sub plane (12-15) - this is a stage where child's behave like a new born. The characters observed are seldom stable, indiscipline and rebellion.

-The second sub plane (15-18 years) - in this the child has developed a logical and thinking skills into learning. And, all activities are connected to real life skills helping and satisfying their needs.

- The fourth plane of development (18-21years) - this stage is of transition to childhood. In this stage the child is been given the right exposure to many aspects of practical skills, research and learning, the child becomes more confident in choosing a profession which will satisfy their needs and ability.

2.3 MONTESSORI IMPACT IN TODAY'S SOCIETY

Education is always developing. Montessori is the only system that has worked for all generations and will continue to do so. A school where someone will feel like Alice in wonderland; little tables with chairs; little toilets with little wash basins. Montessori sugar land is made for children. How this helps children outside the school environment. This gives the children the one thing they will need it for rest of lives- "confidence." Montessori schools' curriculum is set in a way to shape your child's personality with positive traits that will make him or her stand out as an individual to be proud of.

3. THE LEARNING ENVIRONMENT

The principal goal of education in schools should be creating men and women who are capable of doing new things, not simply repeating what other generations have done." – *Jean Piaget*

- **CAREFUL PREPARATION-** The layout of the classroom encourages communication and relationships on all levels. Environment is an essential ingredient for the successful development of children. The child relies completely on the environment for the sensorial impressions through which he or she gains a sense of the world in which he or she lives. Montessori wanted the classroom to be a happy, friendly place where children felt at home, where they knew where everything was and where they didn't always have to rely on adults to help them.

- **THINK CHILD SIZED-** Everything in a Montessori classroom is made to be easily accessible to the children. Montessori wanted the children to feel that the schoolroom belonged to them rather than the teachers. She tried to ensure that the materials provided met the interests of the children. It was the children who led her development of the materials and the children who showed her how the environment should be prepared.

- **LIFE SKILLS-** As very young children are frequently frustrated in their attempts to do things for themselves and that what they need is to have specific exercises, as closely linked to real life as possible, that allow them to master the tasks that they see going on around them in everyday life. Unlike the adults in their lives, the children are not interested in achieving end results as quickly as possible, but are far more interested in the learning processes. As a result they will happily repeat exercises again and again until they feel satisfied. Practical life activities are therefore an important part of the Montessori environment. The young child is attracted to activities that he sees going on around him and that give him independence and control of his own life. As a result Montessori introduced classrooms materials and exercises that allow children the maximum possible opportunity to learn how to both look after themselves and their environment.

- **THE SENSORIAL MATERIALS-** The need for order, exactness, self-correction and quiet reflection are all qualities that Montessori children should develop. As children are particularly drawn to certain activities, Montessori concentrated on developing materials that would extend that interest. By isolating specific qualities in the materials and by grading each set in ever-refined series, Montessori was able to give the children the ability to increasingly refine each of their senses. Many of the exercises in this area are also indirect preparations for later mathematics and language work as they enable the child to order, classify, seriate and describe sensory impressions in relation to length, width, temperature, mass and color.



- **MATHEMATICS-** The mathematical concept is presented firstly in a very concrete form followed by the abstract written version. The materials for mathematics introduce the concept of quantity and the symbols 1 through to 10. Then, using a variety of beads and symbol

cards, the child becomes familiar with the numbers as a decimal system by means including concrete experiences with the operation of addition, subtraction, multiplication and division. These operations not only teach the child to calculate, but they provide a deep understanding of how numbers function.

- **IMAGINATION-** Montessori schools tend to offer the children activities that are based on real activities of the everyday world, because Montessori felt that very young children need such experiences. In a Montessori school, therefore, it is likely to see children actually washing, cleaning and cooking rather than pretending to do these activities.
- **OUTDOORS-** Being outdoors is very important. Children develop gross motor skills as they climb, jump and swing, and also social skills as they take turns on equipment and play hide and seek. Montessori believed strongly that children should be in touch with the substance of their world, encouraging work with clay, gardening and growing activities, and even building little houses. Contrary to the belief that a sandpit has no place in a Montessori nursery, it has been suggested that Maria Montessori invented the idea.

4. CHILD PSYCHOLOGY AND DEVELOPMENT

Child psychology is one of the most frequently studied specialty areas. Child psychology focuses on the mind and behavior of children from prenatal development through adolescence. Child psychology deals not only with how children grow physically, but with their mental, emotional, and social development as well. Experts focus only on the many influences that contribute to normal child development, but also to various factors that might lead to psychological problems during childhood. Self-esteem, school, parenting, social pressures, and other subjects are all of tremendous interest to child psychologists who strive to help kids develop and grow in ways that are healthy and appropriate.

4.1 DIFFERENT CONTEXTS OF CHILD PSYCHOLOGY

- **THE SOCIAL CONTEXT-** Relationships with peers and adults have an effect on how children think, learn and develop. Families, schools and peer groups all make up an important part of the social context.
- **THE CULTURAL CONTEXT-** Culture may play a role in how children relate to their parents, the type of education they receive and the type of childcare that is provided.
- **THE SOCIOECONOMIC CONTEXT-** Social class play a major role in child development. Socioeconomic status (often abbreviated as SES), is based upon a number of different factors including how much education people have, how much money they earn, the job they hold and where they live.

5. EXPERIENCE AND DEVELOPMENT

Sensory experiences play a role in development. The environment continues to exert a powerful influence on behavior throughout life Genetics play an important role in development, but experiences are equally important. For example, genetics may influence how a child's brain is wired from birth, but learning and experience that will literally shape how that child's brain grows and develops.

The three of the major theories that describe and explain how children learn include:

- **PEERS-** Child's early social experiences may be centered on family members, this soon expands to other kids at the playground, in the neighborhood, and at school. Because children spend so much time interacting with peers in school, children have a major influence on a child's psychology and development. Children are very influenced by their peers, and these social experiences help shape a child's values and personality.
- **EDUCATION-** School makes up an enormous part of a child's life. Teachers and classmates play a major role in making up a child's experiences, and academics and learning also leave their mark on development.
- **CULTURE-** there are many different influences that can play a role in how a child grows and the person they eventually become. The culture that a child lives in adds yet another element to this already complex mix.

6. CONCLUSIONS

A research on Montessori school was done to study about Montessori education and its theory because of the less schools in India based on this theory. A brief study on Montessori school and the education based on senses was done. It included various sensorial activities. The detailed study evidences that children may benefit cognitively and socially from Montessori education.

To study about the color psychology, and the education of senses. As the schools in U.S and other countries have Montessori schools India does not have these schools.

In extant- The children spending less time engaged with self-chosen learning materials are as effective. Practical life material is useful to the Montessori schools as it help in developing motor skills and development. Colors like yellow, red, blue, green, pink should be used in classrooms and in materials. The teaching should be done through a phonic approach with skillful language context.

It can be concluded that as US and other countries have Montessori schools. India should also have these schools well designed with secure and familiar space. And opportunity to explore, play and grow.

6.1 FUTURE SCOPE

Montessori schools has a superior scope with analysis as Montessori Method of education provides a nurturing, supportive environment for children of all abilities and learning styles. This includes children with special needs, including physical disabilities; learning differences in reading. In India such schools should be there because every child needs a practical education before the theoretical.

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