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The Montessori Method: A Constructivist Approach?

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Abstract:

A constructivist or discovery model, in which students learn concepts from working with materials rather than by direct instruction,Montessori believed that children endeavoured to construct their intellect and want to naturally acquire skills that lead to independence. She firmly believed that children are born with similar tendencies regardless of their culture or economic status. According to Montessori, children have amazing, intrinsic mental abilities to absorb their surroundings during the critical years between birth and age six. The 1930's saw the development of criticisms of Montessori by both Piaget and Vygotsky, opening the door to a break with rigid, innatist notions of learning. This essay makes the case that Montessori's early understanding of activity can serve as the foundation for a modern reappropriation of her ideas in the context of cognitive developmental constructivism.

Keywords **—Maria Montessori, Constructivist, Montessori Method, Jean Piaget, Vygotsky**

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I. INTRODUCTION

Maria Tecla Artemisia Montessori (31st August, 1870 – 6th May, 1952), an Italian physician and educator, is most known for the educational philosophy that bears her name as well as her writings on scientific pedagogy. According to the Montessori approach, children learn best in a setting that has been set up so they can take care of themselves. The learning environment should always be child-centered and encourage children to freely explore any resources they choose (Adhikari & Saha, 2021a). Assuming that a child's knowledge is fully constituted at birth, albeit not yet evoked by experience at various sensory stages in its early life, Montessori worked with what we now know to be a rudimentary kind of innatism. Many aspects of a child's knowledge are indeed in the genes, as revealed by the discoveries of developmental neurobiology, but we also know that other aspects of a child's knowledge are created in interaction with culture and the environment and are not performed in an a priori manner (Elman et al., 1997).

The main topic of controversy now-a-days in cognitive science and education is how much a child's acquisition of new knowledge is intrinsically determined and how much of it is learned - innatism versus constructivism, to use the shortterminology. It can be simply said that, there is clearly too much evidence to refute the constructivist position in the discussion as a whole. Children in various cultural situations exhibit context-dependent cognitive and emotional development. It is because there are rather obvious environmental and socio-cultural items and events that are substantively absorbed as formative components of new knowledge in developing infants, a completely innatist view seems implausible as a general psychological account of learning. Learning goes beyond the intrinsic. Our interest in this paper is to examine Montessori's

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contribution in constructivist terms. The method we use to address this question is one of the history of ideas: the two most prominent constructivists in the early part of the 20[th]century, Piaget and Vygotsky, and what interlinks or differentiates Montessori with/from them.

II. MONTESSORI METHOD IN COMPARISON WITH CONSTRUCTIVIST METHOD

Personalised instruction and Montessori pedagogy can both be incorporated into the constructivist paradigm, which moves the emphasis from knowledge as a product to knowledge as a process (Ultanir, 2012). Although the term "constructivism" has been used in many different ways, they all share the premise that understanding development involves an active learner who is involved in creating meaning. In personalised learning, constructivist instructors tailor their lessons to each student's learning preferences and abilities while also encouraging them to get first hand understanding of a subject (Keefe & Jenkins, 2002). Piaget's core constructivism principle—which is relevant to both personalised learning and Montessori education—states that knowledge must be constructed by the learner. Learning needs the active, constructive participation of the learner in personalised instruction. Maria Montessori and Jean Piaget both believed that the acquisition of knowledge is a spontaneous and natural process that happens through action that forms logical structures, which Piaget termed operations and which Dr. Montessori believed occurs through the manipulation of an object (Adhikari & Saha, 2023).

An evolutionary theory was offered by both authors: Dr. Montessori's four stages of development provide a comprehensive vision of the evolving human being (Grazzini, 1996). Piaget focused on the four stages of cognitive development (Piaget, 1964). Both theories emphasise the idea that development is a change while also pointing out the interconnectedness of the planes or stages, which go against the conventional notion of linear development. Piaget went farther, outlining four interrelated components that can explain growth from one stage to the next: maturation, experience, social transmission, and equilibrium. In Dr Montessori's theory, the sensitivities of each stage guide the development and set its rhythm (Piaget, 1964). The child progresses through these phases at his or her own rate, emphasising the child's cognitive needs, repeated behaviour, self-direction, and the altered teacher role (Saha & Adhikari, 2023a). These stages are consistent with Dr. Montessori's theories on the interaction between nurture and nature. Despite numerous similarities, the writers' perspectives did varied significantly; for instance, Dr. Montessori was dedicated to practise whereas Piaget was dedicated to theory (Elkind, 1967). The term '*social construction*' refers to how students *"build ideas through relationships with others as they theorise and investigate in pursuit of common learning goals"* and is one of the characteristics of both personalised learning and Montessori education. This concept is based on Vygotsky's social construction of knowledge, which sees learning as fundamentally a social activity and emphasises the importance of engagement in school social life for learning to take place. In a similar manner, Lave and Wenger (1991) reinforced the notion that learning is a social process in which knowledge is continuously created by interactions, as seen in both personalised learning and Montessori education.

Vygotsky was of the view that *"the presence of people in the same environment, and the cooperation with peers, induces a reflection and an auto-regulation of one's own behaviour"* (De Marsico et al., 2011), this shows that social learning determines and prepares cognitive growth before individual competencies. The zone of proximal development proposed by Vygotsky in 1980 describes the *"distance between the actual developmental level as determined by independent problem-solving and the level of potential development as determined through problem-solving under adult guidance or in collaboration with more capable peers"* (Vygotsky, 1980). It is because the activities inside a person's zone of proximal development will drive the most intrinsic motivation, learners' goals must be unique and relevant.

The normalisation theory put forward by Dr. Montessori, which outlines the occurrence of spontaneous discipline, ongoing and joyful activity, and social attitudes of help and sympathy for others, is also supported by Vygotsky's theories. Dr. Montessori and Vygotsky both emphasised the value of the scientific method in pedagogy and agreed that instruction can influence children's development, but Vygotsky emphasised the value of co-construction and thought nothing about a child's development that is biologically determined cannot be shaped in a social environment (Bodrova, 2003). Dewey stressed the value of the learner's own experiences, which is supportive to Montessori education and individualised instruction. According to Bruner's (1961) theory of discovery learning, practising self-discovery teaches people how to learn knowledge in a way that makes it more useful for addressing problems.

Collins et al. (1988) established the idea of cognitive apprenticeship, which emphasises the purposeful practise of target abilities within the functional context of their usage and is somewhat related to both individualised instruction and the Montessori method. The four aspects of any learning environment that cognitive apprenticeship emphasises are content, technique, sequencing and sociology. Modelling, mentoring, scaffolding, articulation, reflection and exploration are some of the techniques used in cognitive apprenticeship. The idea contends that complexity and diversity can be increased by conceptualising the entire activity before concentrating on its component elements. Situated learning is a type of instruction where students complete practical assignments in collaborative practise groups that are motivated internally (Lave & Wenger, 1991).

According to Bruner (1961), education must encourage a student's growth into an independent, self-reliant person. Both personalised learning and Montessori education aim to produce self-regulated learners who can make independent decisions, direct and organise their own learning, and shape the learning process to suit their individual needs, interests, and preferences. Self-determination theory offers a comprehension of motivation that takes into account fundamental psychological requirements for relatedness, competence, and autonomy. It is described as a set of abilities, information, and convictions that permit someone to act in a goal-directed, self-regulatory and independent manner. In line with the fundamental requirements outlined in self-determination theory, Casquejo Johnston (2016) asserted that Montessori education comprises practises and structures that assist children's intellectual, psychological and emotional growth. According to research, personalised learning interventions that use a self-determination theory framework improve students' learning needs and interests, allowing for more learning control and leading to students' increased interest in learning and understanding the course topics. Goal-orientation theory states that students should have their own learning objectives and that these objectives mediate how well they are engaged in class. Instead of trying to please a teacher or outperform peers, goal-setting-and-achieving procedures are used in Montessori education to help students feel in control of their education and ultimately autonomous (Murray, 2011).

Personalised education emphasises students' own development of a new skill by concentrating on their mastery goals. Goal-orientation theory (Rathunde, 2003), which contends that pupils should have their own learning goals, and personalised learning share many similarities. According to Kaplan and Maehr (2007), when mastery goals are regarded as being prioritised on a success context and when students embrace them as a direction, the quality of participation in tasks is higher. The optimal experience theory and flow theory are closely connected to both personalised learning and Montessori education (Csikszentmihalyi &Rathunde, 2014). According to flow theory, a person is fully engaged in a work at hand when they are largely unaware of the passing of time and are aware of what needs to be done from one moment to the next. Additionally, it was discovered that students showed greater interest in difficult tasks that called for a high level of expertise and that they enjoyed them more after accomplishing them.

III.   CONCLUSION

In the end, the Montessori educational approach must be considered as Montessori's contribution to the domain of pedagogy (Adhikari & Saha, 2021b). Despite the fact that she created a specific psychological theory of learning and child personality, her attention was always on the conditions that must exist for children to develop and learn to their full potential. Her thought specifically grew out of concerns about how obstacles to the best learning and growth may be removed in a challenging, more extensive educational setting. This passion was sparked by Montessori's *Casa dei Bambini, Children's Houses*, care facilities for the children of low-income families that she established as part of a slum rehabilitation plan in Rome. Montessori came to the conclusion that young children continually reached their potential through purposeful work after careful, methodical study of them. The approach she created is therefore founded on the idea that young children learn best in a compassionate and supportive atmosphere where they have access to materials that offer experiences that are developmentally appropriate and demand self-directed, autonomous learning. Additionally, Montessori insisted that the approach must enable a child to reach their full potential in all spheres of life, including health, social skills, physical coordination, and all cognitive and emotional components of their minds (Saha & Adhikari, 2023b). The Montessorian philosophy places a strong emphasis on the final integration of well-planned activities from real life since this idea of a holistic curriculum is vital to it.This study discovered that the Montessori method of education can be reconstructed as the foundation for a workable contemporary programme in early childhood education, within a constructivist account of learning and knowledge. The argument has been that, while Piaget and Vygotsky both held Montessori in high regard, they each wanted to use her method and materials as a vehicle for the beneficial activity that kids engage in when they learn, on the one hand as creators of their own knowledge and on the other as collaborators with others who are more knowledgeable. Future research has a variety of fascinating opportunities if we accept that this constructivist viewpoint is a viable way to interpret Montessori.Montessori's early understanding of activity can serve as the foundation for a modern reappropriation of her ideas in the context of cognitive developmental constructivism.

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