



The Effectiveness of Montessori Methods in Promoting Fine Motor Skills among Toddlers in Sri Lanka

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ABSTRACT

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This paper examines how the Montessori system works in improving fine motor skills in toddlers in Sri Lanka. 25 teachers and 25 parents were interviewed using a qualitative phenomenological study, with semi-structured interviews conducted to identify their experiences with using practical life activities, sensory, outdoor learning, and art-oriented tasks as Montessori practices. The results provide us with information that Montessori practices enhance dexterity, coordination, and control of the hands, which help individuals develop intellectually and socio-emotionally. Learner-centred strategies as well as the strategies of learning through doing and reflective practice were found to be of high interest by the teachers, whilst the same was reflected by the themes, individualized attention, and socio-emotional development by the parents. The application of Montessori principles and existing practices in the setup of dynamic learning spaces will enable the needs of learners in low-resource settings. The research demonstrates the significance of the reflective practice and cooperation between the educators, parents, and policymakers to develop an equitable system of holistic development of early childhood education in Sri Lanka.

Keywords: *Early Childhood Education; Fine Motor Skills; Learner-Centred Practices; Montessori Methods; Sri Lanka*

Background

The Montessori system was created by Dr Maria Montessori, who focused on the child as the centre of the learning process and concentrated on purposeful activities with hands-on learning, which allows the child to be independent and holistic (Friedman, 2014). Activities of fine motor manipulation (beading, manipulation of objects using a tweezer, practical life) are crucial components of this approach that will strengthen dexterity, hand-eye coordination, and self-help skills, which are key preconditions of early writing and everyday functioning (Lillard, 2019). It is known that fine motor skills are the basis of cognitive, emotional, and social development, which makes them a necessity in early childhood development (Cameron *et al.*, 2016). Nevertheless, in Sri Lanka, fine motor development is not a primary focus of early childhood education because of the scarcity of resources, educators and awareness, and the use of rote learning practices instead of skills in learning and education (Samarakkody, *et al.*, 2012). According to both national and international research, Montessori practices have the potential to enhance physical, academic, and social performance at an early age, even in a low-resource setting (Shoshani, Steinmetz, & Kanat-Maymon, 2016; Karunararatne, 2021). In this regard, this research seeks to establish the success of Montessori in developing fine motor skills among children in Sri Lanka, among toddlers. These results are likely to be useful to policymakers and other concerned organizations trying to enhance early childhood education. The research is relevant by targeting a less emphasised but fundamental field of child development that helps address the existing attempts to enhance learning conditions in young children. The qualitative phenomenological approach should be adopted as it will allow thorough examination of the experiences and perceptions of the teachers and parents of the Montessori-based fine motor activities, thereby being in tandem with the overall aims of the study.

Literature Review

Montessori education emphasizes hands-on, child-centered learning, fostering independence and holistic development (Montessori, 1964; Lillard, 2019). Practical life activities, such as pouring and threading, are integral to enhancing fine motor skills, which are foundational for cognitive and socio-emotional growth (Rule & Stewart, 2002; Cameron *et al.*, 2012). Research indicates that fine motor proficiency significantly contributes to early academic achievement and executive functioning, highlighting its importance in early childhood education (Cameron *et al.*, 2012). Montessori's experiential approach contrasts with rote learning, offering individualized attention and promoting autonomy (Lillard, 2012). Reflective practices by educators further strengthen inclusivity and adaptability in learning environments (Biggs & Tang, 2011). Additionally, integrating Montessori principles with thematic and technology-assisted learning has shown promise in improving engagement and cognitive development (Samarasinghe, 2021). Despite these benefits, challenges such as resource limitations and inadequate teacher training persist, particularly in low-resource contexts like Sri Lanka (Samarakkody *et al.*, 2012). Overall, existing literature supports the effectiveness of Montessori methods in fostering fine motor skills and holistic development, while emphasizing the need for policy support and professional development to overcome systemic barriers (Shoshani, Steinmetz, & Kanat-Maymon, 2016).

Methods

A qualitative phenomenological approach was utilised to obtain the descriptive, lived experiences of the teachers and parents concerning Montessori practices and the impact of the latter on the fine motor development of toddlers (Creswell & Poth, 2016). The main method of data collection was semi-structured interviews, which gave the participants freedom to be open about their perceptions and experiences, and at the same time gave the interviews a similar structure (Smith, Larkin, & Flowers, 2021). The research sample comprised 25 Montessori educators and 25 parents who were picked up by purposive sampling in

Colombo, Hambantota, and Gampaha districts. Although such a size provided deep, comprehensive information, the three districts were all that were geographically covered. It is also necessary to consider that Montessori implementation and fine motor development of children can be affected by regional and institutional disparities, including differences in the availability of resources, the quality of teacher training, socio-economic status, and parental expectations. The sample could have been wider or more inclusive to include more points of view of districts that have different education settings. The thematic approach was used to analyse the data, which allowed detecting repeated patterns associated with the development of fine motor skills, the learner-centred approach, and emotional and social outcomes of the Montessori methods. This enabled a better insight into the experience of Montessori practices in the definite regional backgrounds examined, as well as the necessity to address broader differences throughout Sri Lanka.

Results & Discussion

Table 1: Key Findings on Montessori Methods and Fine Motor Skill Development

Themes	Sub-themes	Participant Quotes	Details
Student-Centred Learning Approaches	Hands-on activities, independence-building, attention and focus	Tr: “When the children do pour or threading on their own, they concentrate more and don’t need much prompting.”	Teachers noted the success of practical exercises (pouring, cutting, threading, nature-related activities), as Montessori stressed acquiring knowledge through actions, promoting fine motor skills in children, and these activities also promote independence and attention (Lillard, 2012).
Emphasis on Practical Life and Sensory Activities	Self-help skills, sensory exploration, confidence building	Pr: “My child now buttons her dress alone and even insists on serving food by herself.”	Parents reported positive changes in the skills children showed to fulfill the daily activities (to button, to use utensils), which is consistent with the findings that Montessori activities help improve the self-help abilities of children and make them freer (Rule, & Stewart, 2002).
Reflection and Continuous Improvement	Adaptation to learner needs, inclusive strategies, and teacher growth	Tr: “After observing struggles during cutting activities, I changed the scissors and adjusted my instructions.”	Reflective practices were used by teachers to alter strategies to apply to specific needs, which were useful in inclusion and responsiveness in learning environments (Biggs & Tang, 2011).

Holistic Development	Socio-emotional growth, focus and concentration, and confidence development	Pr: “My son is calmer now; he sits longer and finishes tasks without getting frustrated.”	Improved socio-emotional stability, concentration and confidence in children were mentioned by both teachers and parents and did not contradict the holistic approach in Montessori education (Grolig <i>et al.</i> , 2020).
Integration with Current Approaches	Blending Montessori with thematic learning, technology use, and cognitive engagement	Tr: “Using a tablet-based matching game after a Montessori sensorial activity kept the children motivated and connected both methods worked well.”	Integrating Montessori principles with thematic and technology-assisted learning enhanced engagement and diversified instructional approaches, supporting fine motor and cognitive skill development (Samarasinghe, 2021).

The findings of this study underscore the effectiveness of Montessori methods in fostering fine motor skills among toddlers in Sri Lanka. The thematic analysis revealed that hands-on, student-centered activities such as pouring, threading, and cutting significantly enhanced dexterity and independence, aligning with Montessori’s emphasis on experiential learning (Lillard, 2019; Montessori, 1964). Parents observed notable

improvements in self-help skills, including dressing and serving food, which reflects the practical life component of Montessori education (Rule, & Stewart, 2002). Teachers demonstrated adaptability through reflective practices, adjusting materials and instructions to meet individual learner needs, thereby promoting inclusivity and responsiveness (Biggs & Tang, 2011). Furthermore, the integration of Montessori principles

with technology-based activities and thematic learning enriched engagement and cognitive development, suggesting that hybrid approaches can complement traditional Montessori strategies (Samarasinghe, 2021). Importantly, the study highlights holistic benefits beyond motor skills, including socio-emotional growth, improved concentration, and confidence, reinforcing the comprehensive nature of Montessori education (Grolig, *et al.*, 2020; Taggart, Heise, & Lillard, 2018). However, challenges such as resource limitations, variability in teacher training, and systemic constraints within Sri Lanka’s exam-oriented education system remain significant barriers (Samarakkody, *et al.*, 2012). Addressing these issues through policy support, professional development, and equitable resource allocation is essential for scaling Montessori practice effectively (Creswell & Poth, 2016). Overall, the research affirms that Montessori methods, when adapted to local contexts and supported by collaborative efforts among educators, parents, and policymakers, can substantially contribute to early childhood development in low-resource settings (Shoshani, Steinmetz, & Kanat-Maymon, 2016).

Conclusion

The Montessori education provides Sri Lankan toddlers with an exceptionally successful way of mastering fine motor skills, since its approaches are based on the hands-on approach, exploration, and autonomy of operation. These strategies offer rational and positive teaching but leave the children to learn at their own pace. The importance of reflective practice and parental involvement in developing supportive and holistic

early childhood education settings is also mentioned in the paper. Nevertheless, in spite of the advantages, one should acknowledge that there are certain weaknesses and difficulties in introducing the Montessori practices in Sri Lanka. The fact that resources are limited, the Montessori teachers are not well-trained, the quality of the classroom will differ, and parental knowledge will also act as a barrier to the complete efficiency of the method. Also, the high price of genuine Montessori materials and the challenge of embedding Montessori principles into the inflexible, exam-based education are also a major obstacle. Consequently, although the use of Montessori strategies in current teaching methods has the prospect of enhancing education in early childhood and producing well-rounded and confident learners, the advantages offered can be achieved only when the threats are considered critically and when it comes to appropriate training, resource distribution, and policy assistance.

Declarations

Ethics Approval and Consent to Participate: Participants gave informed consent, participated voluntarily, and their responses were kept confidential.

Conflicts of Interest: Not Applicable.

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