

The Role of Montessori Learning Assessment in Early Childhood Education 3-6 years old

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ABSTRACT

This study aims to analyze the role of assessment in Montessori-based learning for early childhood (aged 3–6 years), particularly within the practical life area, and its implications for the development of prosocial behavior. The study is grounded in the issue that early childhood education practices remain largely dominated by conventional, teacher-centered approaches that emphasize academic achievement while providing limited opportunities for fostering children's independence and social skills. In addition, the assessment dimension within Montessori education has not been extensively explored, particularly in relation to authentic assessment practices aligned with children's developmental characteristics. This research employed a qualitative approach with a descriptive design. Data were collected through documentation studies and literature review, supported by secondary data on the Gross Enrollment Rate (GER) of early childhood education in Indonesia from 2021 to 2025. Data analysis was conducted using an interactive model involving data reduction, data display, and conclusion drawing. The validity of the findings was ensured through source and theoretical triangulation. The findings reveal that the implementation of Montessori learning integrated with authentic assessment significantly enhances children's prosocial behavior, including helping, cooperation, sharing,

and honesty. There is a clear shift in developmental categories from "not yet developed" and "beginning to develop" to "developing as expected" and "very well developed" across all indicators. Authentic assessment conducted through continuous observation enables educators to capture children's development holistically and contextually. Furthermore, concrete activities within the practical life area effectively facilitate the internalization of social values through direct experience.

INTRODUCTION

The development of early childhood education (PAUD) currently faces the challenge of producing individuals who excel not only academically but also possess independence, problem-solving abilities, and adaptive life skills from an early age. The 3–6 year age period is known as a crucial period (golden age) characterized by rapid cognitive, socio-emotional, and motor development, requiring appropriate and targeted stimulation (Aditya et al., 2024). Empirical evidence shows that conventional, teacher-oriented learning approaches still dominate practice in the field, resulting in children being given less opportunity to explore and develop their potential independently (Nadiastuti et al., 2024). This condition impacts children's low independence and life skills, which should be the main foundation for long-term development.

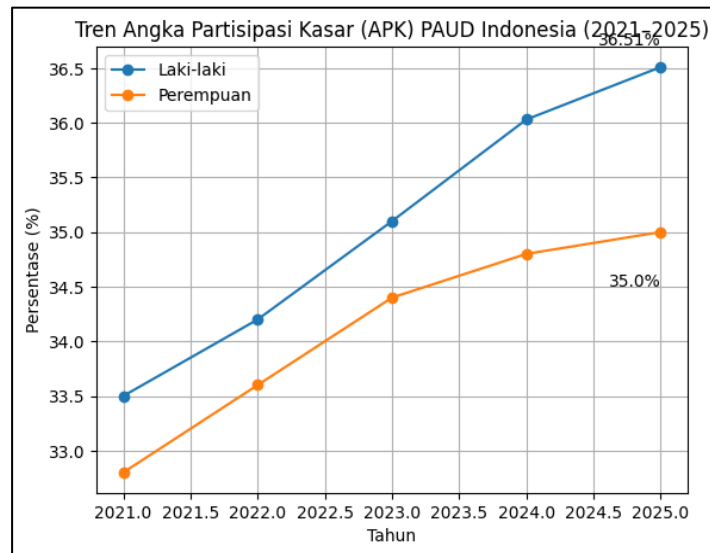


Figure 1. Gross Participation Rate (APK) of Early Childhood Education in Indonesia 2025

Source: Central Statistics Agency (BPS), 2025

Data shows that the Gross Enrollment Rate (GER) for Early Childhood Education (ECE) in Indonesia for the 2021–2025 period has consistently increased across both genders. Boys' participation has gradually increased from approximately 33.5% in 2021 to 36.51% in 2025, while girls' participation has also increased from approximately 32.8% to 35% over the same period. While this upward trend reflects improved access to early childhood education services, the overall participation rate remains low, below 40%. Furthermore, a relatively stable gender gap exists, with boys' participation rates consistently higher than girls'. This indicates that efforts to increase access and equity in early childhood education services still need to be strengthened, both in terms of expanding reach and increasing public awareness of the importance of early childhood education (Marlina et al., 2026).

Field observations indicate that many early childhood education institutions (PAUD) still emphasize academic achievement over life skills development, even though life skills play a strategic role in shaping children's readiness for real life. Practical life activities in the Montessori approach have been shown to foster independence through simple activities such as washing hands, tidying up eating utensils, and cleaning the environment, which directly develop children's responsibility and discipline (Marlina et al., 2023). Furthermore, children who are not given the opportunity to engage in independent activities tend to experience obstacles in their social and emotional development, including dependence on adults and poor decision-making skills (Nadiastuti et al., 2024). Therefore, learning that emphasizes direct experience is an urgent need in the context of early childhood education.

The Montessori approach offers a child-centered learning paradigm that emphasizes directed freedom, the use of concrete tools, and active involvement in daily life activities. In this context, the Practical Life area serves as a primary foundation that not only trains motor skills but also builds concentration, coordination, and organized thinking (Saefullah et al., 2023). Research shows that activities such as pouring, buttoning clothes, and spooning not only provide physical exercise but also contribute to the development of executive brain functions such as focus and self-control. Furthermore, the Montessori method has been proven to integrate cognitive and motor skills simultaneously through concrete experiences that are meaningful to children (Juliana Pilpres et al., 2023).

Preliminary studies from various studies indicate that Montessori implementation, particularly in the Practical Life area, has a positive impact on children's independence, fine motor skills, and problem-solving abilities. Findings indicate that children involved in practical life activities are able to carry out daily activities independently, such as feeding themselves, cleaning the environment, and tidying up learning tools (Nadiastuti et al., 2024).

Other studies also reveal that involvement in concrete activities improves hand-eye coordination and strengthens children's learning concentration (Aditya et al., 2024). However, most research still focuses on the implementation aspect of learning and its impact on child development, while the assessment aspect of learning in the Montessori context has not been studied in depth (Hadian et al., 2026).

The research gap is evident in the limited number of studies that specifically discuss how Montessori learning assessments are conducted, particularly for children aged 3–6 years in the Practical Life area. Most studies focus more on learning outcomes or the effectiveness of the method, without outlining authentic evaluation mechanisms that align with Montessori principles that emphasize observation, individualization, and holistic child development (Nursyifa & Mashudi, 2025). Furthermore, field practice shows that assessments often still use conventional approaches that are less relevant to the characteristics of Montessori learning, potentially obscuring children's true developmental achievements. This condition indicates an urgent need for a more comprehensive study of the role of assessment in Montessori learning (Sakuroh et al., 2026).

Based on the above description, this study aims to analyze in depth the role of assessment in Montessori learning for early childhood aged 3–6 years, specifically in the context of the Practical Life area. This study is expected to provide theoretical contributions in enriching the concept of authentic Montessori-based assessment and practical contributions for educators in designing evaluation systems that are appropriate to the characteristics of child development. In addition, this study also aims to bridge the gap between learning practices and assessment, thereby being able to produce a learning model that is more holistic, contextual, and oriented towards overall child development.

RESEARCH METHOD

This study uses a qualitative approach with a descriptive design to understand the phenomenon of early childhood education (PAUD) participation and its implications for access to learning services, particularly in the context of Montessori assessment for children aged 3–6 years. A qualitative approach was chosen because it can explore meaning, processes, and social contexts in depth based on empirical data developed in the field and secondary national statistical data (Sugiono, 2021).

Data sources in this study include secondary data in the form of PAUD Gross Enrollment Rate (APK) statistics for 2021–2025 from the Central Statistics Agency, as well as supporting data from relevant scientific literature. Data collection techniques were carried out through documentation studies and literature reviews, while data analysis used an interactive model that includes data reduction, data presentation, and systematic conclusion drawing. Data validity was maintained through source and theory triangulation techniques, so that the results of the analysis can provide a comprehensive picture of low PAUD participation and its relevance to the need to strengthen a more contextual and holistic learning assessment system.

RESULTS

The results of the study showed a significant increase in all indicators of prosocial behavior in early childhood after the implementation of Montessori learning, especially in *the Practical Life area*. In the initial conditions (before the intervention), most children were still in the BB (Not Yet Developing) and MB (Starting to Develop) categories, especially in the cooperation and sharing indicators. After the implementation of the learning, there was a consistent shift towards the BSH (Developing According to Expectations) and BSB (Developing Very Well) categories in almost all indicators. The data showed that the sharing indicator experienced the highest increase, with all children reaching the minimum BSH category in the post-intervention stage. These findings indicate that concrete activities in Montessori are able to facilitate the internalization of social values through direct experience. Thus, learning not only impacts cognitive aspects, but also children's social-emotional development.

Changes in the distribution of developmental categories were also evident in the helping and honesty indicators. Before the intervention, the helping indicator was dominated by the BB (9 children) and MB (7 children) categories, with no BSB category. However, after the intervention, the majority of children moved to the BSH category (15 children) and some began to reach MB (1 child), indicating a significant increase in basic prosocial behavior. In the honesty indicator, an increase was also evident from the initial dominance of the MB (8 children) and BB (8 children) categories, to BSH (14 children) and BSB (2 children). This reinforces that Montessori learning provides space for children to learn through real-life experiences that involve the value of honesty in everyday activities. Furthermore, this increase indicates a more stable development of internalization of moral values compared to solely through an instructional approach.

In the cooperation indicator, the changes that occurred showed a more progressive pattern of improvement compared to other indicators. Before the intervention, the majority of children were in the BB category (14 children), indicating a low ability to cooperate in the learning context. After the implementation of Montessori, there was a significant increase with the emergence of the BSB category (10 children) and BSH (6 children), and there were no more children in the BB category. This indicates that collaborative activities in Montessori, such as group activities and the use of concrete tools, can effectively improve children's social interaction skills. This improvement is in line with Montessori principles that emphasize learning based on social experiences and environmental interactions.

To clarify the distribution of overall child development, the following table presents a summary of the analysis results in the form of development percentages (not a repetition of raw data):

Table 1. Percentage of Children's Prosocial Behavior Development (Before and After Intervention)

Indicator	BB Before	MB Before	BSH After	BSB After
Help	56%	44%	94%	0%
Cooperation	88%	12%	38%	62%
Share	94%	6%	100%	0%
Honesty	50%	50%	88%	12%

Source: Processed data, 2026

The results of this study indicate that the implementation of Montessori learning has a significant positive impact on improving prosocial behavior in early childhood. The most

prominent improvement occurred in indicators of sharing and cooperation, demonstrating the success of the Montessori approach in building constructive social interactions.

Furthermore, authentic assessments conducted through direct observation allow educators to capture children's development more holistically, in accordance with the characteristics of Montessori learning. These findings also reinforce that assessment in Montessori serves not only as an evaluation tool, but as an integral part of the learning process itself. Therefore, the integration of experiential learning and authentic assessment is key to continuously improving the quality of early childhood education.

DISCUSSION

The findings of this study indicate that assessment in Montessori learning plays a significant role in authentically identifying and monitoring the development of prosocial behavior in early childhood. Through observation, interviews, and documentation, educators can obtain a comprehensive picture of children's development in real-life contexts, not just the end result of learning. This aligns with the concept of prosocial behavior, which includes sharing, cooperation, helping, and honesty, as forms of social interaction that develop through direct experience (Lillard & Jassen, 2020).

The Montessori approach allows for assessment to be conducted naturally throughout the learning process. Thus, assessment functions not only as an evaluation tool but also as an integral part of the learning process itself. These findings reinforce the relevance of authentic assessment in the context of early childhood education (Awaliyah et al., 2026).

The effectiveness of Montessori *Practical Life learning* in developing prosocial behavior is evident in the significant improvement in all indicators after the intervention. The daily life activities provided to children encourage them to adapt to their social environment and develop social skills naturally. This aligns with Montessori's view that practical life exercises help children orient themselves in society and foster social independence (Tamara, 2023).

Furthermore, the imitation process in learning is an important foundation for developing empathy and social behavior in children (Lillard & Jassen, 2020). Children learn through concrete examples provided by teachers and peers. Therefore, experiential learning has been shown to be more effective than purely instructional approaches (Kamila Rahma Shalehah et al., 2025). In the helping indicator, the improvement demonstrated that children were able to internalize the values of empathy and social concern through learning activities.

Children not only helped based on teacher instructions, but also did so spontaneously in everyday situations. This demonstrates that Montessori learning successfully instilled prosocial values deeply. This success aligns with Montessori principles, which emphasize that the teacher's role is as a facilitator, not the center of learning (Gutek, 2016). Furthermore, children learn helping behavior through direct and symbolic stimulation within the learning environment (Lillard & Jassen, 2020). Thus, the development of helping behavior occurs not only cognitively but also through repeated social experiences.

The development of the cooperation indicator showed the most prominent results compared to other indicators. This is influenced by the *cooperative work activities* in Montessori learning, which directly train children to work in groups. Children are accustomed to interacting, sharing roles, and completing tasks with peers. Environmental factors, such as the role of teachers, family, and culture, also influence children's social development (Hurlock, 1997). Learning that involves intensive social interaction allows children to develop optimal social skills. Therefore, cooperation is the indicator with the most significant development in this study.

In the sharing indicator, all children achieved the expected developmental category after the intervention, demonstrating the success of Montessori learning in fostering a sharing attitude. Sharing food, play equipment, and learning spaces became part of the children's daily experiences. This aligns with social constructivism theory, which states that children learn through interactions with their social environment (Sugiono, 2021).

The teacher's role as a facilitator is also crucial in providing children with examples of appropriate behavior. Montessori emphasizes the importance of clear demonstrations so that children can optimally observe and imitate (Lillard & Jassen, 2020). Thus, sharing behavior develops through a combination of direct experience and meaningful social interactions. Honesty indicators also showed significant improvement, which is inseparable from the child's emotional environment (Sulastini et al., 2023).

Montessori learning focuses not only on cognitive activities but also on fulfilling children's emotional needs, such as security, affection, and appreciation. This aligns with the theory of basic needs, which states that child development is influenced by the fulfillment of psychological needs (Abraham, 2010). Simple interventions such as hugs between teachers and children have been shown to significantly impact the development of honesty and responsibility. Furthermore, collaboration between teachers and parents is also a crucial factor in supporting child development (Ibrahim et al., 2024). Thus, honesty develops not only through learning but also through a supportive environment.

Montessori learning integrated with authentic assessment can significantly improve children's prosocial behavior. A systematic, sequential, and experience-based learning process is key to successfully shaping children's character. However, challenges remain, especially for children entering the learning process midway through, requiring more intensive adaptation from teachers and parents. This demonstrates that the success of Montessori learning depends not only on the method but also on consistent implementation and environmental support. Therefore, the integration of learning, assessment, and the environment is a key factor in improving the quality of early childhood education.

CONCLUSION

Montessori learning integrated with authentic assessment has been shown to significantly improve prosocial behavior in early childhood, particularly in areas such as helping, cooperation, sharing, and honesty. This improvement is evident not only in changes in children's developmental categories but also in the emergence of spontaneous behavior in daily life without direct instruction from teachers. This demonstrates that experiential learning in *the Practical Life area* is able to internalize social values more deeply than conventional approaches. Authentic assessment, conducted through ongoing observation, provides a holistic picture of children's development, allowing educators to tailor learning strategies to each child's individual needs. The success of Montessori learning is inseparable from a systematic, sequential, and consistent process that enables children to meaningfully understand each stage of the activity. A conducive learning environment, the teacher's role as a facilitator, and parental support are crucial factors in strengthening learning outcomes. The integration of learning and assessment makes the educational process more reflective and oriented toward holistic child development, not just academic achievement. Therefore, the Montessori approach with authentic assessment can be a strategic alternative for improving the quality of early childhood education in Indonesia. The implications of this research suggest that the application of contextual and continuous assessment in early childhood education (PAUD) learning practices needs to be strengthened, particularly to optimize children's social-emotional development. Therefore, educational

institutions, educators, and policymakers are expected to adopt this approach more widely to improve the quality of PAUD services that are holistic, inclusive, and oriented toward children's future developmental needs.

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