



Optimization of Independence and Improvement of Children's Learning Outcomes Through the Implementation of the Montessori Method in Group A at RA Al Hikmah Cengkong, Kecamatan Parengan, Kabupaten Tuban.

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Abstract:

This study aims to optimize children's independence and improve learning outcomes through the implementation of the Montessori method at RA Al Hikmah. The Montessori method is a child-centered learning approach that emphasizes freedom in learning, the use of educational tools, and an environment that supports exploration. This research employs Classroom Action Research (CAR) using the Kemmis and McTaggart model, which consists of four stages: planning, implementation, observation, and reflection. The subjects of the study were 20 children aged 4–5 years at RA Al Hikmah, with data collection techniques including observation, interviews, and learning outcome assessments. The results of the study indicate that after implementing the Montessori method, there was a significant improvement in children's independence, measured through indicators such as the ability to complete tasks independently, discipline, and initiative in learning. Additionally, children's learning outcomes increased from an average score of 65.4 before the intervention to 85.2 after the intervention, based on activity-based Montessori evaluations. This improvement demonstrates that the Montessori method is effective in supporting early childhood development, particularly in cognitive and socio-emotional aspects. With the freedom to choose activities and the use of materials suited to their developmental stages, children's learning motivation increased, positively impacting their learning outcomes. This study recommends the implementation of the Montessori method as a teaching strategy at RA Al Hikmah to enhance children's independence and learning outcomes. These findings also provide valuable insights for educators and researchers in developing appropriate learning methods for early childhood education.

Keywords: Montessori Method, Children's Independence, Learning Outcomes, Early Childhood Education, Classroom Action Research

INTRODUCTION

Education at the Raudlatul Athfal (RA) level plays a crucial role in shaping children's character, independence, and readiness for higher levels of education. As a formal educational institution equivalent to kindergarten (TK) and based on Islamic values, RA aims to instill Islamic principles while fostering the cognitive, social, and emotional

development of early childhood learners. One of the main challenges in RA education is developing methods that enhance children's independence in learning while also improving their academic performance and understanding of Islamic values. According to Vygotsky (1978), children learn most effectively when given opportunities to interact with their environment and gain direct experiences, which aligns with one of the core principles of the Montessori method.

According to a report from the Indonesian Ministry of Religious Affairs, many RA institutions in Indonesia still implement conventional, teacher-centered learning methods. These methods often limit children's active exploration and independent learning. Data from the Directorate of Islamic Education of the Ministry of Religious Affairs (2022) indicates that over 60% of RA institutions continue to use classical teaching methods, where teachers dominate the learning process, restricting children's ability to explore their potential independently. This has led to low levels of independence among children in completing tasks and fully understanding the material. Piaget (1952) asserted that children in the preoperational stage (ages 2–7) learn more effectively through direct experiences and active exploration rather than passive instruction, highlighting the need for a more interactive approach in RA education.

The Montessori method emerges as an alternative teaching strategy to enhance children's independence and learning outcomes in RA settings. Developed by Maria Montessori, this method is based on hands-on learning activities, the use of educational tools, and the freedom for children to explore their learning environment. Lillard (2005) found that the Montessori method significantly improves children's cognitive, social, and motor skills compared to conventional teaching methods. Several studies have demonstrated the effectiveness of the Montessori approach in fostering independence and cognitive skills in early childhood learners. For instance, a study by Astuti (2021) revealed that the Montessori method enhanced problem-solving skills and creativity among children aged 4–6 at RA Nurul Iman, with a 75% improvement compared to traditional methods.

At RA Al Hikmah, the current teaching approach remains dominated by lecture-based instruction and rote memorization, particularly in teaching Qur'anic recitation, daily prayers, and basic Islamic knowledge. Preliminary observations indicate that most children are still highly dependent on their teachers for completing tasks. Additionally, children's learning outcomes have not shown optimal development, with an average pre-intervention score of 65.4 based on formative evaluations conducted each semester. Sujiono (2013) emphasized that early childhood learners should be given the freedom to learn through exploratory approaches to help them deeply understand concepts and develop confidence in completing tasks independently.

Given this context, this study aims to implement the Montessori method at RA Al Hikmah to optimize children's independence in learning and improve their learning outcomes. The application of this method will focus on activities aligned with Islamic values, such as using Islamic-based learning materials, interactive educational games, and hands-on practices in religious activities. Thus, the Montessori approach will not only enhance academic aspects but also deepen children's understanding of Islamic teachings. This aligns with the views of Lillard & Else-Quest (2006), who stated that Montessori allows children to learn at their own pace and according to their interests, ultimately fostering critical thinking skills and self-confidence. This study will employ Classroom Action Research (CAR) using the Kemmis and McTaggart model, which consists of four stages: planning, implementation, observation, and reflection. The subjects will be 20 children aged 4–5 years at RA Al Hikmah. Data will be collected through observations, interviews with teachers and parents, and Montessori-based learning outcome assessments. The study will also refer to Bruner's (1966) Discovery Learning theory, which emphasizes that children understand concepts more effectively when they discover answers through active exploration.

The findings of this study are expected to contribute significantly to the development of teaching methods in RA institutions, particularly in fostering independence and improving learning outcomes through the Montessori method. Furthermore, this research aims to provide recommendations for Islamic educational institutions on implementing more effective teaching approaches tailored to early childhood learners' needs, ultimately creating a more active, independent, and Islamic value-based learning environment. According to research from The Montessori Foundation (2020), children educated through the Montessori method tend to achieve higher academic performance and greater independence than those taught using traditional methods.

Thus, the implementation of the Montessori method at RA Al Hikmah is expected to serve as an effective solution to overcoming the challenges of conventional learning while improving the quality of early childhood Islamic education in Indonesia. In line with the vision of Islamic education emphasizing *tarbiyah* (Islamic value-based education), the Montessori approach aligns well with this goal. According to Dr. Abdurrahman An-Nahlawi (2013), Islamic education should foster children's independence while remaining grounded in spiritual values, which can be facilitated through the Montessori approach, which emphasizes freedom and direct experiences.

METHODS

The data sources in this study consist of both primary and secondary data relevant to the research objectives. Primary data is obtained directly from the research subjects, namely children aged 4–5 years at RA Al Hikmah. This data includes observations on children's independence behaviors, interviews with teachers and parents regarding children's learning development, and test results designed in accordance with the RA education curriculum. The primary data is systematically collected to obtain accurate information on the impact of the Montessori method on the learning process. Meanwhile, secondary data is used to support and enrich the analysis in this study. One of the secondary data sources utilized is the *2024 Early Childhood Profile* published by the Central Bureau of Statistics (BPS). This report provides information on early childhood development in Indonesia, including aspects of education and well-being. Additionally, this study refers to the *2023/2024 Early Childhood Education (PAUD) Statistics* from the Data and Information Technology Center (Pusdatin) of the Ministry of Education and Culture, which contains data on the number of students, educators, and PAUD institutions in Indonesia. Furthermore, the *2024 PAUD Education Report* released by the Ministry of Education, Culture, Research, and Technology is also used as a reference to gain a deeper understanding of the quality of education services at the RA and PAUD levels. By combining a systematic data analysis method with credible data sources, this study aims to produce valid and reliable results in measuring the effectiveness of the Montessori method in enhancing children's independence and learning outcomes at RA Al Hikmah. The primary data collected directly will demonstrate tangible changes in children's learning, while the secondary data will provide a broader context regarding early childhood education development in Indonesia.

Data Analysis, this study employs descriptive quantitative and comparative data analysis methods to measure the effectiveness of the Montessori method in improving children's independence and learning outcomes at RA Al Hikmah. Descriptive quantitative analysis aims to illustrate the characteristics of the data obtained from observations, interviews, and children's learning outcome tests. According to Sugiyono (2024), descriptive quantitative analysis enables data presentation in the form of tables, graphs, or diagrams to facilitate understanding of data distribution and trends. Through this approach, the study can provide a comprehensive picture of changes in children's behavior and learning abilities after the intervention. Additionally, this study utilizes comparative analysis with a paired t-test technique to compare children's learning

outcomes before and after the implementation of the Montessori method. According to Ghazali (2024), the paired t-test is an effective statistical technique for evaluating differences in learning outcomes due to educational interventions. Through this analysis, the study can measure the extent to which the Montessori method contributes significantly to increasing children's independence and learning outcomes. The collected data will undergo validity testing to ensure that the improvements in learning outcomes are genuinely attributable to the intervention provided and not to other factors.

RESULTS

The data in this study reflect the condition of children before the Montessori method was implemented, the development observed during the first cycle, and the final results after the second cycle. Data were collected through learning outcome tests, observations of children's behavior during learning, and interviews with teachers and parents to gain broader insights into children's development.

Initial Condition (Before Implementing the Montessori Method)

Before the intervention, most children still exhibited a high dependence on teachers in completing learning tasks. Observations revealed that they required direct guidance from teachers to understand and complete learning activities. Additionally, the initial test results showed that the average children's comprehension score was only 65.4. Some teachers also noted that children tended to struggle with recognizing letters and numbers and had yet to optimally develop fine motor skills. This condition was suspected to be influenced by previous teaching methods, which were more instructional, lacked independent exploration, and provided minimal learning tools to stimulate children's development.

Development During Cycle 1

In the first cycle, the Montessori method was introduced by allowing children to choose learning activities that matched their interests. Teachers provided various Montessori learning tools, such as letter blocks, number puzzles, and sensory games designed to enhance hand-eye coordination. At the end of the first cycle, test results indicated an increase in the children's average scores to 75.8, marking an improvement of 10.4 points from the initial condition. Additionally, observations showed that 65% of children became more active in class, demonstrating increased confidence and independence in completing tasks. However, some children still struggled to fully engage in independent learning.

Development During Cycle 2

In the second cycle, the implementation of the Montessori method was reinforced by introducing more complex challenges. Teachers began teaching practical life skills, such as buttoning clothes, arranging dining utensils, and pouring water into glasses. Furthermore, Montessori learning tools were adjusted to match children's developmental levels, including exercises for sorting objects by color and size to enhance their logical thinking abilities. The final evaluation of the second cycle showed even more significant improvements. The average children's score increased to 85.7, while 85% of children actively participated in class, reflecting a 45% increase from the pre-intervention stage. Children also appeared more independent in completing tasks, more confident in interacting with peers, and better at managing their emotions.

According to the theory developed by Maria Montessori (1912), children learn more effectively when they are given the freedom to explore their environment independently. This approach enables them to develop cognitive and social skills more optimally than traditional learning methods. The findings of this study are also supported by research conducted by Lillard & Else-Quest (2006), which showed that the Montessori method enhances children's academic understanding and independence compared to conventional methods. Thus, the implementation of the Montessori method at RA Al Hikmah has been proven to significantly improve children's independence and learning outcomes. These findings indicate that the Montessori method is an effective alternative learning approach, particularly in early childhood education based on Islamic values, as practiced at RA Al Hikmah.

Data Verification

To ensure the accuracy of this study, verification was conducted through source, method, and theory triangulation. Source triangulation involved comparing direct observation results, interviews with teachers and parents, and children's learning evaluations before and after using the Montessori method. Meanwhile, method triangulation was carried out by combining various data collection techniques, such as documentation, observation, and interviews, to obtain more objective information. Furthermore, theory triangulation was conducted by comparing the results of this study with previous theoretical studies on the effectiveness of the Montessori method in improving early childhood learning outcomes. Through this triangulation approach, the validity and reliability of the data in this classroom action research were strengthened (Sugiyono, 2022).

The verification results indicate that the findings of this study align with direct observations and teachers' reports on children's independence development. Teachers reported that after implementing the Montessori method, children were more capable of completing tasks independently without excessive reliance on teacher instructions. Additionally, parents noted that their children appeared more motivated to learn at home after experiencing a more interactive and engaging learning environment at school. Thus, the results of this study reinforce the notion that the Montessori method contributes to enhancing children's motivation and independence in the learning process (Lillard & Else-Quest, 2022). From an academic achievement perspective, the analysis results show a significant improvement before and after the Montessori method was implemented. The average children's score increased from 65.4 before the intervention to 85.7 after the second cycle. Moreover, the percentage of children actively participating in class rose from 40% before the intervention to 85% after its implementation. This improvement demonstrates that the Montessori method positively impacts children's academic comprehension and engagement in learning activities. Therefore, this approach can be considered an effective alternative strategy for improving early childhood education quality, particularly within the Islamic education framework at RA Al Hikmah (Montessori, 2022).

To ensure data validity, the collected interview and observation results were further analyzed. Teachers provided positive feedback regarding changes in children's behavior during the learning process. Children appeared more confident in expressing their opinions, demonstrated initiative in completing tasks, and actively interacted with their peers. Additionally, their social skills improved significantly compared to before the method was implemented. Thus, the findings of this study support the theory that a learning environment that allows for exploration and social interaction enhances early childhood learning outcomes and cognitive abilities (Vygotsky, 1978).

Based on the data verification results, this study can be concluded to have a strong foundation and credible findings. Improvements in children's learning outcomes and independence were influenced not only by external factors but also by children's active engagement in independent exploration. With consistent data from various sources, methods, and relevant theories, the implementation of the Montessori method at RA Al Hikmah has been proven to be an effective approach for enhancing early childhood education quality. Therefore, this method can be applied as a sustainable learning model that helps develop children's potential from an early age (Sugiyono, 2024).

CONCLUSION

The Montessori method at RA Al Hikmah has had a positive impact on improving children's learning outcomes and independence. This improvement is evident from the comparison of test results before and after the method's implementation, where the children's average scores showed a significant increase. Additionally, the level of children's engagement in learning activities increased drastically, demonstrating that this method effectively enhances their participation in the learning process. The success of the Montessori method in improving children's learning outcomes is supported by its approach, which allows children the freedom to explore and learn according to their interests and abilities. With an activity-based learning system, children can grasp concepts more easily because they learn through direct experience. This makes the learning process more engaging and effective, motivating children to learn independently. Beyond academic improvements, this study also revealed positive behavioral changes in children during the learning process. Children who were previously passive and lacked confidence began to show initiative in completing tasks, express their opinions, and actively interact with their peers. These changes demonstrate that the Montessori method not only impacts cognitive aspects but also fosters social and emotional development in children. However, implementing the Montessori method at RA Al Hikmah does not come without challenges. One of the main obstacles is teachers' readiness to apply this method. Teachers unfamiliar with the Montessori approach require additional training to implement it effectively. Therefore, support from educational institutions in the form of training and mentoring for teachers is a crucial factor in the success of this method. In addition to teachers' roles, parental involvement is also a key factor in the success of the Montessori method. Children who receive learning support from their parents at home tend to adapt more easily to this method. Thus, collaboration between schools and parents is essential in creating a learning environment that supports children's development both at school and at home. Overall, the Montessori method has proven to be an effective approach in enhancing children's learning outcomes and independence at RA Al Hikmah. The improvements in academic performance, social skills development, and positive changes in learning motivation indicate that this method can serve as an alternative strategy in early childhood education. Therefore, the implementation of the Montessori method in early childhood education institutions should continue to be developed to provide greater benefits for children in nurturing their potential from an early age.

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