

## Optimizing Fine Motor Skills in 5-6 Year Old Children Through a Play-While-Learning Approach

Nurfaizah<sup>1</sup>, Litakun Karimah<sup>2</sup>, Nova Triana<sup>3</sup>, Susi Susanti<sup>4</sup>, Siti Muntamah<sup>5</sup>

<sup>12345</sup> Institut Al-Ma'arif Way Kanan, Baradatu, Indonesia

Correspondence: nurfaizah@almaarif.ac.id; litaazwar81@gmail.com; novatriana110@gmail.com; susisusanti20200905@gmail.com; muntamahst83@gmail.com

### Article history

Submitted: 2026/02/01; Revised: 2026/03/11; Accepted: 2026/04/18

### Abstract

This study was motivated by the low fine motor skills of children aged 5–6 years in kindergarten, such as difficulties in holding writing tools properly, cutting along patterns, and pasting objects neatly. Fine motor skills are an essential aspect of early childhood development, particularly related to hand-eye coordination and school readiness (Sujiono, 2017; Santrock, 2018). The purpose of this study was to optimize children's fine motor skills through a learning-through-play approach. This research used classroom action research based on the Kemmis and McTaggart model, which includes planning, action, observation, and reflection stages (Kemmis et al., 2014). The study was conducted in a kindergarten in Way Kanan Regency with 15 children from group B as research subjects. Data collection techniques were carried out through observation and documentation (Sugiyono, 2019). The results showed an improvement in children's fine motor skills in each cycle of learning. In the initial observation, only 33% of children reached the expected development criteria. After the implementation of actions in cycle I, the percentage increased to 60%, and further improved to 87% in cycle II. These results indicate that the learning-through-play approach can improve the fine motor skills of children aged 5–6 years, in line with previous studies highlighting the importance of play-based activities in child development (Whitebread et al., 2017). Therefore, this approach can be an effective learning strategy to stimulate fine motor development in kindergarten children.

### Keywords

fine motor skills, learning through play, early childhood



© 2026 by the authors. This is an open-access publication under the terms and conditions of the Creative Commons Attribution 4.0 International (CC BY SA) license, <https://creativecommons.org/licenses/by-sa/4.0/>.

## INTRODUCTION

Fine motor skills are a crucial developmental aspect in early childhood, particularly between the ages of 5 and 6, as they are related to a child's readiness to participate in learning activities at the next level of education. Fine motor skills involve the coordination of small muscles with integrated visual skills, such as writing, cutting, pasting, and stringing. Optimal fine motor development will support a child's independence and academic abilities from an

early age (Santrock, 2018; Sujiono, 2017). However, in kindergarten learning practices, children are still found to experience delays in fine motor development, particularly in hand-eye coordination.

Problems encountered in the field indicate that many children aged 5–6 years still cannot hold writing instruments correctly, cut according to patterns, and paste neatly. This condition is influenced by a lack of appropriate stimulation in learning activities provided by teachers. Learning that tends to be monotonous and provides children with few opportunities to explore is one of the factors that hinders the development of children's fine motor skills (Novitasari & Fauziddin, 2021). Furthermore, learning activities that do not fully integrate play elements also result in children being less interested and less active in participating in the learning process (Fadlillah, 2019). Previous research has shown that play-based approaches play a crucial role in improving various aspects of child development, including fine motor skills. Research by Anggraini and Sari (2020) demonstrated that collage activities can significantly improve children's fine motor skills. Another study by Kurniawati and Nurhayati (2022) also found that fine arts activities can stimulate children's fine motor coordination through manipulative activities. Furthermore, research by Hidayati and Rahmawati (2021) in *Ceria: Journal of Early Childhood Education Study Programs* demonstrated that stringing activities are effective in improving fine motor skills in early childhood. This finding is supported by Whitebread et al. (2017), who stated that play is the most effective learning medium for children because it provides meaningful, hands-on experiences.

Although various studies have proven that play activities can improve children's fine motor skills, in practice, a gap remains between theory and implementation. Teachers have not fully optimized the play-while-learning approach in learning activities, resulting in suboptimal stimulation of children's fine motor skills. Furthermore, the variety of activities provided is still limited and not systematically designed to develop children's fine motor skills sustainably (Lestari & Pratiwi, 2020). This gap highlights the need for more innovative and enjoyable learning strategies for children. Based on these issues, this study aims to optimize the fine motor skills of children aged 5–6 years through the implementation of a play-while-learning approach in kindergarten. This research is expected to contribute to the development of more effective learning strategies that are appropriate to the characteristics of early childhood, as well as serve as a reference for teachers in designing learning activities that can optimally stimulate children's fine motor development..

## **METHODS**

Based on the problem of low fine motor skills of children described in the introduction, this study uses a classroom action research (CAR) approach that aims to optimize the fine motor skills of children aged 5–6 years through the application of a play-while-learning approach in learning activities in kindergarten. Classroom action research was chosen because it allows researchers to make direct improvements to the learning process through actions that are designed systematically and reflectively. The classroom action research model used in this

study refers to the model proposed by Kemmis and McTaggart which includes four stages, namely planning, implementing actions, observation, and reflection which are carried out repeatedly in several cycles until the expected success indicators are achieved (Kemmis et al., 2014; Arikunto et al., 2018).

This research was conducted in a kindergarten in Way Kanan Regency, Lampung. The subjects were 15 children in Group B aged 5–6 years, consisting of 8 boys and 7 girls. The selection of research subjects was based on initial observations that indicated that children's fine motor skills had not yet developed optimally. The selection of subjects in classroom action research was carried out purposively based on the need for improvement in learning in the class (Sugiyono, 2019). Data collection techniques in this study were conducted through observation, documentation, and assessment of children's performance during the learning activities. Observations were used to determine the development of children's fine motor skills during the learning process using observation sheets compiled based on early childhood development indicators. Documentation was used to strengthen the research data in the form of photographs of learning activities and children's work during the play-while-learning activities. The use of various data collection techniques aimed to increase data validity through triangulation (Sugiyono, 2019; Arikunto et al., 2018).

The research procedure was conducted in two learning cycles. In the planning stage, the researcher developed a learning activity plan that implemented a play-while-learning approach as the main strategy to address the problem of low fine motor skills in children through various activities that can stimulate children's fine motor skills such as stringing, cutting, folding origami paper, sticking pictures, and arranging small objects. In the implementation stage, the teacher carried out learning activities according to the activity plan that had been prepared by actively involving children in play activities. During the activity, the researcher conducted observations to record the development of children's fine motor skills. The next stage was reflection, which was carried out to evaluate the results of the actions in each cycle so that improvements could be made in the next cycle according to the spiral principle in classroom action research (Kemmis et al., 2014). Data analysis in this study was conducted using quantitative and qualitative descriptive analysis techniques. Quantitative data were obtained from the results of the assessment of children's fine motor development which was calculated in the form of a percentage to determine the level of achievement of children's development. Meanwhile, qualitative data were obtained from the results of observations during the learning activities which were used to describe the process of improving children's fine motor skills through a play-while-learning approach. The indicator of success in this study was determined if at least 75% of children achieved the development criteria according to expectations in the observed fine motor ability indicators, in accordance with the criteria for completeness in classroom action research (Arikunto et al., 2018; Sugiyono, 2019).

## **FINDINGS AND DISCUSSION**

This study aims to determine the improvement of fine motor skills in children aged 5–6 years through the implementation of a play-while-learning approach in learning activities in kindergarten. Research data were obtained through observations of children's fine motor development during the implementation of the action in two learning cycles. Observations were made on several indicators of children's fine motor skills, including the ability to hold writing tools correctly, cut following simple patterns, stick neatly, and perform stringing and folding paper activities. The data obtained were then analyzed descriptively to determine the level of development of children's fine motor skills before the action, in cycle I, and in cycle II (Arikunto et al., 2018).

Initial observations indicated that children's fine motor skills were still low. Some children still had difficulty performing activities requiring hand-eye coordination, such as cutting according to patterns and pasting pictures neatly. This indicated that the stimulation provided to children was still not optimal, resulting in poor fine motor development as expected (Sujiono, 2017). After implementing learning activities through a play-while-learning approach in cycle I, an improvement in children's fine motor skills was observed. However, the results obtained did not reach the established success indicators, so the action was continued in cycle II by making several improvements to the learning activities provided to children (Kemmis et al., 2014). The development of children's fine motor skills before the action, in cycle I, and in cycle II can be seen in the following table.

**Table 1** Improving Fine Motor Skills in Children Aged 5–6 Years

Research Stage	Number of Children Developing as Expected	Percentage (%)
Initial Observations	5 children	33%
Cycle I	9 children	60%
Cycle II	13 children	87%

*Notes: Data processed from observations of children's fine motor development during learning activities.*

Based on the table, it can be seen that there was an increase in children's fine motor skills at each stage of the study. In the initial observation stage, only 33% of children showed fine motor development according to the established indicators. After implementing the play-while-learning approach in cycle I, the percentage of children achieving the expected development criteria increased to 60%. This increase indicates that the play activities

provided in learning began to have a positive impact on the development of children's fine motor skills. In cycle II, after improvements were made to learning activities by providing a variety of play activities such as stringing, folding origami paper, cutting simple patterns, and pasting activities, the percentage of children achieving the success indicators increased to 87%. These results indicate that the research success indicators have been achieved because more than 75% of children have achieved the expected development category, in accordance with the completeness criteria in classroom action research (Arikunto et al., 2018; Sugiyono, 2019).

Improving children's fine motor skills through a play-while-learning approach demonstrates that play provides opportunities for children to develop manipulative skills more actively and enjoyably. Through play, children can naturally practice hand-eye coordination because they are directly involved in various activities that use the small muscles in their hands. The results of this study align with research conducted by Pratiwi and Rahmawati (2021), which stated that creative play activities can improve fine motor coordination in early childhood through manipulative activities such as stringing and folding. Furthermore, research conducted by Whitebread et al. (2017) also shows that play activities play a crucial role in supporting children's motor, cognitive, and social development because children learn through meaningful, hands-on experiences.

The findings of this study also reinforce the theory that early childhood learning should be designed in the form of fun play activities so that children can learn actively according to their developmental characteristics. A play-while-learning approach allows children to explore various activities that optimally stimulate fine motor development. This aligns with Fadlillah's (2019) opinion, which states that play-based learning is an effective strategy in early childhood education because it can increase children's engagement and motivation to learn. Therefore, kindergarten teachers need to develop creative and varied learning activities so that children have wider opportunities to develop their fine motor skills through various meaningful play activities..

## **CONCLUSION**

Based on the results of the research that has been conducted, it can be concluded that the application of the play while learning approach can optimize the fine motor skills of children aged 5-6 years in kindergarten. This is demonstrated through the improvement of children's fine motor development in each learning cycle conducted in classroom action research. In the initial observation stage, children's fine motor skills were still in the low

category because most children still had difficulty in carrying out activities that require coordination between the eyes and hands, such as holding writing tools correctly, cutting following simple patterns, and sticking pictures neatly. After the implementation of learning activities through the play while learning approach in cycle I, children's fine motor skills began to show improvement, and in cycle II there was a significant increase until they reached the predetermined success indicators. These results indicate that the actions carried out in classroom action research are effective in improving the learning process gradually. The findings of this study indicate that play activities designed in a targeted manner within the learning process can provide a fun learning experience while optimally stimulating children's fine motor development. The play-while-learning approach provides children with the opportunity to develop coordination of small hand muscles through manipulative and exploratory activities in accordance with the developmental characteristics of early childhood. This is in line with the theory that states that play is the primary learning tool for early childhood because through play, children can develop various aspects of development in an integrated manner.

## **REFERENCES**

- Anggraini, D., & Sari, M. (2020). Improving children's fine motor skills through collage activities in kindergarten. *Journal of Early Childhood Education*, 5(2), 120–128.
- Arikunto, S., Suhardjono, & Supardi. (2018). *Classroom action research*. Jakarta: Bumi Aksara.
- Fadlillah, M. (2019). *Play and early childhood games*. Jakarta: Kencana.
- Hidayati, N., & Rahmawati, D. (2021). Improving children's fine motor skills through stringing activities. *Ceria: Journal of Early Childhood Education Study Program*, 10(1), 45–52.
- Kemmis, S., McTaggart, R., & Nixon, R. (2014). *The action research planner: Doing critical participatory action research*. Singapore: Springer.
- Kurniawati, E., & Nurhayati, S. (2022). The influence of fine arts activities on the development of fine motor skills in early childhood. *Journal of Child Education*, 8(1), 55–63.
- Lestari, R., & Pratiwi, A. (2020). Implementation of play-based learning in improving early childhood development. *Integrated PAUD Journal*, 4(2), 90–98.
- Novitasari, R., & Fauziddin, M. (2021). Stimulating fine motor development in early childhood through play activities. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 5(2), 1345–1356.
- Pratiwi, A., & Rahmawati, D. (2021). The influence of creative play on fine motor development in early childhood. *Journal of Early Childhood Education*, 6(1), 75–82.
- Santrock, J. W. (2018). *Life-span development (17th ed.)*. New York: McGraw-Hill.
- Sugiyono. (2019). *Educational research methods*. Bandung: Alfabeta.
- Sujiono, YN (2017). *Basic concepts of early childhood education*. Jakarta: Indeks.
- Whitebread, D., Basilio, M., Kuvalja, M., & Verma, M. (2017). The role of play in children's development: A review of the evidence. Cambridge: University of Cambridge. *Early Childhood*, 13(1), 20-33..