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# Implementation of Play Methods in Early Childhood Cognitive Development

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**Abstract:**
This study aims to analyze the implementation of play methods in early childhood cognitive development in the Pembina State Kindergarten, East Jakarta. The research method used is a descriptive qualitative method with data collection techniques through observation, interviews, and documentation. The subjects of the study were 3 teachers and 30 students of group B (age 5-6 years). The results of the study showed that: (1) The implementation of the play method was carried out through sensorimotor play, role play, development play, and playing with rules; (2) Children's cognitive development is significantly improved in aspects of problem solving, symbolic thinking, memory, and concentration; (3) Supporting factors include adequate infrastructure, teacher competence, and parental support; (4) Inhibiting factors include time constraints and differences in children's characteristics. The conclusion of this study is that the play method has been proven to be effective in developing early childhood cognition when applied with careful planning and adjusted to the characteristics of child development.

## INTRODUCTION

Early childhood education (PAUD) is an important foundation in character formation and development of children's potential. Early childhood, especially the age range of 0-6 years, is a golden age period in which very rapid brain development occurs reaching 80% of the brain capacity of adults (Santrock, 2021). During this period, the right stimulation will have a long-term impact on the child's development in various aspects, including cognitive aspects.

Cognitive development is one of the important aspects that need to be considered in early childhood education. Piaget (in Suyadi, 2020) states that cognitive development is the process by which children learn and develop the ability to think, remember, solve problems, and make decisions. At an early age, children are in the preoperational stage (2-7 years) which is characterized by the ability to think symbolically, egocentric, and not able to think logically systematically.

The play method is seen as the approach that best suits the characteristics of early childhood development. This is in line with the concept of "learning through play" which emphasizes that play is not just entertainment, but an effective learning vehicle for children. Vygotsky (in Morrison, 2022) explains that play has an important role in children's cognitive development because through play, children can explore the environment, interact with peers, and develop abstract thinking skills. Research by Zosh et al. (2023) in the LEGO Foundation white paper confirms that learning through play has been shown to improve various aspects of children's development including cognitive, social-emotional, and creativity.

Based on initial observations made at the Pembina State Kindergarten in East Jakarta, it was found that teachers have applied various types of games in daily learning. However, there has been no in-depth evaluation of the effectiveness of the implementation of the play method on children's cognitive development. Therefore, this study is important to provide an empirical picture of the implementation of play methods and their impact on early childhood cognitive development.

The objectives of this study are: (1) to describe the implementation of the play method in learning in Kindergarten Negeri Pembina; (2) analyzing children's cognitive development through the application of play methods; (3) identify supporting and inhibiting factors in the implementation of playing methods.

## RESEARCH METHODS

This study uses a qualitative approach with a descriptive type of research. Descriptive qualitative research aims to systematically and accurately describe the facts related to the implementation of play methods in early childhood cognitive development. The research was carried out in the even semester of the 2024/2025 school year, for 3 months (January-March 2025) at the East Jakarta City Pembina State Kindergarten, Jalan Raya Pondok Gede No. 45, East Jakarta.

The subjects of this study consisted of 3 teachers of group B and 30 students of group B (age 5-6 years) who were selected by purposive sampling with the criteria: have studied for at least 6 months at the school and have an attendance rate of at least 80%. The data collection techniques used include: (1) Participatory observation to observe the learning process using the play method; (2) In-depth interviews with teachers and principals regarding the planning, implementation, and evaluation of learning; (3) Documentation in the form of photos of activities, RPPH, children's work, and assessment of child development.

Data analysis uses the Miles and Huberman model which includes three stages: (1) Data reduction, which is summarizing and selecting the main data; (2) Presentation of data in the form of narratives, tables, and charts; (3) Conclusion and verification. The validity test of the data was carried out by source triangulation and technical triangulation.

## RESULTS AND DISCUSSION

### Implementation of Play Methods in Learning

The results of the study show that the implementation of the play method at Kindergarten Negeri Pembina is carried out in a structured and integrated manner in daily learning. Based on the observation and analysis of the RPPH document, teachers use four main types of games:

First, sensorimotor play involves physical activity and exploration of the five senses. Examples are playing sand, water, playdough, and finger painting. Through this game, children learn to recognize textures, shapes, and develop fine motor coordination that supports cognitive abilities such as classification and pattern recognition.

Second, role play provides an opportunity for children to imagine and think symbolically. Children play as doctors, teachers, chefs, or other professions by using simple properties. The game is very effective in developing abstract thinking, language, and social problem-solving skills. These findings are in line with the research of Amalina and Wulandari (2023) which shows that role-playing methods have a significant influence on the cognitive development of children aged 5-6 years, especially in the aspects of symbolic thinking and problem solving. Lillard et al. (2022) in their comprehensive review also confirmed that pretend play has a strong positive impact on various aspects of children's cognitive development.

Third, play construction play using blocks, legos, and puzzles. The game trains spatial skills, planning, and problem-solving. Children learn basic mathematical concepts such as size, shape, and balance in a concrete way. Handayani and Subakti (2021) in their research found that the constructive play method has a significant influence on children's cognitive development, especially in the aspects of problem-solving and spatial ability with a relatively high effect size value.

Fourth, play with rules such as traditional games (congklak, snake ladder) and simple modern games. This game teaches children to understand rules, think strategically, and develop executive brain functions such as self-control and working memory.

The implementation of the four types of games is carried out on a scheduled basis with a balanced proportion of time. Teachers prepare RPPH with a specific theme and integrate different types of games according to the cognitive learning goals to be achieved. Pyle and Danniels (2021) emphasize the importance of the continuum of play-based learning where the teacher plays the role of a facilitator who understands when to provide freedom of play and when to provide scaffolding to maximize learning. Dewi and Khotimah (2022) also found that the implementation of structured and systematic play-based learning provides more optimal results in improving children's cognitive abilities compared to playing without careful planning.

### Children's Cognitive Development Through Play Methods

The results of observation and analysis of child developmental assessments showed significant improvements in various cognitive aspects. The 3-month development assessment data can be seen in the following table:

Table 1. Cognitive Development of Group B Children

| Cognitive Aspects | BB (%) | MB (%) | BSH (%) | BSB (%) |
|---|---|---|---|---|
| Troubleshooting | 3,3 | 13,3 | 46,7 | 36,7 |
| Symbolic Thinking | 6,7 | 16,7 | 43,3 | 33,3 |
| Memory and Concentration | 10,0 | 20,0 | 40,0 | 30,0 |
| Classification and Serialization | 3,3 | 10,0 | 50,0 | 36,7 |

*Description: BB = Not Developed, MB = Starting to Develop, BSH = Developing as Expected, BSB = Developing Very Well*

Based on the table above, it can be seen that the majority of children (more than 80%) are in the categories of Developing Expectation (BSH) and Developing Very Good (BSB) in all observed cognitive aspects. This shows that the play method is effective in developing early childhood cognitive abilities. These findings are supported by a meta-analysis study by Rakhmawati and Mustaji (2022) who analyzed 25 studies on play-based learning and found an effect size of 0.78 which showed high effectiveness on early childhood cognitive skills.

The problem-solving aspect showed excellent results with 83.4% of children in the BSH and BSB categories. Through games such as puzzles and blocks, children learn trial and error strategies, planning, and evaluating solutions. For example, when playing puzzles, children must analyze the shape and color of the puzzle pieces, plan the right positions, and evaluate whether their choices are correct.

Symbolic thinking skills develop through role play and constructive play. As many as 76.6% of children reached the BSH and BSB categories. Children are able to use objects to represent other objects (for example, a block as a phone), understand that images represent real objects, and begin to understand the concept of numbers and letters as symbols.

Children's memory and concentration also increased significantly, with 70% of children in the BSH and BSB categories. Games with rules such as card memory and cone train children to remember positions, sequences, and game rules. The duration of children's concentration in play also increased from an average of 10 minutes at the beginning of the semester to 20-25 minutes at the end of observation.

**Supporting and Inhibiting Factors**

Some of the supporting factors identified in this study include: First, adequate facilities and infrastructure. Kindergarten Negeri Pembina has a spacious classroom, outdoor play area, and a varied collection of educational game tools. Each class is equipped with play centers such as block centers, role-play centers, and art centers that facilitate different types of games.

Second, good teacher competence. The three teachers who are the subject of the study have a S1 PAUD qualification and at least 5 years of teaching experience. They understand the stage of child development and are able to design games that suit the child's characteristics. Teachers also routinely participate in trainings and workshops related to early childhood learning methods. Bergen and Davis (2021) in their handbook emphasize that teachers' competence in facilitating play is a key factor in the success of play-based learning. Nurjanah and Hapidin (2023) also found that the effectiveness of the play method is highly dependent on the teacher's ability to design, facilitate, and evaluate play activities.

Third, positive parental support. Based on interviews, most parents understand the importance of play for a child's development and support school programs by providing playtime at home and not putting excessive academic pressure. Fisher et al. (2020) in their study found that parents' perception of the importance of play greatly affects the quality of a child's play experience at home, which in turn contributes to their cognitive development.

The inhibiting factors found include: First, time constraints. With an effective learning duration of 3-4 hours per day and various activities that must be carried out (circle time, core activities, eating, rest), teachers feel that the time to play freely is still not optimal. Ideally, children should have at least 60 minutes of free play time per day.

Second, significant differences in children's characteristics. In one classroom there are children with various levels of cognitive development, from very fast to those who require special guidance. This challenges teachers to design games that can accommodate all levels of children's abilities.

## CONCLUSIONS AND SUGGESTIONS

Based on the results of the research and discussion, it can be concluded that the implementation of the play method at the East Jakarta City Coach State Kindergarten has been carried out in a structured manner through four types of games: sensorimotor play, role play, development play, and playing with rules. The play method has been proven to be effective in developing early childhood cognition with more than 80% of children achieving the categories of Developing as Expected and Developing Very Good in the aspects of problem solving, symbolic thinking, memory and concentration, as well as classification and serialization.

The successful implementation of the play method is supported by adequate infrastructure, good teacher competence, and parental support. However, there are several challenges such as limited time and differences in children's characteristics that need attention to improve learning effectiveness. Based on the conclusions of the study, the researcher gave the following suggestions: For teachers, it is recommended to continue to increase creativity in designing games that are more varied and adapted to the child's individual development. Teachers also need to allocate more free play time so that children have optimal exploration opportunities. Documentation of child development through a portfolio also needs to be done consistently to monitor the progress of each child.

For schools, it is recommended to continue to complete and update educational game tools, organize regular training for teachers on play-based learning methods, and

increase cooperation with parents through parenting classes so that the understanding of the importance of play can be synchronized between school and home.

For future researchers, it is recommended to conduct experimental studies with control groups to measure the effectiveness of play methods more objectively, conduct longitudinal studies to see the long-term impact of play methods on children's development, or explore other developmental aspects such as social-emotional and language through play methods.

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