

The Role of Teachers in the Development of Learning Media for Block Play in Early Childhood Cognitive Development

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Abstract

The role of a teacher is very important in providing enjoyable and interactive learning methods, one of which is block play, to achieve cognitive development in preschool-aged children. This research uses the library research method or literature study approach. In this research, references include books, previous research journals, articles in the form of magazines or newspapers, and other scientific writings. This research provides a description of the role of teachers in the development of learning methods such as block play in the cognitive development of preschool children. Semi-structured interviews and structured observations of teachers who teach preschool children. The contributions of the research include a) interactive learning activities that incorporate games during learning, b) active participation of teachers in implementing interactive learning methods can enhance cognitive development, c) the establishment of cooperation with early childhood education providers and kindergartens, d) creativity that can be created and developed to improve cognitive abilities. The role of teachers in the development of interactive learning methods through block play becomes the focus of discussion to enhance cognitive abilities, so that preschool children have good memory, problem-solving skills, intellectual capacity, logic, and decision-making, especially at the later stages of development when children enter elementary school.

Keywords:

Teacher's Role, Learning Methods, Block Play, Cognitive Development; Age Preschool Children.

Introduction

The role of preschool teachers is characterized by the unique traits possessed by young children, both in relation to developmental tasks and developmental dimensions, which are linked to cognitive, socio-emotional, moral, religious, disciplinary, language, and motor or physical development (Rohma & Hikmah, 2023). Cognitive development is the process by which individuals can enhance their ability to use their knowledge. (Hidayana., izzah & Kiromi, 2024). It is further explained that early childhood is expected to adequately meet cognitive development aspects, as the anticipated competency is for children to develop thinking skills to process the knowledge they acquire from learning, as well as to discover various alternative problem-solving methods. This helps children develop mathematical logic skills and knowledge of space and time, as well as the ability to choose, classify, and prepare for the development of careful thinking skills (Rohma & Hikmah, 2023). The ability to think of someone in connecting and considering knowledge about an event or occurrence in order to gain new insights (Gandana, Pranata, & Danti, 2017). The ability to think about someone in managing thoughts to gain new knowledge that will be useful for life in the future.

Interactive learning media in early childhood education schools has proven to be effective in increasing children's engagement in learning. Learning is an effort to change behavior, whether related to the addition of knowledge, skills, attitudes, understanding, self-esteem, interests, character, or self-adjustment (Herawati, 2020). Remember that every child develops at a different pace, and this stage of development can vary. In addition, the experiences and stimuli provided by the surrounding environment can influence the development of thinking skills in childhood (Reswari, 2022).

Learning with block media is an interesting and relevant choice. Previous studies have shown that the use of visually and tactilely engaging media can accelerate children's understanding of concepts and colors (Hidayana., Izzah & Kiromi, 2024). Early childhood development is a very important period in shaping the foundation of their intelligence. One aspect of development that has a significant impact in early childhood is cognitive development, which includes a child's ability to think, understand, remember, and solve problems. In an effort to support that development, appropriate learning media play a very important role. One of the media that has proven effective in stimulating cognitive development is block play. This research aims to explore the role of teachers in developing learning media through block play designed to support the cognitive development of early childhood. The main focus of this study is to identify how teachers can utilize block play as a means to stimulate logical thinking, pattern recognition, problem-solving, and the development of critical thinking skills in children. Why were block games chosen as the learning method in this research? Because block play provides many opportunities for children to directly explore basic mathematical and logical concepts, such as shape, size, weight, and structure. Through the activity of stacking and building with blocks, children are trained to recognize the relationships between separate parts and assemble them into a cohesive whole. This activity also involves fine motor skills and hand-eye coordination, which are important in the physical and cognitive development of children.

Among various methods and other learning media, block play has the advantage of providing direct experiences that involve concrete interaction with objects. By using block play, children are not only engaged in play but also in activities that stimulate their cognition, such as planning, observation, conversation, and experimentation to solve the problems they encounter. Therefore, block play was chosen as an effective method in this research to develop children's cognition. Unlike social and emotional development, which often focuses on social interactions and emotional management, cognitive development requires more structured and directed stimulation. Although block play can also influence social and emotional development, such as in terms of cooperation and sharing, the main focus of this research is on how block play can stimulate cognitive development. Thus, the role of teachers in providing appropriate learning media is very important, as teachers can offer guidance, set challenges, and help children solve problems they encounter while playing with blocks. Thus, this research will examine how teachers can optimize the use of block play to stimulate the cognitive abilities of early childhood children, as well as the important role of teachers in providing structured and varied learning experiences.

The learning process to develop children's cognitive abilities should be carried out through enjoyable play activities. A teacher must have high creativity in planning and implementing classroom learning, as well as being skilled in selecting the necessary and

appropriate games as learning tools (Aryani, 2019). The research produced shows that block play can enhance aspects of children's cognitive development, especially in playgroups. The teachers assess the children's development in block play through the creations made by the children, as well as through their answers and tasks given to them to construct a building from blocks (Herlina, Aslan & Yuliantini, 2023). Thus, the research question is how the role of teachers contributes to the development of block play learning media in the cognitive development of preschool children?

Aspects of cognitive development include problem-solving, logical thinking, and symbolic thinking. More focused on the aspect of cognitive development in the field of symbolic thinking, specifically the ability to recognize numerical symbols. The ability to recognize numerical symbols is a form of children's ability to identify and understand the symbols that represent the quantity of objects (Syahrida, Wahyuningsih, & Pudyaningtyas, 2017).

According to Piaget (1951), children do not just passively receive information, but they actively construct their knowledge through interaction with the environment. Piaget proposed that cognitive development occurs in four distinct stages, in the Preoperational Stage (2-7 years) children begin to use symbols and language to represent their objects and experiences. They become very imaginative and start role-playing. However, they still tend to be egocentric, meaning they have difficulty seeing the world from others' perspectives. In early childhood (2-7 years), which is the focus of this research, children are in the preoperational stage according to Piaget. At this stage, children begin to develop symbolic and imaginative thinking abilities, and block play is a very suitable medium to stimulate their cognitive development through exploration and direct manipulation of objects. Vygotsky (1978) focused on the social and cultural roles in cognitive development. His main concept is the Zone of Proximal Development (ZPD), which explains that children learn more effectively when they are given challenges that are slightly more difficult than their current abilities, but still within reach with the help of adults or peers. Vygotsky emphasized the importance of social interaction in learning, where teachers and peers play a crucial role in helping children reach higher levels of development. The role of the teacher is very important in providing scaffolding or support to help children complete more difficult tasks. For example, the teacher can provide new instructions or challenges, such as "What if we build something taller?" which encourages the children to think further and solve problems collaboratively. Bruner (1961) developed the concept of discovery learning, where children learn by discovering principles and ideas through direct experience and manipulation of objects. Arguing that children learn better if they are actively involved in the learning process, by seeking and exploring solutions rather than just listening to instructions from the teacher. This allows children to learn through direct experience and experimentation. When children interact with blocks, they try various ways to build structures and test their own ideas, which supports their understanding of basic principles such as shape, size, and balance.

The steps to play with blocks are not difficult, as one activity already encompasses both. The steps of the game are as follows: 1) explaining the shape and color of the blocks 2) asking about the quantity and size of the blocks as an interlude. 3) asking about objects that have a shape similar to the blocks, to stimulate the child's imagination with real objects. Then the teacher showed the different types of blocks that had been arranged in various models and

games.4) It also explains the similarities with geometric shapes. After that, the teacher asks about the enjoyment of the block shapes that have been arranged into a toy 5) explaining how to use it and 6) asking the child to play with blocks of geometric shapes. (Herlina, Aslan & Yuliantini, 2023).

The process of developing children's cognitive abilities requires teachers to skillfully utilize media or learning resources so that children can more easily explore their cognitive skills. One of the media that enhances children's cognition is block play, where the concept of learning with blocks is through play, allowing children the freedom to develop their imagination. Block media is a piece of wood that comes in various shapes (Dimiyati et al., 2019), generally in the form of a rectangle or cube. Its development, as a play tool, is not only made from wood; materials used include cardboard, foam, rubber, and so on. Children enjoy stacking blocks or combining them to satisfy their imagination of a shape. According to (Majid, 2012), the word instruction is heavily influenced by the cognitive-holistic psychology movement, which positions students as the source of activities. In addition, the term instruction is influenced by technological advancements that are predicted to facilitate students in learning everything, and the role of teachers is shifting to that of facilitators in the learning activities. This aligns with Gagne's opinion that learning is a set of events conducted by the teacher to manage the available facilities and learning resources so that students can utilize them in their study of a subject.

Methodology of Research

This research uses a qualitative approach by collecting data through interviews, observations, and documentation. According to Moleong (2008), qualitative research is a research procedure that produces descriptive data in the form of written or spoken words from individuals and observed behaviors. The words that are written or spoken by people and the behaviors that are observed. Meanwhile, descriptive research is a form of research that aims to describe or explain existing phenomena. According to Sugiyono (2010), qualitative methods are research methods based on post-positivist philosophy, used to study natural object conditions where the researcher becomes the key instrument. Data source sampling is conducted purposively and through snowball sampling, data collection techniques utilize triangulation or a combination of the following data collection techniques with triangulation or a blend. Data analysis is inductive or qualitative in nature, and the results of qualitative research emphasize meaning rather than generalization.

The type of research used is library research that is analytical in nature, which involves the collection of data and information through analysis, specifically gathering data and information using materials from literature. Nazir (Rohma & Hikmah, 2023) adds that a literature review is an important step after a researcher establishes a topic. Researchers gather as much information as possible from relevant literature. Aiming to objectively describe the role of teachers in the development of learning media for block play in the cognitive development of preschool children. The data sources for this research are teachers and early childhood education, books, archives, personal documents, and official documents related to the role of teachers in the Aisyiyah kindergarten/early childhood education school. Early Childhood Education Teacher (PAUD): A teacher who actively teaches and is directly involved in the development of learning media for block play. Early Childhood (as the observation object): Children who use block play media can be observed to see the direct impact on their cognitive development. This block play activity was conducted over 5 days, with one session

each day. It involved all 8 children, 7 of whom were quite capable of playing with the blocks and even understood the names and shapes of the blocks. However, there was one child who stood out as unable to follow instructions, slow to respond, less attentive during the learning process, lacking concentration, and still needing assistance to complete tasks. The subjects participating in the block play activity are children aged 4-5 years from the Aisyiyah Kindergarten, with the age criteria reflecting the cognitive development (pre-operational) stage. At this stage, children will develop their abilities in memory and imagination.

The data collection procedure is carried out after determining the information, location, and situation that are expected to provide insights into the role of teachers in developing cognitive abilities through the block media learning model. The techniques used in this data collection include observation, in-depth interviews, and the gathering of various documents related to the research.

Discussion

The teacher provides a lesson on block play by placing all the blocks in a container and then selecting which block matches the instructions. Before carrying out the program, students learn the names of various types of rectangular prisms and the shapes of the prisms that correspond to their names. Giving the children 30 minutes of block play on the first day, and the author reduces it by 5 minutes each day during the block play activities to observe the development. In the first meeting, I still didn't understand what the shape of the rectangular prism was that had been mentioned. Often taking blocks randomly, repeatedly asking for help and guidance on which blocks match what has been mentioned, shifting their focus to other toys in the room. In the second meeting, there was learning to choose the blocks that matched what was mentioned, and assistance was still often requested. There was progress compared to the previous time in selecting the blocks. In the third meeting, there was a noticeable enthusiasm in choosing the mentioned blocks, and they played with the blocks quickly, showing improvement from the previous day. In the fourth meeting, there was a very good increase; they started to choose the blocks that matched what was mentioned more quickly than before and were seen combining the blocks into a structure. In the fifth meeting, there was an improvement in terms of speed, as they were quicker than before, did not ask for help, understood the shapes of the blocks that had been mentioned, and showed enthusiasm in selecting and organizing the blocks themselves, placing the container with the blocks back in the previous location.

Learning evaluation involves three interconnected aspects: evaluation, measurement, and testing. It is a systematic process of collecting, analyzing, and interpreting data information to determine the extent to which students have achieved learning objectives. Measurement is a process that produces a representation in the form of numbers regarding the levels of specific characteristics possessed by an individual.

According to Chambel, group block play is an activity that involves large muscle movements, where this block media can enhance the development of hand-eye coordination, train fine motor skills, and foster problem-solving abilities. This group block media allows children the freedom to use their imagination, leading to the creation of new things. Block media in groups is one of the constructive play tools that is beneficial for children. A block consists of various shapes. There are triangles, squares, rectangles, and circles in various attractive colors. Blocks can be played with individually by a child, or in groups with their friends.

Block play is one of the simple yet highly effective activities in supporting a child's cognitive development. This activity involves children designing, building, and manipulating three-dimensional objects, which trains various mental skills important for their cognitive development. Research has shown that block play provides various benefits in terms of brain

stimulation, the development of problem-solving skills, and the understanding of basic mathematical concepts. The role of the teacher, in this case, is very important in creating an environment that supports this play, as well as providing the necessary guidance and support so that children can develop their cognitive potential to the fullest.

Conclusion

The research results show very effective development; subjects who played with blocks for 5 consecutive days were able to remember the names, shapes, and appearances of the blocks correctly. They could combine the blocks into a proper shape that matched their creations. Playing with blocks made it easier to remember the lessons learned and increased their enthusiasm for solving learning problems, such as counting numbers and recalling color names in English that they had not memorized before. Overall, after being given the activity of playing with blocks, the children are more active in learning, and their memory is also better than before the block play activity. The child is better at communicating with classmates and is capable of solving problems.

It can be concluded that the role of teachers is essential in developing learning media using block play to enhance the cognitive development of preschool-aged children. This approach aligns with the desired outcomes for children at Aisyyah Palembang Kindergarten, where improvements in cognitive development can also be achieved through block play. Block play is often used to train children in aspects of cognitive development (Hidayana, Izzah, and Kiromi, 2024).

Although block play can provide significant benefits in a child's cognitive development, the role of the teacher in this activity is very important. The teacher is not only an observer but also a facilitator who can help children optimize their play experience. Some ways in which teachers can support block play include. Teachers play a role in creating a safe and supportive environment for block play.

This includes providing various types of blocks with different sizes, colors, and shapes, as well as giving children enough space to freely experiment. According to research by Pyle & Bigelow (2015), an environment rich in resources and open to experimentation enhances children's motivation and engagement in learning activities. As a facilitator, teachers must also be able to provide appropriate instructions to support children's cognitive development. For example, the teacher can ask open-ended questions that trigger the child's critical thinking, such as "How can you make this structure stronger?" or "What happens if you add a block here?" With questions like these, teachers encourage children to think more deeply and try various solutions. Research by Perry et al. (2017) shows that this approach can enhance children's problem-solving abilities and critical thinking skills. The role of the teacher is also very important in monitoring the child's development during play. Teachers can observe how children solve problems, interact with peers, and overcome the challenges they face. Based on research by Berk (2009), teachers who actively provide positive feedback and guide children through the play process will enhance children's self-confidence and cognitive skills. This feedback helps children learn from their mistakes and improve the strategies used. Teachers also need to adjust the challenges given according to the child's ability level. A study by Hughes & Dunn (2002) shows that when children are given challenges that match their abilities, they tend to be more engaged and motivated to continue learning. Teachers can provide additional instructions or challenges when children begin to master one level of the game, so their development remains stimulated. Block play has many benefits for children's cognitive development, including the development of spatial abilities, logic, creativity, and basic mathematical understanding. However, the maximum benefits of block play can only be

achieved with the active role of teachers who can provide a supportive environment, give appropriate instructions, and offer constructive feedback.

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