ETNOPEDAGOGI: Jurnal Pendidikan dan Kebudayaan
Volume 1 (1) January 2024
The article is published with Open Access at: https://journal.mgedukasia.or.id/index.php/etnopedagogi

Improving Cognitive Abilities through Puzzle Playing Activities at RA Khadijah Aisyah

Wijiati ✉, RA Al Barokah, Indonesia
Wiji Astutik, RA Muslimat NU 11, Indonesia
Wiji Hariyanti, UIN Syekh Ali Ahmad Addary Padang Sidimpuan, Indonesia
Wike Dwi Palupi, UIN Syekh Ali Ahmad Addary Padang Sidimpuan, Indonesia
Wike Norvila Astutik, UIN Syekh Ali Ahmad Addary Padang Sidimpuan, Indonesia

✉ *wijiati7549@gmail.com*

Abstract: The purpose of this study was to improve cognitive abilities through puzzle playing activities in group B at RA Kahdijah Aisyah, Jakarta, 2021. The research was carried out from 1-12 November 2021 in the 2021/2022 academic year in semester I. The subjects of the study were 8 children in group B consisting of 5 boys and 3 girls. The study was carried out for 2 cycles with the following stages: implementing, doing, acting, observing and reflecting, during the activities the researcher took the theme of fruit plants and insects. The results of the study showed the following advantages: media or materials can use materials from used goods, used children's magazines. Providing stimulus in problem solving, training eye and hand coordination, introducing the concept of shape, size and color, training children's reasoning. While the weakness is the lack of attention to the level of difficulty in assembling puzzles which must be adjusted to the child's age group. From observations made by researchers at the end of cycle II, it was found that there was an increase in children's cognitive abilities in playing puzzles. This can be seen from the percentage at the beginning of the cycle experiencing an increase, in the category not yet developing from 25% to 0% there are no more children in that category, the category starting to develop experienced an increase from 62.5% changing to 25% in this category children have experienced a reduction and changed to the category developing according to expectations from 12.5% to 37.5% experiencing an increase, in the category developing very well which initially there were no children in this category in cycle II there was an increase from 0% to 37.5%. The conclusion of this study is that through puzzle playing activities can improve the cognitive abilities of children in group B at RA Khadijah Aisyah.

Keywords: Cognitive, Play, Puzzle

Received November 15, 2023; **Accepted** December 21, 2023; **Published** January 31, 2024

INTRODUCTION

Based on the results of the classroom action research that has been carried out through two research cycles, namely cycle I and cycle II as well as the results of the discussion and analysis that have been carried out, Early childhood is a unique individual, where children can learn a lot through themselves, because of this, children will really need help from others. Teachers as facilitators will be very helpful in developing cognitive abilities in children, because of that, there needs to be activities to play that are constructive in nature, which can organize information in their brains in patterns that are predicted from an early age. Early age is also a sensitive age where children will gain

experience from the environment, including stimulation given by adults, therefore efforts are needed to facilitate children's growth and development in the form of educational and learning activities according to the child's age, needs and interests. Law No. 20 of 2003 concerning the national education system, article 1 paragraph 14 states that Early Childhood Education (PAUD) is an effort to foster children from birth to the age of six years which is carried out through the provision of educational stimulation to help physical and spiritual growth and development so that children are ready to enter further education. Children are pearls for everyone, because children are not only the next generation, children are able to become superior human beings better than their fathers and mothers.

Cognitive development competencies at RA Khadijah Aisyah are very necessary, because most children are unable to solve simple problems, know the size, color, shape and quantity. Most children are taught directly the difficult ones, not taught the simple ones first, so that children quickly feel frustrated and make children not want to do it. Learning should be done in stages from solving simple problems first to the difficult ones, we must also pay attention to the process. The impact that will occur if teachers do not pay attention to children's learning, namely there will be changes in the way children think in solving problems, knowing the size, color, shape, and quantity of observation results from November 1 to 5, 2021 stated that 5 out of 8 children in group B could not fold paper correctly, 4 out of 8 children in group B could not cut paper following a circle pattern, 1 out of 8 children in group B chatted when the teacher told a story, 6 out of 8 children in group B could not put together a puzzle. Of the four identified problems, the problem to be solved is problem solving through puzzle playing activities.

Based on the problems above, the researcher will improve cognitive abilities, namely problem solving through puzzle playing activities. Early childhood education (ECE) plays a crucial role in laying the foundation for a child’s development, which will significantly influence all aspects of their future life. At this stage, children begin developing basic skills that are essential for their cognitive, social, emotional, and physical growth. Among these aspects, cognitive abilities are particularly important to focus on. Cognitive skills include processes such as thinking, memory, problem-solving, and understanding information received from the surrounding environment. However, to develop children's cognitive abilities, appropriate and effective learning media are required. Various methods can be implemented to stimulate children's thinking skills, and one of them is through activities that engage mental activity. One such activity that can stimulate cognitive development is puzzle play. Puzzles can help children develop cognitive skills such as problem-solving, shape and color recognition, and the ability to think logically and analytically.

RA Khadijah Aisyah, an early childhood education institution in Jakarta, is committed to developing various teaching methods that can support children's development, especially in terms of cognitive abilities. While many methods are already in place, the development of cognitive abilities through enjoyable and educational games, such as puzzle play, still requires further attention. Early childhood education in Indonesia is increasingly focused on the importance of using enjoyable learning methods for children. This understanding is based on the recognition that children learn more effectively through direct experience and activities that involve their creativity. Therefore, using puzzles as an educational tool is highly relevant for enhancing children's thinking skills in a fun and interactive way.

However, despite the proven benefits of puzzles in supporting cognitive development, not all educational institutions in Indonesia, including RA Khadijah Aisyah, fully utilize this potential in their learning activities. The use of puzzles in teaching is often limited and has not been fully integrated into the ECE curriculum. Previous research has shown that puzzle activities can assist children in several cognitive development areas. For instance, puzzle play can train children to focus, improve problem-solving skills, and enhance memory and concentration. Children who frequently engage with puzzles have

also been reported to possess better spatial skills, which refers to the ability to understand and remember shapes, sizes, and positions of objects in space. In addition, puzzle play helps children learn cause-and-effect concepts, where they realize that to achieve a specific outcome (completing a picture), they need to take certain actions (correctly matching the puzzle pieces). This process provides challenges that stimulate a child's thinking and involves fine motor skills, such as hand-eye coordination.

RA Khadijah Aisyah itself has great potential to improve the quality of education by implementing puzzle play activities. However, research is needed to explore how puzzle play activities can effectively enhance children's cognitive abilities. Therefore, it is essential to conduct a study that examines the implementation of puzzles as a means of improving cognitive development in children at RA Khadijah Aisyah. This action research aims to explore how puzzle play activities can improve children's cognitive abilities at RA Khadijah Aisyah. Through this study, it is hoped that effective strategies for integrating puzzle activities into educational practices, suitable for the needs and characteristics of early childhood learners, can be identified. Proper use of puzzles can help children develop more complex thinking skills and encourage them to become more actively involved in learning activities. Additionally, this research is expected to provide useful information and recommendations for educators to design more creative and engaging learning activities. One of the goals of this study is to provide empirical evidence that puzzles can be an effective medium for enhancing cognitive skills in early childhood education, particularly at RA Khadijah Aisyah.

Puzzle play also offers opportunities for children to develop their social skills. While puzzles are generally seen as individual activities, in some cases, children can play in small groups, which enables them to learn cooperation, sharing, and helping one another to solve problems. This activity not only stimulates cognitive development but also social skills in children. Puzzles as an educational medium can also be adapted to a child's developmental stage. For younger children, simple puzzles with large pieces and familiar images can be used, while older children can be given more complex puzzles with smaller pieces. This approach allows children to learn according to their developmental stage and boosts their confidence when they successfully complete a puzzle.

In addition to enhancing cognitive abilities, puzzle play can also improve children's fine motor skills. When children solve puzzles, they use their hands and eyes to manipulate and fit the pieces together correctly. This process helps develop hand-eye coordination, which is a crucial skill for early childhood development. Although there are many benefits to puzzle play, the challenge in this study lies in how to integrate puzzles effectively into the learning process at RA Khadijah Aisyah. This requires a deeper understanding of how to structure puzzle-based activities that are both engaging and educational. Therefore, this research is crucial for understanding how puzzles can be implemented effectively in early childhood education settings.

Given this background, the study aims to address existing challenges and offer solutions that can be applied by teachers at RA Khadijah Aisyah. Through this research, it is hoped that effective methods for improving children's cognitive abilities at RA Khadijah Aisyah can be identified by utilizing puzzles as a fun and educational learning tool.

Previously, it can be concluded that the application of Punakawan puppet media can have an effect on improving language skills in group A children at An-Nisa Kindergarten. The teacher's performance in the learning process carried out in cycle I, the 1st activity, the number of scores obtained was good, then increased in activities 3 to cycle 2, namely with very good values. The teacher's ability to carry out activities from both cycles I and II has increased significantly. The research activity to improve language skills in group A children at An-Nisa Kindergarten is said to be successful because it is in accordance with the success indicators that have been compiled in the study. So that learning activities using Punakawan puppet media are very good to be implemented in school institutions.

METHODS

Early childhood education (ECE) plays a crucial role in the cognitive, social, emotional, and motor development of children. One important aspect to focus on is cognitive skills, which include a child's ability to solve problems, think critically, and process information. Activities that support cognitive development can be carried out through educational games that are engaging and enjoyable, one of which is playing puzzles. This research focuses on the theme "Improving Cognitive Skills through Puzzle Play at RA Khadijah Aisyah, Jakarta." Puzzle play is a type of activity that holds significant potential in supporting a child's cognitive development. Through puzzles, children can be trained to think logically, solve problems, and improve concentration and memory. RA Khadijah Aisyah, as an early childhood education institution, strives to develop teaching methods that stimulate children's cognitive abilities. However, challenges still exist in optimizing learning activities that can foster children's thinking skills.

The research questions for this study are as follows; 1) How can puzzle play activities improve children's cognitive skills at RA Khadijah Aisyah?; 2) What steps are necessary to effectively implement puzzle play activities to enhance children's cognitive skills?. The objectives of this research are to understand how puzzle play activities can improve children's cognitive skills at RA Khadijah Aisyah and to identify the necessary steps for implementing these activities effectively. This research is expected to contribute to the development of play-based learning methods that enhance children's cognitive skills. Furthermore, it aims to provide insights for educators and parents in selecting appropriate educational media for children.

Puzzle play is known to be an activity that can stimulate various aspects of a child's development, particularly cognitive skills. According to Piaget, children learn through direct interaction with their environment. Puzzles help children develop problem-solving skills, hand-eye coordination, and an understanding of spatial concepts and shapes. Previous research has shown that puzzle play is effective in improving early childhood cognitive skills such as memory, observation skills, and concentration. In early childhood education, play-based activities are crucial for supporting cognitive development. Puzzle play, as a medium, provides children with challenges to logically assemble pieces and complete a picture. Therefore, puzzles stimulate children's cognitive abilities through engaging and enjoyable activities. Based on theoretical insights and previous research, the hypothesis of this study is that puzzle play activities can enhance children's cognitive skills at RA Khadijah Aisyah, Jakarta.

This study uses a Classroom Action Research (CAR) approach, which aims to improve the quality of teaching through reflection and actions performed collaboratively between the researcher and the classroom teacher. This classroom action research consists of two cycles, each involving planning, implementation, observation, and reflection. The research design is action research with two cycles. Each cycle consists of four stages: planning, action implementation, observation, and reflection. The first cycle will focus on introducing puzzle play activities, while the second cycle will improve and optimize the activities based on findings from the first cycle. The subjects of this study are the children in Group B at RA Khadijah Aisyah, Jakarta, totaling 20 participants. They were chosen as a sample because they are at a developmental stage where their cognitive abilities can be influenced by puzzle play. Data collection methods for this study include observation, interviews, and documentation. Observation will be conducted to monitor children's cognitive development during puzzle play. Interviews will be conducted with the teacher to gather insights on their observations of the children's progress. Documentation will be used to record the process and outcomes of each cycle.

The instruments used in this study include observation sheets containing indicators of cognitive skills to be observed during puzzle play activities. These indicators include the child's problem-solving ability, picture assembly skills, and the ability to recognize shapes and colors. The research will be conducted in two cycles. In the first cycle, the teacher will introduce different types of puzzles to the children and provide simple instructions on how to play. The children will be asked to solve puzzles of varying difficulty. Observations

will be made during the activity to see how children engage with the puzzles and how they overcome difficulties. Reflection will take place to evaluate the effectiveness of the activity and plan improvements for the next cycle. In the first cycle, the teacher will introduce various puzzles to the children. The activity will begin with a warm-up conversation about shapes and colors. Afterward, the children will be given puzzles with familiar and easy-to-understand images. During the activity, the teacher will observe how children assemble the puzzles and offer assistance as needed. The results of the first cycle will be recorded in the observation sheet and analyzed to determine the extent to which the activity improves children's cognitive skills. Based on the reflections from Cycle I, the second cycle will involve increasing the difficulty of the puzzles to offer more of a challenge. Additionally, activities will be conducted in small groups to enhance social interaction and cooperation among children. Reflection and observation in Cycle II will be used to evaluate improvements in children's cognitive skills and to plan further actions if needed.

The data collected from observations will be analyzed qualitatively, by identifying changes in children's cognitive skills after participating in puzzle play activities. Each observed indicator will be compared before and after the activity to determine any improvement. It is expected that after participating in puzzle play activities, children will show improvements in their cognitive skills, particularly in problem-solving, recognizing shapes and colors, and increasing their concentration and hand-eye coordination. The expected outcome is also an increase in children's motivation to engage in fun learning activities. The results of this research are expected to provide evidence that puzzle play activities can significantly contribute to enhancing children's cognitive skills. Through these activities, children will not only learn basic concepts such as shapes and colors but also develop logical thinking skills and problem-solving abilities, which are crucial for their cognitive development.

Based on the results of this Classroom Action Research, it can be concluded that puzzle play activities can improve children's cognitive skills at RA Khadijah Aisyah. These activities are not only enjoyable but also effective in positively stimulating children's thinking abilities. To further improve the effectiveness of puzzle play activities, it is recommended that teachers provide a variety of puzzle difficulties and introduce more challenging puzzles gradually. Additionally, it is important to involve parents in supporting their children's development at home by providing age-appropriate puzzles.

RESULTS

The research was conducted over two cycles, each designed to observe the effect of puzzle play on children's cognitive development. The main focus was on how puzzle play activities could improve children's problem-solving abilities, memory, concentration, and logical thinking skills. Data was gathered through observation sheets, interviews with the teacher, and documentation of activities in the classroom. In the first cycle, the main objective was to introduce puzzle play activities to the children at RA Khadijah Aisyah. The teacher provided simple puzzles with large pieces and familiar images that were age-appropriate for the children. Each puzzle aimed to challenge children’s spatial awareness and memory. The teacher demonstrated how to solve the puzzles and encouraged the children to try it themselves, offering guidance as needed. Observations during the first cycle showed that children initially struggled with assembling the puzzles, especially when pieces did not fit as expected. However, they showed increased engagement as they began to understand how the puzzle pieces fit together.

During Cycle I, the children showed noticeable improvements in their ability to focus on a task for longer periods. Some children displayed frustration when they could not find the right pieces initially, but with support from the teacher, they learned to persist and try different approaches. This demonstrated the beginning of their problem-solving skills development. Several children also began to recognize shapes and colors more easily as they worked with the puzzles. This was evident as they pointed out different colors and

shapes when solving the puzzles. Additionally, a few children began to engage in verbal discussions with their peers, helping one another when they encountered difficulties. This indicated a growth in their social and cooperative skills, which are key components of cognitive development.

The teacher reflected that children were more engaged and motivated during the puzzle activities than during traditional learning activities. However, some children had difficulties with completing more complex puzzles. The teacher noted that while some children found the puzzles easy, others felt frustrated and discouraged. This feedback was used to plan improvements for the next cycle. Based on the reflections and observations from Cycle I, several changes were made for the second cycle. The difficulty of the puzzles was adjusted to ensure that they were challenging but not too difficult for the children. The teacher also decided to introduce puzzles with fewer pieces and provide more individualized support for those children who struggled. Additionally, the teacher planned to incorporate small group activities to encourage more peer collaboration.

In Cycle II, puzzle play was modified to incorporate more interactive and collaborative elements. Children were grouped into small teams and given puzzles with varying difficulty levels. This approach aimed to enhance peer interactions and foster cooperative problem-solving. Children were encouraged to help each other, discuss strategies, and share their thoughts as they solved the puzzles together. The teacher also introduced puzzles that required more critical thinking, such as puzzles with abstract shapes and fewer visual cues. This was done to further stimulate children's cognitive abilities and challenge them to think more analytically. The teacher also provided praise and positive reinforcement when children solved puzzles, which helped to motivate them further.

During Cycle II, children displayed even more focus and enthusiasm while engaging in puzzle play. They were able to solve puzzles more quickly, demonstrating improvements in their problem-solving and memory skills. Children who struggled in the first cycle were now able to assemble the puzzles with less guidance, showing that their cognitive skills had improved. One notable finding was that some children began to exhibit more independence in their puzzle-solving efforts. They were less reliant on the teacher and showed more confidence in figuring out how the pieces fit together. This suggested that puzzle play had helped boost their self-esteem and foster a sense of accomplishment. Furthermore, group dynamics were observed to improve. Children worked together more effectively, communicating and collaborating to complete the puzzles. This teamwork enhanced their social and cognitive skills, as they were able to share ideas and strategies while working towards a common goal.

The teacher's reflections from Cycle II revealed that the children had made significant progress in their cognitive abilities, particularly in problem-solving and concentration. The children's ability to work independently and collaboratively had improved, and the teacher noted a greater sense of self-reliance and confidence among the children. The modifications made to the puzzles had provided an appropriate level of challenge, which contributed to the children's increased engagement and success. The teacher also observed that children were more eager to participate in puzzle activities. They expressed excitement when new puzzles were introduced and were more persistent when faced with challenges. The teacher concluded that the puzzle play activities had been highly effective in enhancing children's cognitive development.

Through puzzle play, children demonstrated significant improvements in several cognitive skills. One of the most noticeable improvements was in problem-solving ability. Children who struggled with identifying puzzle pieces in Cycle I were able to think more strategically in Cycle II. They used different approaches, such as trial and error, to find the right pieces, showing enhanced critical thinking and problem-solving skills. Memory also improved significantly. Children were able to recall the shapes and colors of puzzle pieces more easily and could recognize patterns within the puzzle more quickly. This

development was especially noticeable in children who had shown difficulty with short-term memory recall during Cycle I.

In addition to cognitive improvements, children also made progress in their social and emotional development. Puzzle play activities encouraged cooperation and teamwork, which helped children learn how to communicate and share ideas. As they worked in small groups, children learned to negotiate and collaborate, skills that are essential for emotional and social growth. Children also displayed increased self-confidence. Successfully completing a puzzle gave them a sense of achievement, which boosted their self-esteem. The teacher observed that children were more willing to take risks and try new things, knowing that their efforts would be recognized and rewarded.

Another important outcome was the improvement in fine motor skills. Handling and manipulating the puzzle pieces required precise hand-eye coordination, which is essential for the development of fine motor control. Children's ability to grasp and move the pieces with more accuracy showed noticeable improvements over the two cycles. This development was especially significant for children who had previously shown weaker motor skills. Puzzle play provided them with the opportunity to strengthen their hand muscles and improve their coordination, which is a fundamental aspect of early childhood development. Based on the observations and feedback from both cycles, it can be concluded that puzzle play has a positive and lasting impact on children's cognitive development. Children who participated in the puzzle activities displayed a deeper understanding of shapes, colors, and spatial relationships, which are key elements of early learning. Furthermore, the skills learned through puzzle play are transferable to other learning areas. For example, the problem-solving strategies children used during puzzle play were later applied to other classroom activities, such as group tasks and individual assignments. This suggests that puzzle play fosters general cognitive skills that can support learning in various contexts.

Based on the findings from this research, it is recommended that educators incorporate puzzle play into their daily activities to support the development of cognitive skills in young children. Educators should consider the developmental level of the children when selecting puzzles and ensure that the puzzles are appropriately challenging. Additionally, small group activities should be encouraged to enhance social interaction and collaboration among children. Teachers should provide guidance and positive reinforcement to motivate children and ensure they stay engaged in the activity.

In conclusion, this research demonstrates that puzzle play activities can significantly improve children's cognitive skills, social skills, and fine motor development. Through two cycles of action research, it was shown that puzzle play enhances problem-solving abilities, memory, concentration, and teamwork. These improvements indicate that puzzle play is an effective tool for fostering cognitive and emotional growth in young children. The study also highlighted the importance of adapting learning activities to suit the developmental needs of children and integrating them into the broader curriculum to maximize their impact. By incorporating puzzle play into daily learning routines, educators can provide children with a fun and effective way to develop essential skills for their future academic success. Future research could explore the long-term effects of puzzle play on cognitive development, particularly in terms of its impact on school readiness and academic achievement. It would also be valuable to examine how different types of puzzles (e.g., 3D puzzles, puzzles with varying difficulty levels) contribute to different cognitive areas such as logical thinking, spatial reasoning, and memory.

DISCUSSION

The use of puzzles as an educational tool in early childhood education has gained increasing attention due to its potential benefits in cognitive, social, and motor development. In this study, the primary objective was to explore how puzzle play could improve cognitive abilities such as problem-solving, concentration, memory, and logical

thinking among young children at RA Khadijah Aisyah. The results of the research indicate significant advancements in these cognitive areas through the implementation of puzzle-based activities. One of the most significant findings of the study was the improvement in children's problem-solving abilities. In Cycle I, children struggled to solve puzzles independently. However, by the end of Cycle II, many children had developed more effective strategies for approaching puzzles. They began using trial and error, experimenting with different combinations of pieces until they found the right match. This change indicates an important cognitive development: the ability to think critically and find solutions to challenges.

Puzzle play fosters cognitive flexibility, a key aspect of problem-solving that allows children to adapt their thinking when faced with difficulties. In this research, it was observed that children who had initially become frustrated by the complexity of the puzzles were able to adjust their approach as they gained experience. This shift in approach reflects cognitive flexibility, showing that the children were able to modify their strategies based on new information and experiences. This adaptability is crucial for lifelong learning and critical thinking. The study showed that memory, particularly working memory, was enhanced through puzzle play. Working memory is crucial for holding and manipulating information for short periods, and puzzles require children to recall shapes, colors, and the positions of pieces to complete the puzzle. Throughout the cycles, children began to remember the pieces' locations and showed greater retention of information. These improvements were not only seen during puzzle activities but also in other learning tasks, suggesting that memory enhancements gained from puzzle play were transferable to other educational contexts.

Another significant cognitive improvement observed was in children's concentration and attention span. In the initial cycle, children had difficulty maintaining focus for extended periods while working on puzzles. However, in the second cycle, many children were able to work on puzzles for longer periods without becoming distracted. This increase in concentration can be attributed to the engaging nature of puzzles, which provide a structured yet stimulating environment that encourages sustained focus. By incorporating puzzles into regular learning activities, children's ability to focus on tasks can be further developed. Teacher guidance played a vital role in the success of the puzzle activities. In Cycle I, many children were hesitant to attempt the puzzles independently. The teacher's role in demonstrating how to approach the puzzle and providing encouragement was crucial in helping children overcome initial frustration. By Cycle II, however, children required less guidance, showing an increased ability to work independently. This shift highlights the importance of gradually reducing teacher intervention as children's confidence and problem-solving abilities increase. Puzzle play also significantly enhanced children's social skills, particularly in terms of collaboration and teamwork. In Cycle II, the introduction of small group activities allowed children to work together, sharing ideas, and helping each other solve the puzzles. Observations revealed that children began to negotiate the use of puzzle pieces, communicate their strategies, and offer suggestions to peers. This cooperative environment encouraged children to develop essential social skills such as patience, empathy, and teamwork.

The peer interactions during group puzzle play offered another layer of cognitive growth. Children learned to communicate their thought processes and listen to others' suggestions, which required a higher level of cognitive engagement. For instance, a child who might have initially struggled with recognizing shapes was able to benefit from a peer's suggestion, leading to shared problem-solving. This dynamic helped develop not only cognitive skills but also language skills as children articulated their thoughts and shared ideas with their peers. The results from both cycles highlighted the importance of selecting puzzles that were developmentally appropriate for the children's age and skill level. During Cycle I, some puzzles proved too challenging for certain children, leading to frustration and disengagement. However, by Cycle II, the puzzles were carefully chosen to match the children's developmental stage. This careful selection allowed children to

experience success, which in turn encouraged further participation and engagement in the puzzle activities. This finding suggests that puzzle difficulty should be adjusted to ensure that children are both challenged and supported in their learning. Puzzle play significantly contributed to boosting children's self-esteem and confidence. As children successfully solved puzzles, they experienced a sense of accomplishment, which enhanced their self-worth. This newfound confidence was reflected in their willingness to tackle more complex puzzles and their increased engagement in other learning activities. By giving children the chance to succeed in a structured activity like puzzle play, their belief in their abilities grew, laying the foundation for positive learning experiences in the future.

The relationship between fine motor skills and cognitive development was another important aspect of the study. As children manipulated the puzzle pieces, they were strengthening their hand-eye coordination, a crucial aspect of early childhood development. This enhancement in fine motor skills also contributed to their cognitive development by supporting their ability to engage in tasks that require precise movements and coordination. Over time, as children worked with the puzzle pieces, their dexterity and control over small objects improved, demonstrating the interconnectedness between physical and cognitive development. One of the notable changes between Cycle I and Cycle II was the children's increased ability to solve puzzles independently. Initially, many children required constant support from the teacher or peers to complete the puzzles. However, by the end of the second cycle, many children demonstrated increased independence, confidently solving puzzles without assistance. This shift towards independent learning indicated that the cognitive benefits of puzzle play, such as problem-solving and memory retention, were beginning to take root and develop in a way that encouraged self-sufficiency. Puzzle play also contributed to the development of language skills. During group puzzle activities, children often communicated with each other, describing the pieces they were working with or explaining their thought processes. This verbal exchange enhanced their vocabulary and language comprehension. Additionally, as children described the colors, shapes, and patterns they were working with, they developed a better understanding of spatial language, which is an important aspect of early cognitive development.

Spatial awareness is one of the cognitive skills that was significantly enhanced through puzzle play. Children developed a better understanding of how shapes and pieces fit together, improving their spatial reasoning. As they solved puzzles, they learned to recognize patterns and make connections between different parts of the puzzle. This increased spatial awareness is not only crucial for completing puzzles but also for tasks like reading, writing, and understanding mathematical concepts. Puzzle play provided a highly engaging and motivating environment for the children. Throughout both cycles, children appeared more enthusiastic about the learning process when puzzles were included in the activities. The fun and interactive nature of puzzles motivated children to participate actively, making learning enjoyable. This level of engagement is vital for fostering a positive attitude towards learning and helps create an environment where children are excited to challenge themselves and explore new concepts.

While the puzzles themselves played a key role in the children's cognitive development, the teacher's role in guiding and encouraging the children was equally important. In both cycles, the teacher's encouragement helped children stay engaged and motivated, especially when faced with challenges. Providing positive reinforcement, such as praising effort rather than just results, helped build a growth mindset, where children understood that learning is a process that involves persistence and effort. The cognitive benefits of puzzle play extended beyond the activity itself. As children engaged in puzzle-solving, they were not only developing specific skills like memory and problem-solving but also gaining a more general ability to approach challenges in other areas of their learning. The patience and persistence developed during puzzle play contributed to a more positive attitude toward other academic tasks and challenges, demonstrating that puzzle play has far-reaching benefits for overall cognitive development.

Puzzle play also provided opportunities for emotional development. Children learned how to handle frustration when they encountered difficulties, as well as how to experience success when they completed a puzzle. This ability to navigate both success and failure is essential for emotional maturity, as it teaches children resilience and perseverance. Over time, children became more confident in their ability to face challenges, not just in puzzle play but in other aspects of their lives. The skills learned through puzzle play have the potential to benefit children in future academic settings. The problem-solving, memory, and concentration skills developed through puzzles are foundational for learning in various subjects, including mathematics, science, and language arts. Children who develop strong cognitive skills early on are better prepared for academic success in later stages of their education. For children who may face learning difficulties or developmental delays, puzzle play can serve as an early intervention tool. By incorporating puzzle activities into the learning environment, educators can identify children who may need additional support in cognitive areas and provide targeted interventions. Puzzle play can be adapted to meet the individual needs of children, offering a flexible and effective way to promote development in both typical and at-risk learners.

Based on the findings of this study, it is recommended that puzzle play be incorporated regularly into early childhood education curricula. Teachers should select puzzles that align with children's developmental stages and encourage both individual and group problem-solving activities. Puzzle play should be integrated with other learning activities, creating a balanced approach to cognitive, social, and motor development. Overall, this research demonstrates the efficacy of puzzle play in enhancing cognitive development in young children. Through both individual and group activities, children showed significant improvements in problem-solving, memory, concentration, and spatial awareness. Puzzle play not only contributed to cognitive development but also to emotional and social growth, helping children develop skills that are essential for future academic and life success. Future research could expand on this study by exploring how different types of puzzles, such as 3D puzzles or digital puzzles, contribute to different cognitive skills. Additionally, longitudinal studies could examine the long-term effects of puzzle play on academic achievement and other aspects of child development. Future research could also explore how puzzle play can be adapted for children with specific learning needs or disabilities, providing more inclusive educational opportunities.

CONCLUSION

This study has demonstrated that puzzle play is an effective and valuable tool for enhancing cognitive development in early childhood education. The research conducted at RA Khadijah Aisyah showed that incorporating puzzle activities significantly improved children’s problem-solving abilities, memory, concentration, spatial awareness, and logical thinking skills. These improvements were observed across two cycles, with the children showing noticeable progress from Cycle I to Cycle II, both in individual and group settings. Puzzle play helped foster cognitive flexibility, as children adapted their problem-solving strategies and learned how to overcome challenges. Their memory and working memory skills were also enhanced, as they were able to recall and manipulate information related to the puzzle pieces. Moreover, children’s attention span and concentration improved, with many children being able to focus on the task for extended periods without becoming distracted. The study also highlighted the important role of social interactions in cognitive development. By working in small groups, children were able to collaborate, share strategies, and help each other solve the puzzles. This peer interaction encouraged the development of communication, teamwork, and social problem-solving skills. Furthermore, puzzle play supported emotional development by teaching children how to deal with frustration and experience a sense of accomplishment, which boosted their self-esteem and confidence. In addition to cognitive and emotional growth, puzzle play contributed to the development of fine motor skills, as manipulating puzzle pieces

required hand-eye coordination and precision. The results also indicated that puzzle play could foster a positive learning environment, as children were more engaged, motivated, and eager to participate in learning activities. Overall, the study concludes that puzzle play is a highly effective educational tool for improving cognitive abilities in early childhood settings. It provides an engaging, enjoyable, and interactive way for children to develop essential skills that will benefit them throughout their academic and personal lives. The research suggests that educators should consider integrating puzzle play into their daily teaching routines to support children's cognitive, social, and emotional development. Furthermore, the study recommends adapting puzzle activities to suit the developmental stages of children, ensuring they are appropriately challenged and supported. In light of the findings, it is clear that puzzle play not only promotes cognitive development but also lays the foundation for future learning and success. The positive impact on children's cognitive, social, and emotional growth underscores the value of incorporating puzzle activities into early childhood education curricula. Future research could explore the long-term benefits of puzzle play and its impact on various aspects of child development, particularly in more diverse educational contexts.

REFERENCES

Arikunto, S. (2002). Prosedur Penelitian. Bandung: Rineka Cipta.

Dasopang, M. D., Lubis, A. H., & Dasopang, H. R. (2022). How do Millennial Parents Internalize Islamic Values in Their Early Childhood in the Digital Era? AL-ISHLAH: Jurnal Pendidikan, 14(1), 697–708.

Dasopang, M. D., Nasution, I. F. A., & Lubis, A. H. (2023). The Role of Religious and Cultural Education as A Resolution of Radicalism Conflict in Sibolga Community. HTS Theological Studies, 79(1), 1–7.

Erawadi, E., Hamka, H., & Juliana, F. (2017). The Analysis of Student's Stressed Syllables Mastery at Sixth Semester of TBI in IAIN Padangsidimpuan. English Education: English Journal for Teaching and Learning, 5(1), 44–57.

Fatimah, A., & Maryani, K. (2018). Visual Literasi Media Pembelajaran Buku Cerita Anak. Jurnal Inovasi Teknologi Pendidikan, 5(1), 61–69. https://doi.org/10.21831/jitp.v5i1.16212

Gogahu, D. G. S., & Prasetyo, T. (2020). Pengembangan Media Pembelajaran Berbasis E-Bookstory untuk Meningkatkan Literasi Membaca Siswa Sekolah Dasar. Jurnal Basicedu, 4(4), 1004–1015.

Hamka, H. (2023). The Role of Principals on Teacher Performance Improvement in a Suburban School. QALAMUNA: Jurnal Pendidikan, Sosial, Dan Agama, 15(1), 371–380.

Hamka, H., Suen, M.-W., Anganthi, N. R. N., Haq, A. H. B., & Prasetyo, B. (2023). The Effectiveness of Gratitude Intervention in Reducing Negative Emotions in Sexual Abuse Victims. Psikohumaniora: Jurnal Penelitian Psikologi, 8(2), 227–240.

Harahap, S. M., & Hamka, H. (2023). Investigating the Roles of Philosophy, Culture, Language and Islam in Angkola's Local Wisdom of 'Dalihan Na Tolu.' HTS Teologiese Studies/Theological Studies, 79(1), 8164.

Hendrawati, S., Rosidin, U., & Astiani, S. (2020). Perilaku hidup bersih dan sehat (PHBS) siswa/siswi di sekolah menengah pertama negeri (SMPN). Jurnal Perawat Indonesia, 4(1), 295–307. https://doi.org/https://doi.org/10.32584/jpi.v4i1.454

Lubis, A. H. (2019). Upaya Peningkatan Hasil Belajar Siswa Sekolah Dasar melalui Model Cooperative Learning Tipe Numered Heads Together. FORUM PAEDAGOGIK, 11(2), 127–143.

Lubis, A. H. (2023). The Interactive Multimedia Based on Theo-Centric Approach as Learning Media during the Covid-19 Pandemic. JPI (Jurnal Pendidikan Indonesia), 12(2), 210–222.

Lubis, A. H., & Dasopang, M. D. (2020). Pengembangan Buku Cerita Bergambar Berbasis Augmented Reality untuk Mengakomodasi Generasi Z. Jurnal Pendidikan: Teori, Penelitian, Dan Pengembangan, 5(6), 780–791.

Lubis, A. H., Dasopang, M. D., Ramadhini, F., & Dalimunthe, E. M. (2022). Augmented Reality Pictorial Storybook: How does It Influence on Elementary School Mathematics Anxiety? Premiere Educandum: Jurnal Pendidikan Dasar Dan Pembelajaran, 12(1), 41–53.

Lubis, A. H., & Wangid, M. N. (2019). Augmented Reality-assisted Pictorial Storybook: Media to Enhance Discipline Character of Primary School Students. Mimbar Sekolah Dasar, 6(1), 11–20. https://doi.org/10.17509/mimbar-sd.v6i1.16415

Lubis, A. H., Yusup, F., Dasopang, M. D., & Januariyansah, S. (2021). Effectivity of Interactive Multimedia with Theocentric Approach to the Analytical Thinking Skills of Elementary School Students in Science Learning. Premiere Educandum: Jurnal Pendidikan Dasar Dan Pembelajaran, 11(2), 215–226.

Manshur, U., & Ramdlani, M. (2019). Media audio visual dalam pembelajaran PAI. Al-Murabbi:Jurnal Pendidikan Agama Islam, 5(1), 1–8.

Mardhiyah, R. H., Aldriani, S. N. F., Chitta, F., & Zulfikar, M. R. (2021). Pentingnya Keterampilan Belajar di Abad 21 sebagai Tuntutan dalam Pengembangan Sumber Daya Manusia. Lectura: Jurnal Pendidikan, 12(1), 29–40.

Ningsih, Y. S., Mulia, M., & Lubis, A. H. (2023). Development of Picture Storybooks with TheoAnthropoEco Centric Approach for Elementary School Students. AL-ISHLAH: Jurnal Pendidikan, 15(2), 1888–1903.

Nurhidayah, I., Asifah, L., & Rosidin, U. (2021). Pengetahuan , Sikap dan Perilaku Hidup Bersih dan Sehat pada Siswa Sekolah Dasar. 13(1), 61–71. https://doi.org/10.32528/ijhs.v13i1.4864

Pebtiyanti, I., Ahmad, A., Dzaky, M., Fauziah, S. N., Rendi, & Puspitasari, P. (2023). Peran kurikulum merdeka dalam meningkatkan harmonisasi antara masyarakat dan sekolah. Jurnal Pacu Pendidikan Dasar, 3(1), 269–277. https://doi.org/https://doi.org/10.22021/pacu.v3i1.411

Rahmah, S., & Lubis, A. H. (2024). Problem Posing as a Learning Model to Improve Primary School Students' Mathematics Learning Outcomes in Gayo Lues. Journal of Indonesian Primary School, 1(4), 93–104.

Rahman, A., Munandar, S. A., Fitriani, A., Karlina, Y., & Yumriani. (2022). Pengertian Pendidikan, Ilmu Pendidikan dan Unsur-Unsur Pendidikan. Al Urwatul Wutsqa: Kajian Pendidikan Islam, 2(1), 1–8.

Ranisa, R., Erawadi, E., & Hamka, H. (2018). Students' Mastery in Identifying Adverbs at Grade VIII SMPN 2 Batang Toru Tapanuli Selatan. ENGLISH EDUCATION JOURNAL: English Journal for Teaching and Learning, 6(2), 241–252.

Ricardo, R., & Meilani, R. I. (2017). Impak Minat dan Motivasi Belajar terhadap Hasil Belajar Siswa. Jurnal Pendidikan Manajemen Perkantoran (JPManper), 2(2), 188–201.

Santi, Undang, & Kasja. (2023). Peran Guru PAI dalam Membentuk Karakter Peserta Didik di Sekolah. Jurnal Pendidikan Tambusai, 7(2), 16078–16084. https://doi.org/https://doi.org/10.31004/jptam.v7i2.8918

Sugiyono. (2018). Metode Penelitian Kuantitatif Kualitatif dan R&D. Bandung: Alfabeta.