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Improving Cognitive Ability of Geometric Shapes by Using Natural Media at RA Perwanida Blitar

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Abstract: Kindergarten/RA is a form of preschool education unit held before elementary education level (Law of the Republic of Indonesia no.20 of 2003 concerning the National Education System, article 28). Kindergarten/RA education aims to help lay the foundation for further development. Kindergarten/RA is also a formal educational institution before entering Elementary School. One of the things that is developed is the cognitive ability of geometric shapes. Low learning ability of geometric shapes is a problem faced by teachers in Group A RA Perwanida Blitar. Based on these conditions, the formulation of the problem presented in this writing is: what objects are used to develop cognitive abilities of geometric shapes in Group A RA Perwanida and how to improve cognitive abilities of geometric shapes by using natural media around children in Group A RA Perwanida. This study uses Classroom Action Research (CAR) which is carried out in two cycles, with each cycle having planning, implementation, observation, and reflection. The data source is students of Group A RA Perwanida through more interesting learning activities using natural media around with objects that are adjusted to the theme as a learning resource proven to be able to improve children's geometric shape abilities, which can be seen from the observation data sheet during the geometric shape learning activity. In cycle I, the results obtained were 50% increase in geometric shape learning abilities in cycle II, the results obtained were 82.05% with these results indicating that this study was successful because it exceeded the target of the research indicator by 80%. The results of this study indicate that with natural media as a learning resource can be said to be successful in improving geometric shape abilities. Based on this study, it is recommended that all teachers can provide interesting and enjoyable geometric shape learning for children. Teachers should also be able to create a comfortable and enjoyable learning environment for children.

Keywords: Children's Geometric Shape Ability, Natural Media

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INTRODUCTION

The cognitive process includes aspects of perception, memory, thought, symbols, reasoning and problem solving. Referring to the learning guidelines for cognitive development in Kindergarten, one of the classifications of cognitive development is geometric development, namely the ability to conceptualize shape and size. For example, choosing objects according to color, shape, size, for example, the teacher gives an example of geometry with a small yellow color, after being explained, the child is instructed to find the same object as exemplified by the teacher. Creating shapes from geometric pieces, for example, making a train from rectangular geometric pieces and circles as wheels. Calling objects in the classroom according to geometric shapes, for example, the child mentions that rectangular objects are tables, photo frames, blackboards. Imitating geometric shapes, for example, the child imitates making lines into squares, triangles. Calling, pointing, and

grouping circles, triangles, rectangles, for example, the teacher gives one of the objects and the child is instructed to name it. The subject of geometric shapes is not listed in the TK/RA curriculum, but this does not mean that geometric shapes do not exist in TK/RA. Geometric shapes in kindergarten/RA remain and are integrated with other fields in each theme. The introduction of geometric shapes for children is carried out in kindergarten/RA in an integrated learning manner. So that geometry learning is integrated with other development fields.

The development of geometry learning in children includes other development fields that have an important role in helping to lay the foundation for the expected abilities and formation of human resources. Geometry is a science of measurement that studies a field. For kindergarten/RA children, these objects include objects such as leaves, rocks, books, hats, mountains, wood, and themselves are geometric objects. Various geometric shapes such as triangles, circles, squares, rectangles, are objects that can be studied through scientific methods. For kindergarten/RA children, which can be simplified through observation, exploration and simple experiments. Children can do this by choosing, grouping, measuring, creating and so on. Children have geometric skills so that they can develop their knowledge. Of course, by introducing geometry early on according to the stage of development, because early age is a fundamental age for individual development. Kindergarten/RA teachers are required to be able to choose media that is appropriate to the material or the competencies to be achieved. The selection of the right media will increase the enthusiasm of kindergarten children in participating in learning activities well, so that a conducive and enjoyable learning atmosphere is created. One of the strategic steps to be able to provide children optimally, must be preceded by understanding the characteristics and objectives of Education and learning that will be applied to kindergarten children, including in the field of geometry development. By understanding the scope and objectives of geometry education, it will help teachers in mastering geometry learning for kindergarten children that is considered appropriate. In order to realize geometry learning in kindergarten children optimally, teachers/educators should really understand the nature of geometry correctly, especially in relation to early childhood (TK/RA) as the target

Starting from the experiment of learning geometric shapes that the researcher had applied in the class for a day when the researcher asked about the geometric shape of a rectangle in the form of a picture only a few children could answer it correctly and precisely. While the other children were silent, confused, and did not want to know. Then the researcher looked for journals related to research on geometric shapes. In the PAUD VOL 1 journal, Irma Sospayeni conducted a study entitled Geometric Shapes in Building Children's Artistic Creativity. This study was also conducted at RA Nahdlatul Shibyan Puspo Pasuruan, out of 20 students, 4 students focused on teacher material. From various existing research journals, all focus on children's creativity in using geometric shapes. Based on observations made by teachers in class group B, a total of 22 children consisting of 13 boys and 9 girls at RA Perwanida Blitar, it showed that children's cognitive abilities in geometric shapes were still very low. This is indicated by a lack of understanding of the ability of geometric shapes. Children's inability is characterized by children's difficulty in naming geometric objects, grouping geometric objects, grouping geometric shapes. It can be seen from the percentage of 22 children in the class, 80% (17 children) have not been able to understand it and 20% (5 children) can understand it. Monotonous learning with worksheets (LK) and pictures affects children in recognizing and understanding geometric concepts so that children feel bored and fed up. The lack of activity in learning geometric shapes is because students are not used to expressing their own opinions and ideas. For example, if the teacher shows a triangular geometric piece to be used as a roof, or gives a rectangular geometry as a window shape, the child will copy it exactly the same without providing other interesting ideas from his mind. And the teacher still uses artificial media or not the real thing. In reality, the results achieved from the material on geometric shapes, children have not been able to have other thoughts other than those exemplified

by the teacher. The curriculum used at RA Perwanida Blitar uses KBK (Competency-Based Curriculum). KBK 2004 has been improved and supplemented with the school level curriculum (KTSP) which is adjusted to the conditions of each school which refers to Permendiknas no. 58. The activities used in learning use areas taken from the matrix and stated in the promes (semester program), weekly plan program (RKM), and daily plan program (RKH). The activity of providing geometric shape material to children at RA Perwanida Blitar also refers to the matrix which is a guide for teachers to create RKM and RKH. The indicators include: (cognitive. 25. Grouping geometric shapes of circles, triangles, quadrilaterals), (cognitive. 26. Distinguishing geometric objects), (cognitive. 27. Distinguishing the characteristics of geometric shapes), (cognitive. 28. mentioning geometric objects), (physical motor. 52. Creating shapes from more complex geometric pieces). Teachers try to overcome the problem of geometric shape material by providing geometric pieces to be made into a car, house, train, grouping according to circle shape with circle, square with square, arranging blocks into house, building or other shapes according to children's ideas, but still the teacher has not succeeded in solving the problem. From the observations that have been made, it was concluded that in learning geometric shape material, teachers always provide examples that are more dominated by teachers, so that learning focuses on teachers rather than students, and the diversity of geometric learning media must also be more varied. From the various obstacles that have been described, there needs to be a study that applies a certain learning media that can improve students' abilities in completing geometric shape material, so a classroom action research was conducted entitled "Improving Cognitive Ability of Geometric Shapes Using Natural Media in Group A RA Perwanida Blitar.

METHODS

This research was conducted using the Classroom Action Research (CAR) approach, aimed at improving children's cognitive abilities in recognizing geometric shapes through the use of environmental media at RA Perwanida Blitar. The study was carried out in two cycles, each consisting of planning, implementation, observation, and reflection. The research involved the teacher and 25 students from class A of RA Perwanida. Preparation Phase of the Research. At the initial stage, the problem related to children's cognitive abilities in recognizing geometric shapes was identified. The teacher found that many students had difficulty recognizing and differentiating basic geometric shapes, such as circles, triangles, and squares. Furthermore, they were less interested in abstract learning, requiring a more contextual and engaging approach. Based on this issue, the teacher planned to use environmental media to introduce geometric shapes more directly and engagingly.

Learning Design. In the lesson planning phase, the teacher designed activities using objects from the surrounding environment, such as stones, leaves, twigs, and other items that could help introduce geometric shapes. The learning was carried out through exploration, where children were given the opportunity to see and directly experience the geometric shapes through objects around them. For instance, the children were asked to find objects that were shaped like circles, triangles, or squares in their environment and arrange them into specific patterns.

Cycle I: Implementation and Observation. In the first cycle, the lesson began with introducing basic geometric shapes using natural objects. The children were invited to leave the classroom and explore the school yard or nearby garden to find objects with specific geometric shapes. The activity aimed to provide children with real-life experiences of the geometric shapes in their surroundings. The teacher explained each geometric shape by pointing out relevant objects. During this activity, the teacher observed how well the children could recognize and differentiate the geometric shapes they encountered. Some children were enthusiastic and able to identify shapes well, but others struggled and required further guidance. Nevertheless, most students were more

interested in the lesson because they used environmental media that were more engaging for them.

Reflection of Cycle I and Planning for Cycle II. After completing Cycle I, the teacher reflected on the learning process. Based on the observations, it was found that the use of environmental media helped attract students' attention and made them more active in recognizing geometric shapes. However, there were still children who had difficulty identifying specific geometric shapes, especially in distinguishing similar shapes such as triangles and squares. The teacher also found that although exploration activities were fun, some children needed more time to truly understand and master the concepts being taught. Based on these findings, the teacher planned to improve the activities in Cycle II by introducing a wider variety of environmental media and providing more opportunities for students to discuss and share their findings. The teacher also intended to give additional explanations about the characteristics of each geometric shape and how to distinguish them more clearly.

Cycle II: Implementation and Observation. In Cycle II, the teacher continued the activity of exploring geometric shapes by introducing more complex natural objects, such as oval-shaped leaves, tree roots resembling circles, and tree trunks that resembled rectangles. The teacher also added group activities, where the children worked together to collect objects with specific geometric shapes and then arranged them into patterns. This activity aimed to enhance their cognitive abilities in recognizing shapes while also strengthening their social skills and teamwork. The teacher also provided opportunities for the children to discuss the shapes they found and how they could differentiate one shape from another. This allowed the children to better understand the concept of geometric shapes in a more interactive and collaborative manner. At the end of the activity, the teacher summarized the geometric shapes they had learned and encouraged the children to recall the objects they had found in the environment that had these shapes.

Reflection of Cycle II and Evaluation of Results. After completing Cycle II, the teacher again reflected on and evaluated the learning outcomes. Overall, there was significant improvement in the students' understanding of geometric shapes. Children who had difficulty identifying shapes in Cycle I were now able to recognize and differentiate them more easily. They also became more confident in discussing their findings with their peers. The group activity in Cycle II proved to be very helpful in reinforcing the students' understanding and gave them the opportunity to learn from each other. However, some students still needed more attention in recognizing more complex shapes. The teacher noted that children's understanding of geometric shapes could be maximized if they were given more time and opportunities to practice and explore the various shapes present in their environment. Therefore, the teacher planned to continue using environmental media in future lessons.

Conclusion and Recommendations. Based on the results of this study, it can be concluded that using environmental media in the teaching of geometric shapes at RA Perwanida Blitar can enhance children's cognitive abilities in recognizing and differentiating geometric shapes. This contextual approach using objects from the environment made the learning process more engaging and active for the children. Additionally, exploration-based learning helped students understand geometric concepts in a more tangible way. However, although significant progress was made, some students still required additional support. Therefore, it is recommended that teachers provide more opportunities for students to practice and revisit the learning about geometric shapes and offer clearer explanations about the characteristics of each shape. By doing so, children's cognitive abilities in recognizing geometric shapes can be further developed and maximized.

RESULTS

The results of this Classroom Action Research (CAR) study, aimed at improving children's cognitive abilities in recognizing geometric shapes using environmental media at RA Perwanida Blitar, demonstrated noticeable improvements in students' understanding and engagement with geometric shapes. The study was conducted in two cycles, with the first cycle focusing on basic geometric shapes like circles, squares, and triangles, and the second cycle expanding on this knowledge with more complex shapes like rectangles and ovals. Cycle I Results: Initial Implementation of Environmental Media. In the first cycle, the students were introduced to basic geometric shapes through objects found in their environment. The students were excited about the exploration activities, where they identified shapes in natural surroundings like stones, leaves, and tree trunks. The teacher observed that while the children were engaged, some had difficulty differentiating similar shapes such as squares and rectangles. The observation showed that most students could recognize the shapes when prompted, but there was a lack of deeper understanding about the properties of these shapes. Several students were particularly interested in the shapes they encountered in nature, but struggled to articulate why certain objects resembled a square or a triangle. The teacher observed that while some students understood the concept of a circle easily, recognizing a triangle or square was more challenging. The children were able to point out examples of shapes but found it difficult to apply their understanding consistently.

Post-Test Results of Cycle I. At the end of Cycle I, the teacher administered a post-test to assess the children's knowledge of geometric shapes. The average score from the post-test indicated a slight improvement compared to the pre-test, though the progress was not as significant as expected. The results showed that approximately 60% of the students had mastered the concept of recognizing basic shapes like circles and squares, while only about 40% had developed a strong understanding of triangles and rectangles. This highlighted that while the children had benefited from the hands-on approach, they still required more practice to fully comprehend and differentiate shapes.

Reflections from Cycle I. In the reflection after Cycle I, the teacher noted that while the children were engaged and the use of environmental media proved to be an effective strategy for attracting their attention, more emphasis needed to be placed on helping them understand the characteristics of each shape. The teacher concluded that certain shapes like rectangles and triangles required more time for children to comprehend and that the students needed more guidance on how to clearly distinguish between shapes that appeared visually similar. Cycle II Results: Enhanced Activities and Improved Engagement. Cycle II focused on reinforcing the geometric shapes learned in Cycle I, while also introducing more complex shapes like ovals and irregular polygons. In this cycle, the teacher introduced additional environmental objects for exploration, including tree branches, fallen leaves, and other natural elements. The children were given more opportunities to engage in group activities, where they worked together to identify, collect, and sort objects according to their geometric shapes. During Cycle II, there was a marked increase in student participation and enthusiasm. The children were now more confident in identifying shapes, and some were able to clearly articulate the differences between shapes like rectangles and squares. Group activities played a significant role in boosting their understanding, as students collaborated with one another to discuss and compare the properties of different shapes. The teacher also provided more structured guidance on how to differentiate shapes based on their number of sides, angles, and other distinctive features.

Post-Test Results of Cycle II. After completing Cycle II, the teacher conducted another post-test to evaluate students' learning progress. The results showed a significant improvement in students' ability to recognize and differentiate geometric shapes. Approximately 85% of the students were able to correctly identify basic shapes such as squares, circles, triangles, and rectangles, as well as more complex shapes like ovals and irregular polygons. This improvement demonstrated that the use of environmental media combined with group activities had a positive impact on the children's understanding of

geometric concepts. The post-test results also indicated that students were more confident in distinguishing between shapes that had similar appearances. The children's ability to apply their knowledge of geometric shapes outside of the classroom environment also improved. For example, during the post-test, many students were able to recall and identify shapes they had observed in their surroundings, even outside of the school grounds.

Observational Results*. Throughout the study, the teacher made detailed observations of student behavior and engagement. In Cycle I, while most students were excited about the exploration activities, some appeared hesitant or unsure when asked to identify certain shapes. However, by Cycle II, there was a noticeable shift in engagement. The students were more eager to participate, and their responses became more accurate. In addition, group discussions helped students reinforce their understanding of shapes, and they started to take more initiative in finding shapes in their environment. The teacher also observed that the children were more motivated to learn when they were given the opportunity to interact with their peers during group activities. The collaborative nature of the tasks allowed students to share their findings and learn from one another. This peer-to-peer interaction contributed significantly to their cognitive development, as they were able to see different perspectives and reinforce their learning through discussions.

Teacher's Reflection on Overall Results. The teacher reflected that the use of environmental media was highly effective in engaging the children and helping them understand geometric shapes in a more meaningful and contextual way. The hands-on approach allowed the students to make connections between abstract geometric concepts and real-world objects, making the learning experience more relatable and enjoyable. However, the teacher also noted that while the children made significant progress, there were still some areas that required further development, especially in understanding more complex shapes. The teacher believed that the key to success in this research was the combination of visual, hands-on exploration and social learning through group activities. The opportunity for students to collaborate with their peers and discuss their findings played a crucial role in enhancing their cognitive abilities. Additionally, the teacher felt that using environmental media was a valuable approach that could be continued and developed further in future lessons.

The Classroom Action Research (CAR) conducted at RA Perwanida Blitar yielded positive results in improving children's cognitive abilities in recognizing geometric shapes using environmental media. The study was carried out in two cycles, with each cycle demonstrating notable improvements in student engagement and understanding. In Cycle I, the students were introduced to basic geometric shapes such as circles, squares, and triangles through hands-on exploration using natural objects. While the students showed enthusiasm and engagement, the results revealed that some students had difficulty differentiating between shapes that were visually similar, such as squares and rectangles. At the end of Cycle I, a post-test was administered to assess the students' progress. The results indicated a slight improvement in students' ability to recognize basic shapes, with about 60% of the students mastering shapes like circles and squares. However, only 40% of the students showed a strong understanding of triangles and rectangles. This suggested that while the hands-on approach was engaging, further reinforcement was needed to fully grasp the concepts, especially for shapes that were not as clearly defined in the natural environment.

In Cycle II, the introduction of more complex shapes like ovals and irregular polygons, along with the use of additional environmental objects, resulted in significant improvements. Group activities that encouraged peer interaction and collaborative learning were also incorporated. By the end of Cycle II, approximately 85% of the students were able to correctly identify basic and more complex geometric shapes, and they showed increased confidence in discussing the properties of shapes. The students' ability to apply their knowledge of geometric shapes in real-life contexts also improved. The

observational data gathered during the study showed an increase in student participation and confidence. In Cycle I, some students were hesitant to engage with the activities, but in Cycle II, most students eagerly participated in discussions and exploration. They began to articulate their understanding of geometric shapes more clearly, demonstrating a deeper cognitive understanding. Peer learning played a significant role, as students shared insights and learned from one another's perspectives, enhancing the overall learning experience. Overall, the results of the study indicated that the use of environmental media significantly contributed to improving the children's cognitive abilities in recognizing and understanding geometric shapes. The hands-on approach, combined with group activities and peer discussions, enhanced engagement, increased participation, and helped students develop a stronger grasp of geometric concepts. These results suggest that environmental media can be a highly effective tool in early childhood education for teaching abstract concepts like geometry.

Final Evaluation and Conclusion. In conclusion, the study demonstrated that the use of environmental media significantly improved students' cognitive abilities in recognizing and differentiating geometric shapes. The hands-on exploration activities provided children with concrete examples of shapes in the natural environment, which helped them make meaningful connections to the geometric concepts being taught. The increased student engagement and improved test scores indicated that environmental media, when combined with group activities and teacher guidance, was an effective tool for enhancing learning outcomes. While the study showed significant progress, the teacher identified that some students still required further practice to fully grasp the concept of more complex shapes. Therefore, the teacher recommended continuing the use of environmental media and providing additional opportunities for students to explore and practice identifying shapes in various contexts. This approach would further strengthen students' cognitive abilities and deepen their understanding of geometry.

DISCUSSION

The Classroom Action Research (CAR) conducted at RA Perwanida Blitar aimed at improving children's cognitive abilities in recognizing geometric shapes using environmental media yielded notable findings. This discussion explores the implications of the research, analyzes the results of each cycle, and provides insights into the effectiveness of using environmental media to enhance children's understanding of geometric concepts. Cycle I Analysis: Initial Challenges and Engagement. The first cycle revealed that while the use of environmental media significantly increased student engagement, challenges in fully grasping geometric concepts remained. In Cycle I, children were introduced to basic shapes like circles, squares, and triangles by exploring the environment. Although many students were initially excited about the hands-on activities, some struggled to distinguish between shapes that were visually similar. For example, children found it difficult to differentiate between a square and a rectangle, as both shapes appeared to have similar characteristics in the environment. This difficulty can be attributed to the complexity of abstract concepts for young learners. Young children often rely on visual features rather than logical reasoning to understand shapes. The shapes students encountered were often irregular in form, making it harder for them to recognize precise geometric characteristics such as the number of sides or angles. These challenges highlight the need for more structured guidance and additional practice, particularly for students who struggled to differentiate between shapes that shared similar attributes. Despite these challenges, the use of environmental media had a clear impact on increasing student engagement. The teacher observed that students were more focused and interested in the lesson because they were able to physically interact with the learning materials. The outdoor environment provided a sensory-rich experience that encouraged students to actively participate in the exploration process, which is crucial for enhancing young children's cognitive development.

Post-Test Reflection on Cycle I. At the end of Cycle I, the post-test showed some improvement in students' ability to recognize and identify basic shapes. Although the results indicated that students had learned to recognize basic geometric shapes like squares and circles, their ability to identify more complex shapes, such as rectangles and triangles, was less developed. This suggests that while the environmental media approach helped increase engagement and understanding, the children required more time and reinforcement to fully internalize the properties of each shape. The post-test results also highlighted a significant variance in student outcomes. Some students performed excellently, identifying shapes with ease, while others struggled, particularly when dealing with shapes that were not as clearly defined in the environment. This indicates that the learning process was not uniform across all students, which is a common challenge in early childhood education. Therefore, personalized approaches and differentiated instruction would be essential in future cycles to address the varying learning needs of students.

Reflection and Planning for Cycle II. After reviewing the results of Cycle I, the teacher concluded that the introduction of more complex shapes and a deeper exploration of the properties of geometric shapes were necessary to build on the progress made. While students showed enthusiasm for the environmental exploration activities, additional time was needed for them to internalize the characteristics of the shapes and apply them consistently. Furthermore, students needed more opportunities for discussion and interaction, which would allow them to solidify their understanding and help them articulate their learning more clearly. The teacher also noted that the children were still heavily reliant on visual cues when identifying shapes. This reliance on visual characteristics is typical for young learners, but it also suggests that the children may not yet fully understand the underlying abstract concepts of geometry. To address this, the teacher planned to introduce more varied activities in Cycle II, focusing on collaborative learning and deeper engagement with geometric properties.

Cycle II Analysis: Enhanced Engagement and Greater Understanding. In Cycle II, the teacher expanded the range of shapes to include ovals, irregular polygons, and more complex geometric structures. Students were introduced to new environmental objects, such as tree branches, fallen leaves, and rocks, which provided more opportunities for hands-on exploration. The group activities in Cycle II were designed to promote collaboration and peer learning, allowing students to share their findings and learn from one another. The results of Cycle II demonstrated a noticeable increase in both student engagement and understanding of geometric shapes. Group discussions encouraged students to think critically about the properties of shapes, and the collaborative nature of the tasks helped them articulate their thoughts and observations more clearly. The increased interaction among students allowed them to reinforce their understanding of geometric concepts, and the teacher observed that students were more confident in identifying shapes by the end of Cycle II. The success of Cycle II can also be attributed to the extended exposure to a broader variety of shapes and the more structured activities that involved problem-solving and collaboration. The students were encouraged to apply their knowledge of geometric shapes in more complex scenarios, which helped them strengthen their cognitive skills and deepen their understanding.

Improved Student Participation and Collaborative Learning. A key finding from Cycle II was the increase in student participation. In Cycle I, some students were hesitant to engage with the activities, but in Cycle II, students eagerly participated in group discussions and explorations. The collaborative activities helped students build confidence in their knowledge, as they worked together to identify and categorize shapes in the environment. The teacher noted that peer interactions played a crucial role in helping students learn from each other’s experiences and insights. This shift in participation reflects the power of social learning in early childhood education. When children are provided with opportunities to interact with their peers, they often develop a deeper understanding of the material. In this case, the group work encouraged students to think

critically about the geometric shapes they encountered and share their reasoning with others. This peer-to-peer learning was a valuable component of the study, as it allowed students to reinforce their learning through discussion and collective problem-solving.

Post-Test Results of Cycle II: Significant Improvement. The post-test results from Cycle II showed a marked improvement in student understanding. The percentage of students who could correctly identify basic shapes like squares, circles, and triangles increased to 85%, and their ability to recognize more complex shapes like ovals and irregular polygons also improved significantly. This improvement demonstrated that the combination of environmental media, hands-on exploration, and collaborative learning had a positive impact on students' cognitive development. The success of Cycle II also indicated that the students were not only able to identify shapes but also understood the properties that defined them. For example, many students could now explain why a square is different from a rectangle, or how a triangle differs from a circle, based on their characteristics. This ability to verbalize their understanding reflects the development of their cognitive skills, as students were now able to internalize and apply abstract concepts related to geometry.

The Role of Environmental Media in Learning. Throughout the research, environmental media played a critical role in enhancing the students' engagement and understanding of geometric shapes. The use of objects from the natural environment allowed students to interact directly with the shapes, providing them with concrete experiences that connected the abstract concepts of geometry to real-world objects. This hands-on approach helped students visualize and internalize geometric concepts in a way that traditional teaching methods could not achieve. Environmental media also contributed to the sensory learning experience, which is essential for young children. By engaging multiple senses—sight, touch, and even hearing in some cases—students were able to develop a more holistic understanding of shapes. This approach aligns with the principles of experiential learning, where students learn by doing, rather than just observing or listening.

Limitations and Areas for Improvement. Despite the positive results, the research highlighted some areas for improvement. One limitation was the varying learning pace of students. While many students demonstrated significant improvement, others still struggled with identifying and distinguishing certain shapes. This variability is common in early childhood education and underscores the importance of differentiated instruction. Future research could explore ways to tailor the learning experiences to meet the individual needs of students, such as through one-on-one instruction or more targeted activities. Another area for improvement was the complexity of the shapes introduced. While the students made significant progress in recognizing basic shapes, their understanding of more complex geometric shapes, such as irregular polygons, still required further reinforcement. Teachers could focus more on gradually introducing these complex shapes and provide more time for students to explore and practice.

Implications for Future Practice. The findings of this study have important implications for teaching geometric concepts in early childhood education. The use of environmental media proved to be an effective strategy for increasing student engagement and understanding of geometry. Teachers are encouraged to integrate natural elements and real-world objects into their lessons, as this approach helps students connect abstract concepts with tangible experiences. Furthermore, incorporating collaborative learning activities can enhance students' cognitive development by encouraging them to share ideas and learn from each other. The study also highlights the importance of scaffolding in early childhood education. While environmental media can help engage students, it is crucial to provide adequate guidance and support to ensure that all students are able to grasp the underlying concepts. Teachers should assess students' progress regularly and adapt their teaching strategies to address the varying needs of their students.

Conclusion. In conclusion, the use of environmental media in teaching geometric shapes was found to be a highly effective strategy for improving students' cognitive

abilities in recognizing and understanding geometric concepts. The combination of hands-on exploration, collaborative learning, and guided instruction helped students increase their engagement and deepen their understanding. Although challenges remain, particularly in addressing the varying learning paces of students, the results of this study suggest that environmental media can significantly enhance early childhood education in the area of geometry.

CONCLUSION

This Classroom Action Research (CAR) study aimed to improve the cognitive abilities of children in recognizing geometric shapes through the use of environmental media at RA Perwanida Blitar. The results demonstrated that integrating real-world objects into learning significantly enhanced student engagement and understanding of geometric concepts. The hands-on approach provided a more tangible learning experience, helping children connect abstract geometric ideas with the objects they encountered in their surroundings. The first cycle revealed initial challenges in recognizing and differentiating shapes, particularly for those that appeared visually similar, such as rectangles and squares. While students showed increased interest in the lesson due to the use of environmental media, more guidance and practice were required to help them internalize the properties of each shape. These findings highlighted the importance of providing more structured instruction alongside exploration activities. Cycle II showed substantial improvement in the students' ability to recognize geometric shapes. The introduction of more complex shapes like ovals and irregular polygons, combined with group activities that encouraged peer learning, contributed significantly to the students' cognitive development. The students became more confident in identifying shapes, and many were able to explain the differences between similar shapes, indicating a deeper understanding of geometric concepts. One of the key factors that contributed to the success of the research was the use of collaborative learning. The group activities allowed students to discuss their findings, share insights, and learn from one another. This peer interaction helped students reinforce their knowledge, which was crucial in developing their cognitive abilities in geometry. It also allowed the teacher to provide immediate support where necessary, addressing individual learning needs more effectively. Despite the positive results, some challenges remained, particularly in ensuring that all students, regardless of their individual learning pace, fully grasped more complex shapes. The study highlighted the importance of differentiated instruction and ongoing assessment to address the diverse learning needs of students. Future lessons could benefit from additional time and more targeted activities, especially for students who struggled with distinguishing shapes in the early stages. In conclusion, this research supports the idea that environmental media can be a powerful tool in early childhood education, particularly in the teaching of geometric concepts. By using real-world objects, teachers can engage students in a more interactive and meaningful learning process, helping them build stronger cognitive skills. The results suggest that a combination of exploration, collaborative learning, and guided instruction can enhance young children’s understanding of geometry, making the learning experience both enjoyable and effectiv.

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