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IMPROVING THE LOGICAL THINKING ABILITY OF EARLY CHILDREN IN GROUP A THROUGH CONCRETE GROUPING MEDIA IN TRISULA PERWARI KINDERGARTEN

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Abstract :

This study aims to improve the logical thinking ability of group A children through the use of **concrete media for classifying** at TK Trisula Perwari. Logical thinking skills are important to help children think systematically, recognize differences, and make simple classifications. The research was conducted using Classroom Action Research (CAR) with a cyclical model, carried out in two cycles, each consisting of two meetings. The subjects of the study were 8 children aged 4–5 years. Data were collected through observation and analyzed using a descriptive quantitative approach. The results showed that children's logical thinking abilities increased after applying concrete media for classifying. The indicator of naming groups based on criteria increased by 25% (2 children), distinguishing large and small sizes rose by 25% (2 children), classifying objects by category improved by 37.5% (3 children), arranging simple patterns increased by 37.5% (3 children), and identifying the function of objects by category rose by 25% (2 children). By the end of the second cycle, all indicators had exceeded the minimum success criteria of 75%. It can be concluded that the use of concrete media for classifying is effective in enhancing the logical thinking ability of group A children at TK Trisula Perwari.

Keywords: *logical thinking, early childhood, concrete media, classifying.*

Abstrak :

Penelitian ini bertujuan untuk meningkatkan kemampuan berpikir logis anak kelompok A melalui penerapan media konkret mengelompokkan di TK Trisula Perwari Purwakarta. Kemampuan berpikir logis berperan penting dalam membantu anak berpikir runtut, mengenali perbedaan, dan melakukan klasifikasi sederhana. Jenis penelitian yang digunakan adalah Penelitian Tindakan Kelas (PTK) dengan model siklus, yang dilaksanakan dalam dua siklus dan masing-masing siklus terdiri dari dua kali pertemuan. Subjek penelitian melibatkan 8 anak usia 4–5 tahun. Data diperoleh melalui observasi dan dianalisis dengan pendekatan deskriptif kuantitatif. Hasil penelitian memperlihatkan adanya perkembangan kemampuan berpikir logis anak setelah penggunaan media konkret mengelompokkan. Indikator menyebutkan kelompok berdasarkan kriteria meningkat sebesar 25% (2 anak), membedakan ukuran besar dan kecil naik 25% (2 anak), mengelompokkan objek sesuai kategori bertambah 37,5% (3 anak), menyusun pola sederhana meningkat 37,5% (3 anak), serta menyebutkan fungsi objek sesuai kategorinya naik 25% (2 anak). Pada akhir siklus II, seluruh indikator sudah melampaui batas keberhasilan minimal 75%. Dengan demikian dapat disimpulkan bahwa penggunaan media konkret mengelompokkan mampu meningkatkan kemampuan berpikir logis anak kelompok A di TK Trisula Perwari secara signifikan.

Kata Kunci: *berpikir logis, anak usia dini, media konkret, mengelompokkan*

INTRODUCTION

Early childhood education is a crucial period in cognitive development, as it is at this stage that children begin to develop fundamental thinking skills such as classifying, grouping, and simple reasoning. Providing learning experiences through concrete activities and utilizing appropriate media plays a crucial role in stimulating children's logical thinking skills (Kurniawati, Surifah, Tohani, & Rolina, 2024). Previous research also shows that the use of tangible media, such as educational blocks and number puzzles, can help improve the logical thinking skills of children aged 4–5 years (Masfufah & Khalif Alam, 2024; Khoirussifa, 2022). Therefore, kindergarten teachers need to develop concrete media-based learning so that children gain hands-on learning experiences, not just through verbal explanations or worksheets.

Logical thinking skills in early childhood do not emerge spontaneously but develop through stimulation provided during the learning process. Children need to be encouraged to practice differentiating, classifying, and ordering objects based on concrete experiences to further hone their thinking skills. Research shows that grouping activities involving real objects can help children understand the concepts of differences and similarities, while also fostering a foundation for simple mathematical understanding (Putri & Hasanah, 2023; Safitri, 2021). With real-life activity-based learning, children more easily connect new knowledge with everyday experiences, thus optimally developing their logical thinking skills. In practice, some teachers still predominantly use lecture methods or provide worksheets, thus preventing children from gaining real-world experience in classification and grouping activities. This impacts the suboptimal development of logical thinking skills, particularly in children aged 4–5 years, a crucial period for building foundational thinking skills. Several studies have shown that the continuous application of concrete media can increase children's participation in learning and support their cognitive development (Ananda & Zulminiati, 2020; Rohmah & Lestari, 2022). Therefore, utilizing concrete media in learning strategies is a relevant step to encourage the growth of logical thinking skills in early childhood.

One way teachers can stimulate logical thinking in early childhood is through grouping activities using concrete media. This activity allows children to directly observe, touch, and differentiate objects based on their color, shape, size, and function. Through these experiences, children not only understand the concepts of similarities and differences but also begin to develop more organized thought patterns. Recent research shows that the use of concrete media in classification activities is effective in improving simple analytical skills while strengthening fundamental mathematical skills in early childhood (Nugraha & Hidayati, 2021; Fitriani & Putra, 2023).

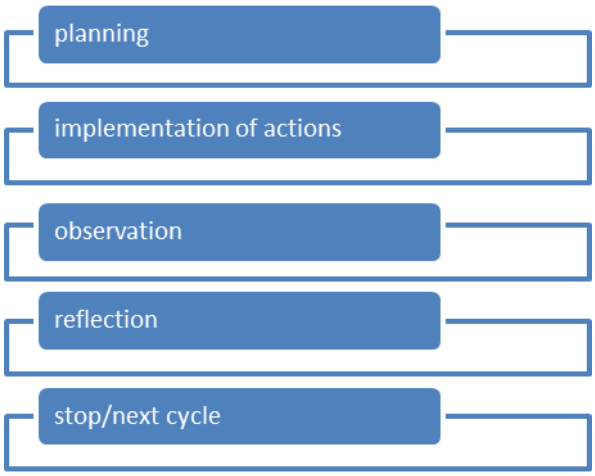
Considering the importance of mastering logical thinking skills for early childhood and the still minimal use of concrete media in the learning process, a systematically designed study is needed to address these issues. Concrete grouping media is considered appropriate because it can provide a real learning experience while encouraging children to play an active role in discovering concepts independently. Through the use of this media, children are expected to be able to develop logical thinking skills, starting from making distinctions, classifications, to arranging simple patterns. Based on that, this study is directed at efforts to improve the logical thinking skills of children in group A through the application of concrete grouping media in Trisula Perwari Kindergarten.

RESEARCH METHOD

This research applies the method Classroom Action Research (CAR) with This study applies the Classroom Action Research (CAR) method using the spiral model from Kemmis and McTaggart which includes four main steps, namely the planning stage, action implementation, observation, and reflection. The research activities were conducted at Trisula Perwari Kindergarten with 8 group A children aged 4-5 years as subjects. This research was conducted at Trisula Perwari Kindergarten, with a two-month implementation period, namely from August to September. The selection of this location was based on the consideration that the school has student characteristics that match the research needs, especially group A children aged 4-5 years who are at the stage of logical thinking development. In addition, teachers at this kindergarten are also open to the application of new learning media so as to support the smooth running of the classroom action research process.

This study used the cycle design from Kemmis and McTaggart, which involves four main stages: planning, action, observation, and reflection. In the planning stage, the researcher designed learning activities using concrete media and groupings that were tailored to the indicators of children's logical thinking abilities. The action stage was carried out by implementing these activities in the classroom according to the plan that had been made. Next, in the observation stage, the researcher and the teacher monitored the children's learning activities and recorded the development of logical thinking abilities that emerged. The reflection stage was used to review the results obtained in each cycle, assess successes and obstacles, and develop corrective steps for the next cycle. This study was conducted in two cycles, where each cycle consisted of two meetings. To clarify the flow of the classroom action research implementation used, the following is a diagram of the research cycle model from Kemmis and McTaggart: To clarify the flow of the classroom action research implementation used, the following is a diagram of the research cycle model from Kemmis and McTaggart: This study used the cycle design from Kemmis and McTaggart, which involves four main stages: planning, action, observation, and reflection. In the planning stage, the researcher designed learning activities using concrete media and groupings that were tailored to the indicators of children's logical thinking abilities. The action stage was carried out by implementing these activities in the classroom according to the plan that had been made. Next, in the observation stage, the researcher and the teacher monitored the children's learning activities and recorded the development of logical thinking abilities that emerged. The reflection stage was used to review the results obtained in each cycle, assess successes and obstacles, and develop corrective steps for the next cycle. This study was conducted in two cycles, where each cycle consisted of two meetings. To clarify the flow of the classroom action research implementation used, the following is a diagram of the research cycle model from Kemmis and McTaggart: To clarify the flow of the classroom action research implementation used, the following is a diagram of the research cycle model from Kemmis and McTaggart:

Table : 1 Kemmis and McTaggart Model



Data collection in this study was conducted through observation, documentation, and field notes. Observations were used to measure children's logical thinking skills according to predetermined indicators, such as the ability to differentiate, group, and arrange simple patterns. Meanwhile, documentation in the form of activity photographs served as supporting evidence for the observations. Field notes taken by the teacher were also used to record children's responses during the learning process.

The instrument used in this study was a simple observation sheet containing indicators of children's logical thinking abilities, such as differentiating, grouping, and arranging simple patterns. Assessment was conducted by giving marks based on the children's achievements during the activities. Additionally, field notes and photographic documentation were used as supporting instruments to supplement the observation data. The format of the observation sheet used in this study is presented in the following table.

Table : 2 Child Assessment Observation Instruments

No	**Child's Name**	**Indicators of Children's Logical Thinking Ability**											
		Children are able to differentiate objects based on categories				Children are able to group objects according to their characteristics				**Children are able to construct simple patterns**			
		E E	**M B**	**B S H**	**B S B**	**B B**	**M B**	**B S H**	**B S B**	**B B**	**M B**	**B S H**	**B S B**
1	R R S												
2	A H N												
3	Z S A												

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4	M T A												
5	M E Y												
6	S K U												
7	Z A N												
8	**L A**												

Information:

- BB = Not Yet Developed
- MB = Starting to Develop
- BSH = Developing as Expected
- BSB = Developing Very Well

To assess the success of this research, achievement indicators were established to serve as a benchmark for the effectiveness of the activities. Classroom Action Research is considered successful if at least 80% of children demonstrate improved classical logical thinking skills, as measured through observation and evaluation results during learning activities using concrete media. Achievement indicators include children's ability to differentiate objects, group them, and arrange simple patterns according to the assigned activities.

Quantitative data was obtained from the child observation sheet and analyzed using percentages, with the formula:

$$P = \frac{f}{n} x\ 100\ \%$$

Information:
P = Percentage
f = Number of Children Who Completed the Course n = Number of Respondents/Child
With the following achievement criteria:

Table : 3 Learning Outcome Achievement Criteria

No	Interval	Information
1	81-100%	**Very well**
2	61-80%	**Good**
3	41-60%	**Enough**
4	21-40%	**Not enough**
5	**0-20%**	**Very less**

This research was conducted on 8 children in group A aged 4–5 years at Trisula Perwari Kindergarten using the Kemmis and McTaggart spiral model, which consists of four main stages: planning, action implementation, observation, and reflection. In the planning stage, the researcher prepared a daily activity plan containing a series of learning activities to improve children's logical thinking skills, prepared concrete media as aids in grouping activities, and compiled an observation sheet to assess children's achievements during the learning process. The actions were implemented according to a predetermined plan, with children participating in grouping and simple pattern-making activities under teacher guidance. Observations were conducted systematically using observation sheets, field notes, and photo documentation to record the learning process and the achievement of children's logical thinking skills. After each cycle, the researcher and teacher conducted a reflection to review the observation results, evaluate the strengths and weaknesses of the activity implementation, and plan improvement strategies for the next cycle until the children's logical thinking skills improved in accordance with the research objectives.

FINDINGS AND DISCUSSION

A. RESEARCH RESULTS

This study aims to improve the logical thinking skills of group A children aged 4–5 years at Trisula Perwari Kindergarten through grouping and simple pattern-making activities with the help of concrete media. Data collection was conducted using observation sheets, field notes, and photo documentation. The presentation of the research results focuses on the children's achievements in each cycle, with particular attention to indicators of the ability to differentiate, group, and arrange simple patterns.

1. Children's Abilities in Cycle 1

In the first cycle, learning at Trisula Perwari Kindergarten focused on developing children's logical thinking skills through grouping and simple pattern-making activities using concrete media. Children participated in these activities under teacher guidance, learning to differentiate objects, group them according to categories, and construct simple patterns based on the instructions provided.

Observations showed that some children were able to complete the tasks correctly, while others still needed additional guidance to understand the instructions and complete the patterns. Based on the observation sheet, most children's achievements in the first cycle fell between the Starting to Develop (MB) and Developing as Expected (BSH) categories. During the activities, the children appeared enthusiastic, actively engaged in discussions, and were beginning to develop cooperatively, despite differences in ability levels. Children's ability to differentiate, group, and arrange simple patterns is used as an indicator of the success of the teacher's actions during the learning process. To assess the extent to which children's logical thinking skills have improved after implementing learning using concrete media, the observation results are explained in the following description.

Table : 4 Abilities in cycle 1

No	Child's Name	Indicators of Children's Logical Thinking Ability											
		Children are able to differentiate objects based on categories				Children are able to group objects according to their characteristics				**Children are able to arrange simple patterns**			
		BB	MB	BSH	BSB	BB	MB	BSH	BSB	BB	MB	BSH	**BSB**
1	RRS	✓				✓				✓			
2	AHN			✓			✓				✓		
3	ZSA		✓			✓				✓			
4	MTA		✓					✓				✓	
5	MEY		✓			✓					✓		
6	SKU		✓					✓		✓			
7	ZAN		✓			✓					✓		
8	MLA	✓				✓				✓			
	Amount	**2**	**5**	**1**	**0**	**5**	**1**	**2**	**0**	**4**	**3**	**1**	**0**

Table : 5 Accumulation of Children's Abilities in Cycle 1

No	Indicator	F1	F2	F3	F4	Number of Children (n)
		BB	MB	BSH	BSB	(P)%
1.	Children are	2	5	1	0	8

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	able to differentiate objects based on categories	25%	62,5%	12,5%	0%	100%
2.	Children are able to group objects according to their characteristics	5	1	2	0	8
		62,5%	12,5%	25%	0%	100%
3.	Children are able to construct simple patterns	4	3	1	0	8
		50%	37,5%	12,5%	0%	100%

Based on the table, it can be seen that in the indicator of the ability to distinguish objects by category, the majority of children are at the Beginning to Develop (MB) stage, namely 5 children (62.5%). In addition, there are still 2 children (25%) who are at the Not Yet Developing (BB) stage, and only 1 child (12.5%) has reached the Developing According to Expectations (BSH) stage. These findings indicate that children's skills in distinguishing objects are beginning to emerge, but most still need guidance from teachers.

For the ability to group objects according to their characteristics, the majority of children (5 children, 62.5%) were in the BB category. Meanwhile, one child (12.5%) was in the MB category, and two children (25%) had reached the BSH category. This indicates that most children still have difficulty grouping objects correctly, so teachers need to provide more intensive guidance.

Furthermore, in the indicator of the ability to construct simple patterns, there are 4 children (50%) who are still in the BB category, 3 children (37.5%) in the MB category, and 1 child (12.5%) has been able to reach the BSH category. These results show that some children are beginning to be able to understand the concept of constructing patterns, although they still need help to be able to construct them more systematically.

Overall, the results of the first cycle indicate that children's logical thinking skills, achieved through learning with concrete media, are mostly still at the BB and MB levels. Therefore, improvements to learning strategies are needed in the next cycle to increase the number of children achieving the BSH and BSB categories.

Table : 6 Children's Ability Level in Cycle 1

No	Indicator	F3	F4	Jumlah	Results	Note
		BSH	BSB	(P)%		
1	Children are able to	1	0	1	12,5%	

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	differentiate objects based on categories					
2	Children are able to group objects according to their characteristics	2	0	2	25%	
3	Children are able to construct simple patterns	1	0	1	12,5%	
	Average				16,6%	Kurang

Referring to Table 4.3, children's abilities in cycle I were still relatively low. In the first indicator, namely the ability to distinguish objects based on categories, only 1 child (12.5%) achieved the BSH criteria. Furthermore, in the second indicator, namely the ability to group objects according to characteristics, there were 2 children (25%) who were in the BSH category. As for the third indicator, the ability to compose simple patterns, only 1 child (12.5%) managed to achieve this criterion. Overall, the average achievement of children's abilities in cycle I only reached 16.6% with the Poor category. These results indicate that children's abilities still need to be improved, so that learning actions must be continued to the next cycle to obtain more optimal results.

2. Children's Abilities in Cycle 2

In the second cycle, learning activities at Trisula Perwari Kindergarten focused on refining teaching strategies while still utilizing concrete media, but incorporating a variety of more engaging and challenging activities. Children were given more opportunities to practice distinguishing objects, grouping them according to their characteristics, and constructing simple patterns independently, all with more intensive teacher guidance.

During the learning process, it was apparent that the children were becoming more confident and more accustomed to following the stages of the activity. Observations showed progress, with most children able to understand directions well and complete tasks with greater independence than in the previous cycle. Children who initially needed more guidance also appeared to experience improvements, for example, in their ability to group and arrange patterns more systematically..

Based on observational records, children's achievements in the second cycle have begun to move toward the Developing as Expected (BSH)

category, and some have even reached Very Good Development (BSB). This proves that the application of concrete media with adjusted learning strategies has a positive impact on improving children's logical thinking skills. The results of these observations are explained in the following description.

Table : 7 Abilities in cycle 2

No	Child's Name	Indicators of Children's Logical Thinking Ability											
		Children are able to differentiate objects based on categories				Children are able to group objects according to their characteristics				**Children are able to construct simple patterns**			
		BB	MB	BSH	BSB	BB	MB	BSH	BSB	BB	MB	BSH	**BSB**
1	R R S		✓				✓					✓	
2	A H N				✓		✓					✓	
3	Z S A			✓			✓					✓	
4	M T A				✓				✓				✓
5	M E Y			✓				✓				✓	
6	S K U				✓			✓				✓	
7	Z A N				✓			✓				✓	
8	M L A		✓				✓					✓	
	Jumlah	**0**	**2**	**2**	**4**	**0**	**4**	**3**	**1**	**0**	**0**	**7**	**1**

Table : 8 Accumulation of Children's Abilities in Cycle 2

No	Indicator	F1	F2	F3	F4	Number of Children (n)
		BB	MB	BSH	BSB	(P)%

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1.	Children are able to differentiate objects based on categories	0	2	2	4	8
		0%	25%	25%	50%	100%
2.	Children are able to group objects according to their characteristics	0	4	3	1	8
		0%	50%	37,5%	12.5%	100%
3.	Children are able to arrange simple patterns	0	0	7	1	8
		0%	0%	87,5%	12,5%	100%

Based on the table presented, there is a clear improvement compared to the results in cycle I. For the first indicator, namely the ability to distinguish objects based on categories, it was recorded that 2 children (25%) were in the MB category, 2 other children (25%) had reached BSH, and 4 children (50%) had reached the BSB category. These findings indicate that the majority of children are able to distinguish objects better without much teacher assistance.

In the second indicator, namely the ability to group objects according to their characteristics, the results showed that 4 children (50%) were in the MB category, 3 children (37.5%) were already in the BSH category, and 1 child (12.5%) had reached the BSB category. This shows that most children have made progress, although some still require additional guidance.

Meanwhile, in the third indicator, namely the ability to construct simple patterns, most children demonstrated excellent results. Seven children (87.5%) achieved the BSH category, and one child (12.5%) achieved the BSB category. This demonstrates that almost all children are able to construct simple patterns correctly, orderly, and consistently.

Overall, the achievements in cycle II showed significant progress, with most children in the BSH and BSB categories. Therefore, it can be concluded that the implementation of improved learning strategies using more varied and engaging concrete media has a positive impact on improving children's logical thinking skills. With the improvement in each indicator, it can be concluded that the implementation of learning strategies in cycle II has provided more optimal results compared to cycle I. To see more details about the level of achievement of children's logical thinking skills, the following is a recapitulation in Table 4.6 regarding the level of children's abilities in cycle II.

Table : 9 Children's Ability Level in Cycle 2

No	**Indicator**	**F3**	**F4**	**Amount**	**Results**	**Note**
		BSH	BSB	(P)%		

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1	Children are able to differentiate objects based on categories	2	4	6	75%	
2	Anak mampu mengelompokkan objek sesuai karakteristik	3	1	4	50%	
3	Children are able to group objects according to their characteristics	7	1	8	100%	
	Average				75%	Good

Based on Table 4.6, children's logical thinking skills in cycle II showed significant improvement. In the first indicator, namely the ability to differentiate objects by category, six children or 75% have achieved the criteria of Developing According to Expectations (BSH) or Developing Very Well (BSB). In the second indicator, namely the ability to group objects according to characteristics, there were four children or 50% who were able to do it well, although some others still needed guidance from the teacher. Meanwhile, the third indicator, namely the ability to compose simple patterns, achieved the highest results, where all children (100%) managed to achieve the minimum category of BSH. On average, the achievement of children's abilities in cycle II was 75% with the category of "Good". These results indicate that the application of concrete media with more varied learning strategies is effective in improving children's logical thinking skills at Trisula Perwari Kindergarten.

B. DISCUSSION

1. Improving Children's Logical thinking Skills

This study demonstrated an improvement in children's logical thinking skills after learning using concrete media was implemented through two cycles. In the first cycle, children's achievement was still relatively low because most were just beginning to learn about differentiating, grouping, and arranging simple patterns. After improvements were made in the second cycle by adding a variety of more challenging activities, more optimal development was observed in the children. This condition aligns with Piaget's theory, as cited by Sujiono (2019), which states that early childhood is in the preoperational stage and therefore requires real-world experiences through concrete objects to build the foundation of logical thinking. These results are also supported by research by Putri and Rachmawati (2021), who found that the use of concrete media is effective in improving children's logical thinking skills because it helps them understand abstract concepts through direct experience.

2. **Ability to Distinguish Objects Based on Category**
   For the first indicator, namely children's ability to differentiate objects based on categories, the results of the study showed a development from cycle I to cycle II. In cycle I, most children were still in the MB category, some even BB, so their ability to differentiate objects was still limited. However, in cycle II, improvements began to be seen, with most children being able to correctly identify differences in objects, albeit still with teacher guidance. This is in line with Piaget's theory in Santrock (2018), which explains that early childhood is in the preoperational stage, so learning through direct experience with concrete objects helps them recognize differences based on certain characteristics. These results are also supported by research by Dewi & Kurniawati (2020), which found that the use of concrete media can make it easier for children to group and differentiate objects according to relevant categories. Thus, the application of concrete media-based learning strategies has proven effective in improving children's abilities in this aspect.
3. **Ability to Group Objects According to Characteristics**
   In the second indicator, namely children's skills in grouping objects based on certain characteristics, there appears to be a significant improvement. While in cycle I, most children were still in the BB and MB categories because they were unable to understand the basic principles of grouping, in cycle II, many children were able to group objects more accurately according to similarities in color, size, and shape. This demonstrates that learning using concrete media can provide direct experiences that help children understand the concept of classification. This aligns with Vygotsky's view in Lestari (2021), which emphasizes that children's learning development will be more optimal through social interaction with teachers through a scaffolding process, namely providing gradual assistance until children are able to complete tasks independently. The results of research by Pratiwi & Handayani (2022) also support this finding, stating that the use of real media can improve children's skills in grouping objects because they can directly see, feel, and compare the differences and similarities. Thus, the learning strategies implemented in cycle II have been proven to improve children's achievement.
4. **Ability to Create Simple Patterns**
   The third indicator, namely children's ability to construct simple patterns, showed the most significant development compared to the other indicators. While in cycle I, many children were still in the BB and MB categories due to frequent errors in continuing the pattern sequence, in cycle II, almost all children were able to construct patterns more consistently and correctly. The use of concrete media proved very helpful, as children could directly see the relationships between objects and understand the concept of regularity. This is in accordance with Piaget's theory in Sujiono (2019), which explains that preoperational children need direct experience through concrete objects to build their logical thinking structures. Research conducted by Wulandari & Sari (2020) also supports these results, where the activity of constructing patterns using real media was shown to improve children's systematic thinking skills and cognitive skills. Thus, the learning

strategy implemented in cycle II was effective in developing children's skills in understanding pattern regularity.

In general, the results of cycle II showed a significant improvement in the logical thinking skills of children at Trisula Perwari Kindergarten. This improvement was evident in the three observed indicators: the ability to differentiate objects, group them based on characteristics, and construct simple patterns. While in cycle I, most children were still in the BB and MB categories, in cycle II, the majority of children had reached the BSH and even BSB categories. This proves that the use of concrete media combined with varied learning strategies can provide more meaningful learning experiences for children. These results align with Piaget's opinion in Sujiono (2019), which emphasizes the importance of children's interactions with real objects in developing their thinking structures. These findings are also supported by research by Putri & Rachmawati (2021) and Wulandari & Sari (2020), which shows that concrete media contributes significantly to the development of children's logical thinking skills and systematic understanding. Therefore, it can be concluded that the actions taken in cycle II successfully improved learning outcomes in accordance with the research objectives.

CONCLUSION

From the results of classroom action research at Trisula Perwari Kindergarten, Purwakarta, it can be concluded that the application of learning using concrete media through grouping activities and arranging simple patterns has been proven to be able to improve the logical thinking skills of group A children aged 4-5 years. In the first cycle, most children were still in the Not Yet Developing (BB) and Beginning to Develop (MB) categories, so they still needed intensive guidance and direction from the teacher. After the learning strategy was improved in the second cycle by presenting more varied and challenging activities, most children succeeded in achieving the Developing According to Expectations (BSH) category, even some children achieved Very Good Development (BSB), especially in the ability to arrange simple patterns. These findings indicate that direct experience with concrete media has a real positive impact on the development of children's logical thinking skills. Thus, the use of concrete media combined with creative and adaptive learning strategies can help children understand the concept of logical thinking in a more natural, enjoyable, and consistent way.

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