



The Effectiveness of Educational Play Tools Based on Local Plants (Passion Fruit) in Enhancing Cognitive Abilities in Early Childhood Children at TK Kasih Ibu Talang Babungo

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Abstract

Early childhood is a crucial period in individual development, during which appropriate educational stimulation can significantly influence cognitive growth. This study was motivated by the low cognitive abilities observed in children at TK Kasih Ibu Talang Babungo, characterized by limited creativity and passive learning interactions. The purpose of this research was to enhance the cognitive abilities of children aged 5–6 years through the use of Educational Play Tools (APE) based on local passion fruit plants. This study employed a Classroom Action Research (PTK) approach following the Kemmis and McTaggart model, implemented in two cycles. Each cycle included four stages: planning, acting, observing, and reflecting. The research subjects consisted of 13 children, and data were collected through observation, interviews, and documentation. The results showed a significant improvement in the children's cognitive abilities, with classical completeness percentages increasing from 17.95% in the pre-cycle, to 48.72% in cycle I, and reaching 87.18% in cycle II. Thus, the use of APE based on local passion fruit plants proved effective in stimulating children's thinking skills, shape recognition, and creativity.

Keywords: Early Childhood, Cognitive Abilities, Educational Play Tools (APE), Local Passion Fruit Plants, Classroom Action Research (PTK).

1. Introduction

The early childhood period is often referred to as the golden age—the most potential period in a person's life. During this time, children possess high curiosity, a great eagerness to learn, and the ability to absorb various experiences from their environment very quickly. Every activity a child engages in, whether through play, conversation, or exploration of surrounding objects, can bring about significant changes in their development. Early childhood children tend to learn more easily through direct interaction with concrete objects and other people rather than merely through abstract symbols or concepts. Therefore, the teacher, as an educator, plays a crucial role in creating a learning atmosphere that is creative, enjoyable, and meaningful for children.

Teachers at the early childhood education level are not only tasked with teaching in the sense of delivering material but also function as genuine educators who guide, mentor, and stimulate the potential within each child. A creative teacher will be able to inspire their students to think originally, dare to try new things, and express their ideas freely. Creative teachers are usually capable of combining various learning approaches, both teacher-centered and student-centered, to

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create engaging learning activities. Thus, the process of identifying students' creative potential will emerge more easily under the guidance of a teacher who is also creative and innovative.

As explained in Law Number 20 of 2003 concerning the National Education System, early childhood education (ECE) is a developmental effort aimed at children from birth up to six years old, conducted through the provision of educational stimuli to aid the physical and spiritual growth and development of the child so they are prepared to enter further levels of education. Based on this legal foundation, it is clear that education in the early stages of a child's life must be directed toward the development of all aspects of development in a holistic and balanced manner.

The aspects of child development include moral and religious values, cognitive, language, physical-motoric, social-emotional, and art. All these aspects are interrelated and cannot be separated from one another. The development of each aspect needs to be carried out proportionally so that the child's potential can be optimally actualized. One aspect that plays an important role in supporting a child's future success is creativity or art, because creativity can help children think critically, find solutions, and develop self-confidence.

Children with high creativity usually tend to use most of their time to play while creating. They don't just use existing toys but try to make new games based on ideas that emerge in their minds. This activity is called creative play, where children are free to experiment with objects, colors, shapes, and functions. Conversely, children who are less creative usually tend to be passive and only follow predefined patterns or forms of play. Therefore, the more often children are given the opportunity to create and experiment, the higher their level of creativity will be.

In kindergarten learning, the development of children's creativity must be carried out through active and passive play activities. Active creative play includes activities such as free play, constructive play, role play, exploration, playing music, and collecting objects from the natural surroundings. Meanwhile, passive creative play encompasses activities such as listening to stories, watching educational videos, reading children's comics or magazines, and listening to music. Both types of activities are equally important in building the foundation for children's thinking, language, and socialization skills.

In the field of developmental psychology, a child's cognitive aspect cannot be separated from social and environmental factors. Lev Vygotsky, a developmental psychologist, emphasized that a child's cognitive ability is strongly influenced by social interaction, especially with adults and peers. Vygotsky introduced the concept of the Zone of Proximal Development (ZPD), which is the distance between a child's current ability and the potential that can be achieved through help and guidance. Meanwhile, Jean Piaget explained that a child's cognitive development occurs through systematic stages, ranging from the sensorimotor, preoperational, concrete operational, to formal operational stages.

Based on observations conducted at TK Kasih Ibu Talang Babungo, it was found that the creativity level of children in Group B was not yet optimally developed. The children did not yet demonstrate works that reflected creative and independent thinking skills. This is suspected to be due to the lack of creativity of the teachers in designing engaging and challenging learning

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activities. Furthermore, the limited availability of educational toys in the school is also an inhibiting factor. Most of the toys used are manufactured products, so children do not have the opportunity to create or imagine. In fact, when the teacher asks children to make a new shape, most children immediately say "I can't" before even trying.

This condition indicates that the children's cognitive abilities have not developed optimally, as they do not yet possess a strong curiosity about their surroundings. The children tend to be passive and less interested in exploring objects around them. To overcome this, a learning strategy is needed that can actively stimulate the child's thinking power through enjoyable and meaningful activities.

One effective way to enhance children's cognitive abilities is through the use of Educational Play Tools (Alat Permainan Edukatif - APE). APE are learning media designed to help children develop various aspects of development, especially cognitive, motoric, language, social, and emotional. APE does not have to be expensive factory-made products. In fact, simple play tools made from natural materials in the child's surrounding environment can provide the same, or even greater, benefits, as children can recognize local resources while learning to utilize them.

The natural and social environment is a natural laboratory for children to experiment and learn. Various objects found around the home, school, or park can be processed into engaging learning media. For example, the use of local plant materials like passion fruit (markisa) can serve as an environmentally friendly and economical APE alternative. Through activities like this, children can learn to recognize the object's shape, texture, color, and function, while honing their logical thinking and imaginative skills.

The use of local plant-based APE (passion fruit) does not only function as a play medium but also as a tool to improve children's observation, classification, and problem-solving skills. Children can be invited to observe the structure of the passion fruit, count its seeds, mix its colors to create artwork, or even make simple constructive games from parts of the plant. Through this activity, children not only learn about science and the environment but also develop their cognitive abilities holistically.

Based on the description of the problems above, the researcher considers it important to make efforts for improvement in enhancing all aspects of early childhood development, especially the cognitive aspect, which is the foundation for developing higher-order thinking skills in the future. One relevant and contextual learning innovation is the application of Educational Play Tools (APE) based on local plants, namely passion fruit. By utilizing local resources, the teacher not only teaches creativity to children but also instills the values of environmental love and self-reliance.

Therefore, the researcher feels it is necessary to conduct a Classroom Action Research (CAR or Penelitian Tindakan Kelas – PTK) to examine the extent of the effectiveness of local plant-based Educational Play Tools (passion fruit) in improving the cognitive abilities of early childhood children at TK Kasih Ibu Talang Babungo. The findings are expected to uncover an innovative, economical, and effective learning strategy for fostering children's intellectual





potential optimally, which is then summarized in the research title: "The Effectiveness of Local Plant-Based Educational Play Tools (Passion Fruit) for Improving the Cognitive Ability of Early Childhood Children at TK Kasih Ibu."

2. Research Method

This study uses the Classroom Action Research (CAR or PTK) approach, which is a research method conducted directly in the classroom setting with the primary goal of improving and enhancing the quality of the learning process. CAR is utilized to develop and improve learning strategies to increase the creativity and cognitive abilities of children aged 5–6 years at TK Kasih Ibu. According to Suharsimi in Conny, CAR involves three essential elements: research, action, and class. Research is defined as a systematic process to find solutions to a problem, conducted in a measurable and empirical manner. Action refers to the form of treatment or intervention carried out by the researcher or teacher to improve teaching practices in the class, while class is the natural setting where the learning process takes place without manipulation or situation engineering. This means that CAR is not conducted in an experimental room but in the actual classroom, making the results more relevant to real-world conditions.

Wibawa and Suhardjono in Conny explain that classroom action research is a form of research that originates from actual problems faced by teachers in teaching and learning activities. The researcher and the teacher play an active role in designing, implementing, and evaluating the actions taken so that the results can directly improve learning performance. Benyamin Situmorang also adds that action research aims to develop more effective and efficient working methods through collaboration between the researcher and field practitioners. In other words, this research does not only focus on theory but also on practical action to continuously improve the learning situation. CAR emphasizes the process of teacher self-reflection on their teaching practices, where every action taken is observed and analyzed in depth to find solutions to the learning problems faced. Through this reflective and collaborative approach, the teacher can find the best way to increase student engagement and learning outcomes.

Thus, it can be concluded that Classroom Action Research (CAR) is a scientific process designed to solve learning problems that occur in the classroom through a systematic, reflective, and planned series of actions. CAR is carried out in stages over several cycles, and each cycle consists of four main components: planning, acting (implementation of the action), observing, and reflecting. The research model used refers to the Kemmis and McTaggart model, which emphasizes the importance of continuous evaluation of the actions taken. By using this approach, the learning process is expected to become more effective, creative, and contextual, especially in developing children's cognitive abilities through Educational Play Tools (APE) based on local plants like passion fruit. This research does not only aim to produce temporary improvements but also to create sustainable learning innovations that are relevant to the needs of early childhood children.





3. Results and Discussions

Table 1. Data of group B student aged 5-6 years old

Name	Child code
Aiza Mardiah	01
Alfis Pratama	02
Anindita Keisha Putri	03
Aretha Khanza Zayna	04
Arsyila Ramadhani	05
Arunika Alinzki	06
Hafizah Safira Kirana	07
Hasna Fatmawati	08
Ilmi Latifha	09
Jazlan Affan Alfariq	010
Khairunika Azizah	011
Lathif Ilmi	012
Muhammad Azhari	013

Table 1 displays the demographic data of Group B students, consisting of 13 children, with a breakdown of 9 girls and 4 boys. This data indicates that the proportion of female students is more dominant than male students, thus the gender difference needs to be considered in the analysis of cognitive ability and creativity. This categorization is important because cognitive development and creativity may differ between genders in early childhood, for example, in verbal skills and fine motor skills. By knowing the number and gender of the students, the teacher can plan more appropriate learning interventions, including adjusting the passion fruit-based APE activities to meet the individual needs of each child. This initial analysis of demographic data serves as the basis for the creative and cognitive observations to be carried out, as the initial classroom condition, the number of students, and the children's characteristics will affect the implementation of educational play-based learning.

Table 2. Results of Children's Pre-Cycle Creativity Observation

Child code	Know the characteristics of passion fruit	Doing APE activities	Tell the knowledge	Total score	Value (%)
01	$\sqrt{}$		$\sqrt{}$	3	25
02		$\sqrt{}$	$\sqrt{}$	7	58,33
03		$\sqrt{}$	$\sqrt{}$	7	58,33
04	\checkmark		$\sqrt{}$	3	25
05		\checkmark	\checkmark	6	50
06	$\sqrt{}$		$\sqrt{}$	6	50





Child code	Know the characteristics of passion fruit	Doing APE activities	Tell the knowledge	Total score	Value (%)
07	$\sqrt{}$		$\sqrt{}$	3	25
08		$\sqrt{}$	$\sqrt{}$	6	50
09	$\sqrt{}$		$\sqrt{}$	3	25
010	\checkmark		\checkmark	4	33,33
011		\checkmark	\checkmark	7	58,33
012	$\sqrt{}$		$\sqrt{}$	4	33,33
013		$\sqrt{}$	$\sqrt{}$	6	50

Table 2 illustrates the initial condition of the children's creativity ability before the intervention of the passion fruit-based Educational Play Tools (APE). The data indicates that most children still demonstrated limitations in recognizing the characteristics of passion fruit, arranging the plant materials, and verbalizing their knowledge. Individual percentage scores varied from 25% to 58.33%, with the majority of children falling into the 'Not Yet Developed' (BB) or 'Beginning to Develop' (MB) categories. This suggests that in the pre-cycle stage, children's interaction with educational play tools was limited, leading them to tend to imitate or be unable to develop their imagination independently. This analysis emphasizes that without media that stimulates creativity, children's cognitive ability to recognize the shape, taste, and function of passion fruit remains low. This condition underscores the importance of providing engaging and interactive APE to encourage children to actively explore, create, and communicate their ideas more fully.

Table 3. Recapitulation of Children's Pre-Cycle Creativity

Assessed aspects	Development criteria	Number of children (F)	%
Know the shape of passion fruit plants through	BB	7	53,85
APE	MB	6	46,15
	BSH	0	0
	BSB	0	0
Arranging passion fruit plants (roots, stem,	BB	9	69,23
leaves, and fruits)	MB	4	30,77
	BSH	0	0
	BSB	0	0
Tell the knowledge about passion fruit	BB	4	30,77
	MB	2	15,38
	BSH	7	53,85
	BSB	0	0





From the recapitulation presented in Table 3, it is evident that for the aspect of recognizing the shape of the passion fruit, 53.85% of children were in the 'Not Yet Developed' (BB) category and 46.15% in 'Beginning to Develop' (MB), while 'Developing as Expected' (BSH) and 'Very Well Developed' (BSB) had not yet appeared. For the aspect of arranging the passion fruit plant materials, 69.23% of children were in BB and 30.77% in MB. The aspect of verbalizing knowledge about passion fruit showed 53.85% of children in BSH. This analysis indicates that children still struggle with comprehensive shape recognition and systematic arrangement of the passion fruit materials. Only in the aspect of verbalizing knowledge were some children able to express their ideas, but not consistently. This signifies that children's creativity in the initial stage is more dominant in limited verbal ability and less in manipulative skills. In other words, the pre-cycle highlights the necessity of a learning strategy that can simultaneously enhance children's sensory engagement, fine motor skills, and creative imagination through relevant educational media.

Table 4. Children's Pre-Cycle Creativity Achievement

No	Assessed aspects	Development criteria	Number of children (F)	%
1	Know the shape of passion fruit	BSH	0	0
	plants through APE	BSB	0	0
2	Arranging passion fruit	BSH	0	0
		BSB	0	0
3	Tell the knowledge about passion	BSH	7	53,85
	fruit	BSB	0	0
Tot	al			17,95

Table 4 demonstrates that the total classical mastery percentage across the three aspects in the pre-cycle stage was only 17.95%, indicating that the majority of children had not achieved the expected level of creative ability. This analysis highlights the children's low proficiency in recognizing, arranging, and verbalizing knowledge about passion fruit before the use of the Educational Play Tools (APE). This condition affirms the need for an effective educational intervention, specifically the use of the passion fruit-based APE, to increase children's interest in learning activities and to stimulate their cognitive abilities. This low initial mastery serves as an indicator that the previous learning method was inadequate in stimulating children's imagination and thinking skills, thus requiring the planning of creative play-based activities to enhance the effectiveness of cognitive skill development.





Table 5. Results of Children's Cycle I Creativity Observation

Child	Know the characteristics	Doing APE	Tell the	Total	Value
code	of passion fruit	activities	knowledge	score	(%)
01	V			5	41,67
02		$\sqrt{}$	$\sqrt{}$	10	83,33
03		$\sqrt{}$	$\sqrt{}$	8	66,67
04	$\sqrt{}$		$\sqrt{}$	5	41,67
05		$\sqrt{}$	$\sqrt{}$	8	66,67
06		$\sqrt{}$	$\sqrt{}$	10	83,33
07		$\sqrt{}$	$\sqrt{}$	5	41,67
08		$\sqrt{}$	$\sqrt{}$	8	66,67
09		$\sqrt{}$	$\sqrt{}$	6	50
010		$\sqrt{}$	$\sqrt{}$	7	58,33
011		$\sqrt{}$	$\sqrt{}$	9	75
012		$\sqrt{}$	$\sqrt{}$	6	50
013		$\sqrt{}$	$\sqrt{}$	10	83,33

The observation results in Cycle I indicate a significant increase compared to the precycle. Several children began to be able to recognize the shape of the passion fruit, arrange the plant materials, and verbalize their knowledge. Individual score percentages ranged from 41.67% to 83.33%, showing that children started to actively participate in the APE activities. This suggests that the intervention through the passion fruit-based Educational Play Tools successfully motivated the children to be more exploratory and creative. The analysis shows that some children are still in the 'Beginning to Develop' (MB) category, especially in creating the passion fruit shape, thus teacher guidance is still needed to facilitate further imagination development. However, overall, the Cycle I data indicates that the APE was able to simultaneously improve children's manipulative skills and verbal ability, and prepare them for achieving more optimal creativity in the next cycle."

Table 6. Recapitulation of Children's Cycle I Creativity

Assessed aspects	Development criteria	Number of children (F)	%
Know the shape of passion fruit plants	BB	2	15,39
through APE	MB	6	46,15
	BSH	5	38,46
	BSB	0	0
Arranging passion fruit	BB	1	7,7
	MB	6	46,15
	BSH	6	46,15





	BSB	0	0
Tell the knowledge about passion fruit	BB	0	0
	MB	5	38,46
	BSH	5	38,46
	BSB	3	23,08

Table 6 shows an increase in children's creative mastery after the implementation of Cycle I. The total development percentage across the three aspects reached 48.72%, which is significantly higher than the pre-cycle's 17.95%. This analysis indicates that the use of passion fruit-based APE is effective in enhancing cognitive ability, particularly in the aspects of recognizing shapes, arranging the plant materials, and verbalizing their knowledge.

Table 7. Children's Cycle I Creativity Achievement

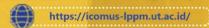
No	Assessed aspects	Development criteria	Number of children (F)	%
1	Know the shape of passion fruit	BSH	5	38,46
	plants through APE	BSB	0	0
2	Arranging passion fruit	BSH	6	46,15
		BSB	0	0
3	Tell the knowledge about passion	BSH	5	38,46
	fruit	BSB	3	23,08
Tot	al			48,72

Although some children were still in the 'Beginning to Develop' (MB) category, a portion began to move into 'Developing as Expected' (BSH), demonstrating a positive shift from the initial stage. This increase confirms the importance of educational play-based learning for the cognitive stimulation, imagination, and creativity of early childhood children, and strengthens their observation skills, fine motor skills, and verbal communication ability.

Table 8. Results of Children's Cycle II Creativity Observation

Child code	Know the characteristics of passion fruit	Doing APE activities	Tell the knowledge	Total score	%
01		√ V	√ √	8	66,67
02		$\sqrt{}$	\checkmark	12	100
03		$\sqrt{}$	$\sqrt{}$	10	83,33
04		$\sqrt{}$	$\sqrt{}$	9	75
05		$\sqrt{}$	$\sqrt{}$	11	91,67
06		$\sqrt{}$	$\sqrt{}$	12	100
07		$\sqrt{}$	$\sqrt{}$	8	66,67





Child code	Know the characteristics of passion fruit	Doing APE activities	Tell the knowledge	Total score	%
01		V	V	8	66,67
08		$\sqrt{}$	$\sqrt{}$	11	91,67
09		$\sqrt{}$	$\sqrt{}$	9	75
010		$\sqrt{}$	$\sqrt{}$	10	83,33
011		$\sqrt{}$	$\sqrt{}$	12	100
012		$\sqrt{}$	$\sqrt{}$	10	83,33
013		$\sqrt{}$	$\sqrt{}$	12	100

The Cycle II results demonstrate an outstanding achievement with 100% classical mastery in the individual observations. This significant increase compared to Cycle I proves that the repeated application, observation, and teacher reflection successfully strengthened the children's critical and creative thinking skills, making the learning process more effective, enjoyable, and relevant to the children's sensory experience.

Table 9. Recapitulation of Children's Cycle II Creativity

Assessed aspects	Development criteria	Number of children (F)	%
Know the shape of passion fruit plants	MB	2	15,38
through APE	BSH	4	30,77
	BSB	7	53,85
Arranging passion fruit	MB	1	7,7
	BSH	7	53,85
	BSB	5	38,46
Tell the knowledge about passion fruit	BSH	6	46,15
	BSB	7	53,85

Table 9 shows that the majority of children are in the Very Well Developed (BSB) category across all assessed aspects, with percentages ranging from 38.46% to 53.85%. This analysis proves that the passion fruit-based APE intervention consistently enhanced children's cognitive ability and creativity, including the ability to recognize shapes, logically arrange the passion fruit materials, and fluently verbalize their knowledge.





Table 10. Children's Cycle II Creativity Achievement

No	Assessed aspects	Development criteria	Number of children (F)	%
1	Know the shape of passion fruit	BSH	4	30,77
	plants through APE	BSB	7	53,85
2	Arranging passion fruit	BSH	7	53,85
		BSB	5	38,46
3	Tell the knowledge about	BSH	6	46,15
	passion fruit	BSB	7	38,46
Total				

The total percentage of mastery across the three aspects in Cycle II reached 87.18%, demonstrating optimal achievement compared to the previous cycles. This analysis confirms the effectiveness of the passion fruit-based APE method in maximizing children's creativity. Children were not only able to recognize the shape and arrange the passion fruit materials but also to verbalize their knowledge clearly, signifying a simultaneous strengthening of both cognitive and verbal abilities. This proves that educational play based on local nature can be a learning medium capable of stimulating all aspects of child development, including cognitive, fine motor, and verbal expression, thus achieving the expected learning targets.

Table 11. Summary of Children's Cycle I Creativity Observation Results

Averange Score	Number Of Children	Percentage	Information
10–12	3	23,08%	Developed very well (BSB)
7–9	5	38,46%	Developed as expected (BSH)
4–6	5	38,46%	Starting to develop (MB)
0–3	0	-	Not yet developed (BB)

Tables 11 and 12 emphasize the qualitative shift in child development from Cycle I to Cycle II. In Cycle I, 23.08% of children were in the Very Well Developed (BSB) category, while Cycle II saw an increase to 69.23%, demonstrating significant growth in both creativity and cognitive ability.

Table 12. Summary of Children's Cycle II Creativity Observation Results

Averange Score	Number Of Children	Percentage	Information
10–12	9	69,23%	Developed very well (BSB)
7–9	4	30,77%	Developed as expected (BSH)
4–6	0	-	Starting to develop (MB)
0–3	0	-	Not yet developed (BB)





This analysis indicates that the sustainable use of passion fruit-based APE can yield a real positive effect on children's learning, strengthening the concepts of learning through direct experience, creativity, and the ability to systematically verbalize and organize information. This improvement highlights the success of the intervention and the importance of an active learning method based on concrete media.

Discussion

Based on the findings regarding children's response to the use of Educational Play Tools (APE) based on the local passion fruit plant in improving the cognitive ability of children at TK Kasih Ibu Talang Babungo, the results prove a significant increase from the pre-cycle to Cycle II. In Cycle I, the researcher faced several challenges in structuring the learning material and managing effective time allocation, thus the achievement of children's cognitive ability had not yet reached the Minimum Competency Criteria (KKM). Observation showed that the learning activity through passion fruit-based APE had a positive impact in the form of increased cognitive ability and fostered children's interest in actively participating, but weaknesses remained, such as the need for clearer directions, additional motivation for the children, and classroom arrangement to help children be more focused and concentrated on the activity. Subsequently, in Cycle II, after improvements were made based on the evaluation and reflection from Cycle I, a clear increase was seen in children's positive attitude, creativity, and cognitive ability, which now falls into the Very Well Developed category. The improved learning process included the preparation of media and the classroom, an opening with motivation and apperception, core activities that adapted the theme to the children's development through the introduction of passion fruit, and a closing with shared reflection. The observation results compiled in the recapitulation table of cognitive ability percentages show a gradual increase: in the pre-cycle, the classical mastery score was only 17.95%; in Cycle I, it increased to 48.72%; and in Cycle II, it reached 87.18%. This analysis proves that the use of passion fruit-based APE not only improved the ability to recognize the shape of the plant, arrange its parts, and verbalize knowledge about passion fruit, but also encouraged children to create and think critically. Thus, this finding affirms that the implementation of Educational Play Tools based on the local passion fruit plant is effective in optimizing the cognitive ability of early childhood children at TK Kasih Ibu, and Cycle II has achieved the expected target, thus requiring no additional cycles. This result indicates that nature-based local learning media can be a relevant, engaging, and productive learning strategy for improving the cognitive proficiency and creativity of early childhood children comprehensively.

4. Conclusion

Based on the research findings presented in the previous chapter, it can be concluded that the application of Educational Play Tools (APE) based on the local passion fruit plant had a significant impact on the improvement of the cognitive ability of early childhood children at TK





Kasih Ibu in the 2024/2025 Academic Year. Before the use of this learning medium, the children's cognitive ability was considered very low, with a classical mastery level reaching only 17.95%, where the majority of children (82.05%) had not shown meaningful development in recognizing the shape, arranging the plant parts, and verbalizing their knowledge about passion fruit. In the pre-cycle stage, no child reached the Developing as Expected (BSH) or Very Well Developed (BSB) category in the aspects of recognizing and arranging the plant, although 7 children (53.85%) began to demonstrate simple storytelling ability about the plant.

Following the application of the local plant-based APE in Cycle I, there was an increase in children's cognitive ability, with the classical mastery percentage rising to 48.72%. Children began to show enthusiasm in learning and were able to recognize the plant's shape and develop variations of the shapes they created themselves, although the majority were still in the BSH category. Some children (23.08%) even reached the BSB category in the aspect of narrating their creations.

A more significant development was seen in Cycle II, where the classical mastery level jumped to 87.18%, which is classified as very good, while only 12.82% of children had not optimally developed. At this stage, the children's ability to create, modify, and explain the shape of the passion fruit plant increased drastically, with the majority of children demonstrating the BSB category in almost all assessment aspects. This proves that the use of Educational Play Tools (APE) based on the local passion fruit plant is proven effective in stimulating the logical, imaginative, and verbal thinking skills of early childhood children, and provides an enjoyable and meaningful learning experience consistent with their developmental characteristics.

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