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Implementation of EduBoard Media *:* Animal and Color Exploration to Improve Cognitive and Motor Skills of Group A Children at Mawar Indah Kindergarten 02 Batu

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Abstract

Motor and cognitive development are two important aspects of early childhood education that require proper stimulation, especially during the golden age. Initial observations in Group A2 at TK Mawar Indah 02 Batu showed that learning was still centered around worksheets and printed books, with 8 out of 18 children not developing as expected. This study aims to improve children's gross motor and cognitive development through the application of the learning media "EduBoard: Animal and Color Exploration." This research uses the Classroom Action Research (CAR) method following the Arikunto model, carried out in two cycles with eight children in group A (4 boys and 4 girls) as subjects. Data was collected through observation, tests, field notes, and documentation, then analyzed descriptively in both qualitative and quantitative ways. The research results showed an increase in children's developmental achievements from 30% at the pre-action stage to 37.5% in cycle 1, and then rising to 87.5% in cycle 2, surpassing the success indicator of 75%. These findings show that the EduBoard media is effective in stimulating both gross motor and cognitive development while also fostering enthusiasm and active participation, making it a reference for early childhood teachers and opening up opportunities for further research with more diverse media subjects or themes, as well as children's enjoyment during the learning process.

Keywords: EduBoard media; cognitive development; gross motor development; early childhood; classroom action research

1. Introduction

Early childhood education is considered a crucial and crucial period of education because it is during this period that a person's character and potential are formed for the future. Research shows that development achieved at an early age significantly influences a child's development in subsequent stages and increases work productivity in adulthood (Mursid, 2017). The importance of this period has led to it being called *the golden age* . This *golden age* only occurs once in a lifetime. Therefore, stimulation for child growth and development is essential. Growth can be seen from weight, height, and head circumference, while development can be seen from motor skills, social and emotional development, language skills, and motor skills (Meiuta Hening, 2019). Motor development is an important aspect that requires attention because it involves coordination between muscles, nerves, and limbs in carrying out various activities. In addition to motor development, cognitive development must also be well developed so that children can process information and learn to assess, analyze, remember, compare, and understand cause-and-effect relationships (Ranianisa et al., 2023). Stimulation that is appropriate to developmental aspects and pays attention to the child's age stages will be an investment in forming a good generation in the future.

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Motor development is the process of growth and development of a child's motor skills. Essentially, this occurs as the child's nerves and muscles mature (Fadlan & Pratama, 2019). Motor development is generally divided into two parts: gross motor skills and fine motor skills. Fine motor skills involve only certain body parts and are performed by small muscles, such as the skill of using fingers and precise wrist movements. These movements require careful eye coordination. Gross motor skills involve the entire body. These activities require core muscles to move, such as the arms and legs (Adin & Endah, 2023). Fine motor skills include movements such as writing, cutting, drawing, pasting, stacking blocks, stringing beads, and holding a spoon. Gross motor skills include movements such as crawling, walking, running, jumping, and kicking. If these motor skills are stimulated and developed properly, they will facilitate children's daily activities and support the development of other aspects of development. Jean Piaget's theory of cognitive development describes how children adapt and interpret objects and events around them (Syafawani & Safari, 2024). Jean Piaget's theory of cognitive development discusses how individuals develop, adapt, and experience change throughout their lives through various aspects, including physical, personality, socio-emotional, cognitive (thinking), and language development (Khiyarusoleh, 2016). According to Jean Piaget, a person's development goes through four stages: sensorimotor, preoperational, concrete operational, and formal operational. Early childhood itself is in the preoperational stage, which lasts from 2-7 years of age. Simply put, cognitive ability refers to a child's ability to think more complexly, as well as their reasoning and problem-solving abilities. With appropriate training and stimulation, cognitive abilities in terms of learning and thinking skills can be improved.

According to the Minister of Education and Culture Regulation No. 137 of 2014 concerning the National Standards for Early Childhood Education, there is one level of gross motor development achievement for children aged 4-5 that is of concern, namely point number (4) throwing something in a directed manner. Meanwhile, at the level of cognitive development achievement, there are 2 points that are of concern, namely (1) recognizing activity patterns and realizing the importance of time, (2) classifying objects into the same group or similar groups or paired groups with 2 variations.

Referring to the results of observations in Group A2 of Mawar Indah 02 Kindergarten, Batu, Jl. Palem Raja 27, Sidomulyo, Batu City, it shows that learning activities often use worksheets and printed books, which results in their gross motor and cognitive abilities being less stimulated properly. Activities using printed books and worksheets more often involve writing letters, thickening, and drawing lines, so that children never really learn the material concepts through direct experience or activities that actively involve students. The lack of stimulation of gross motor development is seen when children participate in ball throwing games. Some children showed difficulty throwing the ball in a directed manner, even though children at their age should have achieved that level of achievement. Then in the cognitive aspect, some children were still confused and mixed up when asked to name land animals, water animals, and winged animals. The results of the observation showed that 8 out of 18 children in the motor and cognitive development aspects had not developed as expected.

A possible solution to address the problem of gross motor and cognitive development simultaneously is to design a single learning medium containing activities that actively involve students and encompass both aspects of development. This approach is in line with a number of studies on media development for early childhood education that have proven effective in stimulating children's abilities through games with the same theme. For example, Aisyah, Iriyanto, Astuti, and Yafie (2019) successfully developed the Ritatoon game tool with a

pet animal theme that was proven to stimulate the cognitive abilities of group A children at the UM Lab Kindergarten in Malang City, showing that the animal theme is effective as a conceptual anchor for children to recognize, differentiate, and classify objects. Meanwhile, according to Hertaning, Iriyanto, and Astuti (2025), the development of the PRISCA (Petualangan Rational Imajinatif Seru Cita Anak) board game, which is considered suitable for stimulating the thinking skills of children aged 5-6 years, proves that the board game format is suitable for children's learning characteristics. Based on these findings, the author designed a learning medium that includes activities involving children to throw and train children to classify objects according to groups with interesting visualizations to create a fun learning atmosphere while providing stimulation. Therefore, the author designed the media "EduBoard: Explore Animals and Colors". The media "EduBoard: Explore Animals and Colors" itself is a modified media and formed from items around the classroom. It is called EduBoard because it comes from a two-sided whiteboard in the classroom, then the author utilized it with each side containing two different activities.

The “EduBoard: Animal and Color Exploration” media utilizes a two-sided whiteboard in the classroom. Each side of the board contains a different type of activity. On the first board, the author designed an activity to stick animals according to their habitat, water, land, and winged animals. Various animal pictures are randomly provided on a small table. Then, the whiteboard is used to draw an illustration of a forest and its sky. Then, for the illustration of the sea , the author provides a clear container filled with water on the table along with pictures of animals. Later, the eight students are instructed to stick the available animal pictures according to their habitat. On the second side of the board, the author makes 4 pictures of butterfly wing patterns with 2 different colors, namely red and yellow, along with their bodies, and sticks them on the board. Then, at a distance of about 3 m from the board, a basket is provided containing balls of different colors. Later, the eight students are instructed to take and throw the balls towards the wings according to the available wing colors until the balls stick to the wing pattern. Children will not only gain meaningful learning experiences, but also get the opportunity to improve their motor and cognitive abilities. This is in accordance with the Regulation of the Minister of Education and Culture of the Republic of Indonesia No. 146 of 2014 concerning the 2013 Early Childhood Education Curriculum. The principle used in the Early Childhood Education learning process is "learning through play." Children under the age of 6 are in a playful period. Providing educational stimulation in an appropriate manner through play can provide meaningful learning for children (Azizah & Wahyuni, 2020).

This research was conducted to improve children's gross motor and cognitive development through the application of the "EduBoard: Animal and Color Exploration" media. The implementation of this learning medium is expected to help stimulate gross motor and cognitive development and provide a variety of learning styles that are more engaging, interactive, and enjoyable for students. It is also expected to provide benefits for local educators.

2. Method

This study uses the Classroom Action Research (CAR) model. Classroom action research is a study that explains the cause and effect of treatment, while also explaining what happens when the treatment is given, and explaining the entire process from the beginning of the treatment to the impact of the treatment (Arikunto, et al., 2015). This research model was

chosen because it is in accordance with what is written in Arikunto's (2015) book on classroom action research, namely to help improve the quality of learning through providing actions to students. The problem found in Mawar Indah 02 Batu Kindergarten, namely in a class the learning model applied too often uses worksheets and printed books so that it does not stimulate children's motor and cognitive development optimally.

This research uses the classroom action research method developed by Arikunto (2015). In his book, Arikunto explains that classroom action research is conducted in four stages with two cycles: planning, implementation, observation, and reflection. This research model is highly appropriate because, as in the book, classroom action research focuses on the process rather than the outcome (Arikunto, 2015).

This research was conducted at Mawar Indah 02 Kindergarten, Batu, Palem Raja Street 27, Sidomulyo, Batu City. The subjects of this research were 17 children in Group A of Mawar Indah 02 Kindergarten. Four data collection techniques were used: observation, tests, field notes, and documentation. The data analysis techniques used were descriptive qualitative and quantitative. Descriptive quantitative data analysis was used to determine individual scores, completion percentages, and class averages through child assessment sheet instruments. While descriptive qualitative data analysis was used to reduce and present data and draw conclusions through child activity observation sheet instruments, field notes, RPPH, and photo documentation. Therefore , overall, the instruments used in this research consisted of child activity observation sheets, child assessment sheets, field notes, RPPH, and documentation in the form of photos during the activity.

This research will be conducted in two cycles through two meetings. In the first cycle, the planning stage begins with the author's preparation of the RPPH (Lesson Plan) for the activities to be carried out. This is then continued with the implementation and observation stages. The second cycle is carried out at the second implementation and observation stage after the first cycle. This second cycle is carried out to ensure proper observation of the learning model. After that, the final stage is closed with a reflection stage through an assessment sheet to observe how the child's development process, the level of success, and identify obstacles that may occur during the learning process. The second cycle is carried out to address obstacles that may have occurred in the first cycle as well as to strengthen and consolidate the results of the implementation of the learning model being tested to obtain a clear picture.

Improving children's motor development through the application of EduBoard media: Animal and Color Exploration, there are indicators on the child's assessment sheet, namely the child is able to throw the ball towards the butterfly's wings with good hand and eye coordination, right on target color, and do it independently. Meanwhile, for cognitive development there are several indicators, namely: (1) the child is able to classify animals based on their habitat well independently, (2) the child is able to classify the ball according to the color of the butterfly's wings well independently, (3) the child is able to follow instructions and understand the activity route. The results of the data analysis will later show the success of the application of learning media with an achievement indicator of $\geq$75%. The indicators that are the focus of the action targets are explained in Table 1 below.

Table 1. Indicators of Motor and Cognitive Abilities of Children in Group A

No.	Development Field	Indicator	Code in the Research Results Table
1.	Motoric	1. The child is able to throw the ball at a certain distance	1
		2. Children are able to use their right and left hands for fine motor activities.	2
2	Cognitive	1. The child is able to understand some instructions.	3
		2. Children are able to differentiate objects according to certain characteristics	4 and 5 (there are 2 sub-indicators)
		3. Children are able to recognize colors	6

3. Results and Discussion

3.1 Result

3.1.1 Pre Cycle

During the pre-cycle activities, researchers conducted observations in Group A2 of Mawar Indah 02 Batu Kindergarten on Palem Raja Street 27, Sidomulyo, Batu City. The results of the observations showed that learning activities often used worksheets and printed books, resulting in children's gross motor skills and cognitive abilities being less stimulated . Activities using printed books and worksheets more often involved writing letters, thickening, and drawing lines, so that children never truly learned the material concepts through direct experience or activities that actively involved students. The lack of stimulation of gross motor development was seen when children participated in the ball throwing game. Some children showed difficulty throwing the ball in a directed manner, even though children at their age should have achieved that level of achievement. Then, in the cognitive aspect, some children were still confused and mixed up when asked to name land animals, water animals, and winged animals. The results of the observations showed that 10 of the 17 children in the motor and cognitive development aspects had not developed as expected. The following is a table of data on motor and cognitive abilities in the pre-cycle activities.

Table 2. Data on Motor and Cognitive Abilities of Children in Group A in the Pre-cycle Stage

No.	What order do you come in your family-	Motor Indicator		Total Motor Indicator Score	Cognitive Indicators				Total Cognitive Indicator Score
		1	2		1	2	3	4	
1.	1st Child	1	1	2	1	1	1	1	4
2.	2nd Child	2	2	4	1	2	1	3	7
3.	3rd Child	2	2	4	1	3	2	1	7

No.	What order do you come in your family-	Motor Indicator		Total Motor Indicator Score	Cognitive Indicators				Total Cognitive Indicator Score
		1	2		1	2	3	4	
4.	4th Child	1	1	2	1	2	1	2	6
5.	5th Child	1	1	2	1	1	1	2	5
6.	6th Child	1	2	3	1	1	1	2	5
7.	7th Child	1	1	2	1	2	1	2	6
8.	8th Child	1	2	3	1	2	1	2	6
9.	9th Child	1	1	2	1	2	1	2	6
10.	The 10th Child	2	1	3	2	2	2	2	8
11.	The 11th Child	3	3	6	3	3	3	3	12
12.	The 12th Child	3	2	5	2	2	2	2	8
13.	The 13th Child	3	3	6	3	3	3	3	12
14.	The 14th Child	3	3	6	2	3	3	3	11
15.	The 15th Child	2	3	5	2	2	3	3	10
16.	The 16th Child	3	2	5	2	3	3	3	11
17.	The 17th Child	2	2	4	3	3	3	3	12
	Amount	31	31	67	28	37	31	39	148
	Maximum Amount	68	68	136	68	68	68	68	272
	Average	45.58 %	45.58%	49.26%	41.17 %	54.41 %	45.58 %	57.35 %	54.41%

If we look at the data in Table 1, it can be seen that children's fine motor skills are still at 49.26%. Likewise, the achievement of cognitive indicators has only reached 54.41%. This means that both the motor and cognitive skills of children aged 4-5 years at Mawar Kindergarten are still below the achievement standard of 75%. Therefore, learning improvement measures are needed to optimize the achievement of children's motor and cognitive development in the following indicators: 1) Children are able to throw a ball at a certain distance; 2) Children are able to use their right and left hands for fine motor activities; 3) Children are able to understand several instructions; 4) Children are able to distinguish objects according to certain characteristics; and 5) Children are able to recognize colors.

3.1.2 Cycle 1

In the planning stage of cycle 1, the author compiled a RPPH containing details of the learning implementation structure, the purpose of creating the learning media, and the estimated learning duration as a reference for implementing the activities. The author also

prepared the classroom *settings* and equipment needed in implementing the EduBoard media: Animal and Color Exploration. The EduBoard media is a media consisting of a two-sided whiteboard. The first side contains illustrations of animal habitats, then in front of it there is a small table containing a container filled with water as an illustration of the sea along with various random animal pictures. On the second side of the board there is a butterfly pattern with 4 wings and two different colors, red and yellow. Then, 3 m from the board there is a basket containing balls in various colors.

During the implementation phase of the first cycle, the children showed great enthusiasm, evident in their eagerness to perform ball throwing (Figure 1). The children were excited just by observing the classroom *setup* , even before instructions were given, as they had never experienced such a learning activity before. This over-enthusiasm and the children's less-than-conducive conditioning led them to engage in the activity even before instructions were given. Some even fought over it. The researchers allowed the children to continue the activity based on their own understanding with minimal guidance and assistance. These observations indicate that the children's cognitive and motor skills still need improvement. The children were unable to throw the ball a predetermined distance and were only willing to throw it a short distance. They also did not understand that only red and yellow balls should be thrown. They used all colors of balls. The children also appeared confused about attaching animal pictures based on their habitats, so they simply attached the pictures according to their preferences.



Figure 1. Implementation stage in cycle 1

During the first cycle of observation, the author used a previously prepared child assessment sheet to measure cognitive and motor development. The results showed improvement from the pre-cycle to the first cycle, as shown in Table 1 below.

Table 2. Results of Cycle 1 Assessment of Cognitive and Motor Skills of Group A Children of Mawar Indah Kindergarten 02 Batu

No.	What order do you come in your family-	Motor Indicator		Total Motor Indicator Score	Cognitive Indicators				Total Cognitive Indicator Score
		1	2		1	2	3	4	
1.	1st Child	2	2	4	2	3	2	2	8

No.	What order do you come in your family-	Motor Indicator		Total Motor Indicator Score	Cognitive Indicators				Total Cognitive Indicator Score
		1	2		1	2	3	4	
2.	2nd Child	3	3	6	3	3	3	4	13
3.	3rd Child	3	3	6	3	3	3	4	13
4.	4th Child	2	2	4	2	3	3	3	11
5.	5th Child	2	2	4	2	2	2	3	9
6.	6th Child	2	2	4	2	3	3	3	11
7.	7th Child	2	2	4	1	2	2	3	8
8.	8th Child	2	2	4	1	3	2	2	8
9.	9th Child	2	2	4	1	2	2	3	8
10.	The 10th Child	3	2	5	3	3	3	3	12
11.	The 11th Child	3	3	6	3	4	4	4	15
12.	The 12th Child	3	3	6	2	3	3	2	10
13.	The 13th Child	3	3	6	3	4	4	4	15
14.	The 14th Child	3	3	6	3	4	4	3	14
15.	The 15th Child	2	3	5	2	3	3	3	11
16.	The 16th Child	3	3	6	3	3	3	3	12
17.	The 17th Child	2	3	5	3	3	4	4	14
	Amount	41	41	83	36	44	48	50	183
	Maximum Amount	68	68	136	68	68	68	68	272
	Average	60.29 %	61.76%	61.03%	41.17 %	54.41 %	45.58 %	57.35 %	67.78%

Based on Table 2, it is known that of the 17 children overall, the average percentage of children's motor skills in cycle 1 was 61.03%. Then, after being given treatment, it was known from the results of cycle 1 that children's cognitive development had increased. The percentage of cognitive aspect achievement was 67.78%. In the author's field notes, third, from the accumulated results of the first cycle, the motor development of children who had achieved the ability to develop according to expectations (BSH) reached 7 children, while for the cognitive aspect, the number of children who had achieved achievement with the BSH category was 10 people. In the cognitive aspect, the activity carried out even though no instructions had been given was to differentiate mixed animal pictures according to their habitats. Then in the motor aspect, even though the children only threw the ball without paying attention to the predetermined color, the children were able to throw the ball in the right direction and at a predetermined distance. Based on the implementation of activities that had been carried out in the first cycle, there were several things that needed to be

considered and improved for the implementation of the next cycle. The application of the EduBoard media: Animal and Color Exploration is expected to be able to improve the achievement of children's cognitive and motor development.

3.1.3 Cycle 2

In the planning stage of cycle 2, the author developed a strategy to condition the children to be more conducive. In this cycle, the author planned to engage the children in several *icebreakers* to attract their attention and encourage them to focus more on the author rather than the media, which had been distracting them from the beginning. Once the children were felt to be focused, the author began to provide instructions and examples gradually.

In the second cycle, the children were well-conditioned, allowing the author to convey instructions clearly and ensure that they truly understood what they were supposed to do. The children's enthusiasm remained the same as in the first cycle, but the author encouraged them to take turns and not fight over each other, creating a more conducive classroom environment. The first activity began with pasting animal pictures according to their habitats (Figure 2).



Figure 2. Children's activity: sticking pictures of animals according to their habitat.

Then continued by throwing colored balls towards the wing pattern according to the predetermined color and distance, only red and yellow balls and not too close to the board (Figure 3). The author also provides tips on how to throw the balls in a directed manner and stick well. In addition, assistance during the learning process is also provided when necessary to support the optimal continuation of the activity. During the activity, it can be observed that the children showed quite significant improvement from the previous cycle. They were able to classify random animal pictures according to their habitat, then stick them on the board well in turns, even working together with other students, such as some sticking for land habitats, and so on. They were also able to find red and yellow balls, then throw them at the appropriate distance and in the same direction as the butterfly wing pattern on the board well.



Figure 3. Activity of throwing colored balls towards the wing pattern image Butterfly

During the second cycle of observation, significant improvements in children's cognitive and motor skills were observed from the pre-cycle stage to the second cycle. The authors recorded these improvements on the children's assessment sheets. The observations showed improvements from the pre-cycle stage to the first cycle and then to the second cycle, as shown in Table 2.

Table 3. Results of Cycle 2 Assessment of Cognitive and Motor Skills of Group A Children of Mawar Indah Kindergarten 02 Batu

No.	What order do you come in your family-	Motor Indicator		Total Motor Indicator Score	Cognitive Indicators				Total Cognitive Indicator Score
		1	2		1	2	3	4	
1.	1st Child	1	1	2	1	2	1	1	5
2.	2nd Child	3	3	6	2	2	2	3	9
3.	3rd Child	3	3	6	2	3	3	4	12
4.	4th Child	3	3	6	3	3	3	3	12
5.	5th Child	3	3	6	3	3	3	4	13
6.	6th Child	3	3	6	3	3	3	3	12
7.	7th Child	3	3	6	2	3	3	3	11
8.	8th Child	3	3	6	2	4	3	3	12
9.	9th Child	3	3	6	2	3	3	4	12
10.	The 10th Child	4	3	7	4	4	4	4	16
11.	The 11th Child	4	4	8	4	4	4	4	16
12.	The 12th Child	4	4	8	3	3	3	3	12
13.	The 13th Child	3	4	7	4	4	4	4	16
14.	The 14th Child	4	4	8	4	4	4	4	16
15.	The 15th Child	3	4	7	3	4	4	4	15
16.	The 16th Child	4	4	8	4	4	4	4	16

No.	What order do you come in your family-	Motor Indicator		Total Motor Indicator Score	Cognitive Indicators				Total Cognitive Indicator Score
		1	2		1	2	3	4	
17.	The 17th Child	3	4	7	4	4	4	4	12
	Amount	54	56	110	52	57	55	60	224
	Maximum Amount	68	68	136	68	68	68	68	272
	Average	80.88 %	82.35%	80.88%	76.47 %	83.82 %	80.88 %	88.24 %	82.35%

The data in Table 3 shows an increase in the aspects of children's motor and cognitive development in cycle 2. The achievement of motor development which was originally 61.03% in the first cycle increased to 80.88% in the second cycle. The achievement of cognitive development which was originally 67.78% in cycle 1, now the achievement level reaches 82.35% in cycle 2. It is known that there is still 1 child whose development is still in the category of Starting to Develop (MB) and there is 1 child whose cognitive development is still Not Developing (BB) and 1 child who is still Starting to Develop (MB), because they still need special guidance and direction from the teacher to be able to complete the activities well.

This shows that the application of the EduBoard: Animal and Color Exploration media can help improve children's motor and cognitive development. The application of this media, in addition to helping improve children's cognitive and motor development, also generates children's enthusiasm so that learning is child-centered. Children also show feelings of joy and happiness during the learning process. The application of the EduBoard: Animal and Color Exploration media starting from the pre-cycle stage, cycle 1, and cycle 2 can be summarized in Table 4 below.

Table 4. Recap and Comparison of Motor and Cognitive Skills Assessment Results for Group A Children at Mawar Indah Kindergarten 02 Batu

Implementation	Motor Achievement Percentage	Percentage of Cognitive Achievement	Achievement Category
Pre-cycle	49.26%	54.41%	Not Yet Developed
Cycle 1	61.03%	67.78%	Starting to Grow
Cycle 2	80.88%	82.35%	Developing as Expected
Increased Achievement	31.62%	27.94%	

Based on Table 4, data obtained shows that there is an increase in the achievement of children's motor and cognitive abilities starting from pre-cycle to cycle 1. The increase in achievement for the motor aspect is 31.62%, and the achievement for the cognitive aspect is 27.94%. This shows that the implementation of the EduBoard media: Animal and Color

Exploration has succeeded in improving the cognitive and motor development of group A children at Mawar Indah 02 Batu Kindergarten. The final percentage of motor and cognitive ability achievement in cycle 2 has exceeded 75%. This means that it has exceeded the minimum achievement limit. Therefore, the research can be stopped in this cycle 2. In addition to helping improve children's cognitive and motor development, the application of the EduBoard media: Animal and Color Exploration creates enthusiasm, participation and enjoyment in children, because they can play but still meaningfully.

3.2 Discussion

3.2.1 Application of EduBoard Media: Animal and Color Exploration to Improve Children's Cognitive and Motor Skills at Mawar Indah Kindergarten 02 Batu

EduBoard Media: Animal and Color Exploration is a learning method chosen by the author as an effort to improve children's cognitive and motor skills. This media can help stimulate children's cognitive and motor skills. In the motor aspect, according to Awi Muhdi Wijaya (2009: 73), the definition of manipulative skills includes the use and control of limited small muscle movements, especially those in the hands and feet. Manipulative movement skills include stretching, squeezing, pulling, grasping, cutting, stringing, shaping, cutting, and writing. Projecting, catching, and receiving skills. These skills can be seen when children catch a ball, dribble a ball, throw a ball, kick a ball, bounce a ball, hit, and pull . According to Yudanto (2010: 47), in learning motor skills, children need experience with basic skills (locomotor, non-locomotor, and manipulative movements). Children must learn to do simple movements before connecting them to more difficult movements. Before mastering a movement skill, children must be given the opportunity to do exercises. This is in accordance with the activities on the EduBoard media that have been implemented. The activity of throwing colored balls in the right direction will help train children's basic skills. In cognitive achievement, according to Hapsari (2020), cognitive development is the development of children's thinking and the ability to provide reasons. Then Sujiono (2015) stated that the characteristics of cognitive development include counting to 20, grouping objects, understanding the meaning of opposites, matching shapes, sorting numbers, recognizing colors, distinguishing shapes such as squares and circles from real objects, recognizing upper and lower case letters, and naming and pairing objects. This is also in accordance with the activities on the EduBoard media, namely classifying animals based on their habitat and distinguishing balls according to predetermined colors, which will help stimulate children's cognitive development.

The implementation of EduBoard media: Animal and Color Exploration in Mawr Indah 02 Batu Kindergarten was carried out on Group A children consisting of 17 children. The author has carried out planning by preparing RPPH documents, then preparing and providing the necessary tools and materials, namely a two-sided board with one side available with animal habitat illustrations, then on the other side there is a butterfly pattern with 4 wings and 2 different colors. Then the author provides random pictures of various animals that can be attached and balls with various colors and has determined the distance between the ball basket and the board. The implementation of the activity begins with conditioning the children, then the author provides examples, instructions, and directions to the children so that the children are able to carry out the activities well.

In the first cycle, the children showed high enthusiasm until they completed the activities freely and haphazardly because they did not listen to the author's directions and examples, so that the results obtained were 3 out of 8 children who showed developmental achievements as expected. Then, in the implementation of the second cycle, the children were able to be conditioned conducively so that examples and instructions could be conveyed well. Because of this, the results obtained were that 7 out of 8 children were able to complete the activities with developmental achievements as expected. They were able to classify animals based on their habitat, recognize the colors of the ball and throw the ball in a directed manner and at a predetermined distance.

3.2.2 Improving Children's Cognitive and Motor Skills through the Application of EduBoard Media: Animal and Color Exploration

The results of the study showed that the application of the EduBoard media: Animal and Color Exploration was able to significantly improve cognitive skills, namely recognizing animal habitats and color concepts, as well as motor skills, namely throwing balls in group A children at Mawar Indah 02 Batu Kindergarten. This increase occurred because this media was designed using a learning through *play approach* that involved direct child interaction and child-centered activities with interesting visual objects (animal pictures and colors) as well as physical activity in throwing activities so that it could stimulate cognitive and motor development simultaneously . This is in line with the opinion (Pramono, 2015) that providing stimulation that is appropriate to the world of children is through fun play activities. (Harlock, 1987) Also stated that by playing, children will gain experience that will shape their knowledge and abilities.

Research (Widhiasih et al., 2024) states that learning activities using natural materials that actively involve students show a clear and progressive improvement in children's fine motor skills. This is in line with the author's research on the implementation of the EduBoard media: Animal and Color Exploration, which makes children actively involved and participate during learning and shows an increase in cognitive and motor skills from pre-action 30% to 87.5%. In addition, research (Nurhayati et al., 2026) found that the use of *Interactive Flat Panels* that involve children playing digital motion-based games has been proven to improve gross and fine motor skills, such as balance, coordination, and eye-hand control, while increasing children's focus, enthusiasm, learning motivation, and independence. The author's research will strengthen previous researchers who also found that the use of multisensory game-based media is effective in improving cognitive and motor skills in early childhood simultaneously, compared to conventional learning methods that only focus on one aspect of development.

4. Conclusion

Based on the results of classroom action research conducted on children in Group A of Mawar Indah Kindergarten 02 Batu, it can be concluded that the application of the "EduBoard: Animal and Color Exploration" media can significantly improve children's gross motor and cognitive abilities. This is evidenced by the increase in children's developmental achievements from 30% in the pre-action stage to 37.5% in cycle 1, and reaching 87.5% in cycle 2, which has exceeded the established success indicator of 75%. This increase is seen in the children's ability to classify animals based on their habitat, recognize colors, and throw balls in a directed manner with improved eye-hand coordination. In addition to improving

motor and cognitive development aspects, the application of this media also fosters enthusiasm, active participation, and a sense of enjoyment in children during the learning process because the activities are designed with a learning through play approach . Based on these findings, it is recommended that teachers of Mawar Indah Kindergarten 02 Batu can apply EduBoard media or similar media continuously as a variation of learning strategies, considering its effectiveness in stimulating more than one aspect of development simultaneously. Conditioning children before the activity begins also needs to be considered so that instructions can be conveyed optimally. For future researchers, it is recommended to develop similar media with a wider variety of themes or levels of difficulty, and involve a larger number of research subjects so that the research results can be generalized more widely.

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