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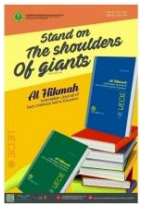

Efforts to Improve Children's Motor Skills and Creativity Through Activities at The Center for Natural Materials

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ABSTRACT

Motor development is an important aspect of development that needs to be developed. If motor development is hindered, other aspects of development will also be hindered. Motor development is closely related to artistic development, where creativity serves as a unifying factor between artistic and motor development. In this study, a phenomenon was observed where 14 students in Group A at TK Kesuma Bangsa Sukabumi experienced difficulties in fine motor development and creativity. This was observed in the initial assessment using a pre-cycle method, which yielded an average score of 30.6%, indicating low levels of motor and creative development among the students. Therefore, this study aims to enhance children's motor skills and creativity through play activities at the natural materials center at TK Kesuma Bangsa Sukabumi. This study used classroom action research with three cycles and data collection using observation and documentation methods, which were then analyzed using quantitative descriptive methods. The results of the study indicate a significant increase from Cycle I to Cycle III. Fine motor skill development improved from 42.5% (Beginning to Develop) in Cycle I to 92.4% (Developing Very Well) in Cycle III, while creativity development improved from 42.5% (Beginning to Develop) in Cycle I to 90.5% (Developing Very Well) in Cycle III. This indicates that this study can enhance fine motor skills and creativity among students at TK Kesuma Bangsa Sukabumi.

INTRODUCTION

Kindergarden school or early childhood education is education or coaching for children aged newborn or 0 years to six years with the aim of monitoring the physical and spiritual growth and development of children so that children are ready for further education (Ashfarina, Soedjarwo, & Wijayati W, 2023). Every aspect of development is important for the development and growth of children, the motor aspect is one aspect of development that needs to be stimulated. Children's motor stimulation needs to be done because it helps develop basic skills in performing daily activities, such as touching, holding, and moving (Mauro, 2024). In addition, children's motor development will greatly affect other aspects of child development such as cognitive, social emotional, and art. If a child's motor development is inhibited, other aspects of the child's development will also be inhibited (Mauro, 2024). The aspects of art and motor development are closely related, in art and motor development, creativity is the main key in combining the two aspects of development. Creativity is an imagination for children to

enable children to obtain products, ideas and interactions with other people and the environment (Nouval, 2024). Children's creativity is needed in children's movement activities because ideally, early childhood children should be able to move their limbs in a coordinated manner, and be able to pour their ideas and imagination through various forms of meaningful work and play (Marwany & Kurniawan, 2020). But the fact is that there are still early childhood, especially 4-year-old children who experience obstacles in motor development as reported by Radio Republik Indonesia. These obstacles are in the form of fine motor skills, which have difficulty grasping writing utensils, cutting, or assembling. The same goes for gross motor, which is shown by weak coordination of body movements and lack of confidence in doing physical activities. So that it has an impact on the decline in imagination which is a child's creativity in playing and working (Putri, 2025). . Based on the results of observations and documentation from the pre-cycle of group A children containing 14 students, it resulted in a low percentage of assessment of 30.6% and all children began to develop but were still under the guidance of the teacher when doing the learning activities provided. All children are less skilled in doing activities that require fine motor skills, and have not been able to express ideas or ideas creatively in play activities. This shows that the learning methods used need to be adjusted to better support children's overall motor development and creativity.

This study offers a solution to develop children's fine motor skills and creativity by integrating activities in the natural materials center as a learning strategy that can improve these two important aspects. Teaching will be done through an active, explorative, and fun approach, where children are given the freedom to choose materials and ways to create according to their interests. Piaget (1952) states that children learn most effectively through direct interaction with their environment (Habsy, Malora, Widyastutik, & Anggraeny, 2023). Playing with natural materials such as clay, leaves, sand, and stones not only stimulates children's manipulation skills, but can manipulate imagination and problem solving (Fono & Ita, 2021).

Literature by Nurmalasari on structured play activities using a center-based learning model of natural materials, proving able to stimulate fine motor and creativity of children (Nurmalasari, 2022). Research conducted by Desrianti and Marlina at PAUD Kasih Ibu Mekar Sari Sawahluto stated a significant increase from cycle I to cycle II in improving children's motor skills by doing natural material mosaic activities can improve children's eye and hand coordination (Desrianti & Marlina, 2024). Literature by Sholihah states that learning to use natural clay materials can manipulate children's movements, coordinate the eyes and build children's creativity in producing shapes according to the imagination and control of children's hands (Sholihah, Musayyadah, & Farida, 2024). Eustakia Lidwina Koe in her research with the ADDIE model states that the use of natural materials learning is stated at 96% which is categorized as "very valid" to improve children's fine motor skills (Koe, Dua Dhiu, & Fono, 2023). Meli Susanti stated in her research on weaving learning with natural materials in kindergarten children stated that children's fine motor skills developed well (Susanti, 2019). Based on the overall literature and research conducted, natural material media can assist in stimulating motor development and creativity in early childhood.

In this study, the natural material center at was aimed at improving children's motor skills and creativity. The intervention was carried out in several cycles with data collection in the form of observation and documentation. Indicators in this study are children's motor skills

in the form of hand and eye coordination, accuracy of movement, fine muscle control, and speed and flexibility of fingers. As for the creativity coordinator in the form of initiative, divergent thinking, imaginative, fluency, elaboration, originality, and tenacity of children. The results of this study can also be an effective alternative learning model for kindergarden teachers in developing children's potential holistically, as well as making a real contribution to improving the quality of early childhood education, especially in the aspects of motor skills and creativity.

METHODS

This research is a classroom action research conducted in an effort to improve children's motor skills and creativity through activities in the center of natural materials at TK Kesuma Bangsa Sukabumi. This method was chosen because it provides an opportunity for researchers to improve learning practices that are not in accordance with child development and improve learning models directly in the classroom through planned action cycles. The subjects of this study were group A students at TK Kesuma Bangsa Sukabumi in the 2024/2025 school year totaling 14 people. The research was conducted by involving collaborators, namely fellow teachers who participated in the process of planning, implementation, observation, and reflection.

The research design is classroom action research developed by Kemmis and McTaggart, which consists of four stages "planning, acting, observing, and reflecting" (Maliasih, Hartono, & P, 2017). Research in three cycles, with two meetings in each cycle is carried out in a sustainable and reflective manner, where the results of one cycle become the basis for improving actions in the next cycle.

Figure 1. Classroom Action Research Cycle by Kemmis & MC Taggart Model

Data collection techniques in classroom action research include observation and documentation, and interviews (Firdaus et al., 2023). The data collection techniques used in this study are observation and documentation which are analyzed and described quantitatively. The research instrument used is an observation sheet of children's motor skills and creativity that focuses on fine motor indicators and children's creativity. Fine motor indicators in the form of hand and eye coordination, accuracy of movement, fine muscle control, and speed and flexibility of fingers. As for the creativity coordinator in the form of initiative, divergent thinking, imaginative, fluency, elaboration, originality, and tenacity of children. These indicators are assessed in 3 footholds of learning activities which include, footholds before playing (motivated and happy when sitting in a circle; seriousness in answering the teacher's questions; showing a

special attitude during prayer; fully involved in discussing the topic of the activity; feeling accepted; focused on play activities that have been prepared; involved in discussion of the rules of the game; willing to accept and follow the agreed rules of the game), footholds during play (understanding how to play according to with mutual agreement; actively involved in activities; pouring ideas, own ideas in using play tools; responsibility for tasks; on time in completing tasks) and footholds after play (tidying up play tools; mentioning activities that have been carried out; pouring feelings while playing). Each activity in the foothold of learning activities is given a score with a value scale of 1-4 with a description of not yet developing, starting to develop, developing as expected, developing very well.

Table 1. Description of Grade Criteria

Score Description	Criteria	Score Value
The child is not yet able and must be guided or modeled by the teacher in doing the activity.	Underdeveloped	1
The child is able but with the help of the teacher in doing activities	Starting to Develop	2
The child has been able to independently without being assisted by the teacher in doing the activity	Developing as expected	3
The child has been able to independently and consistently without being assisted by the teacher in doing the activity	Developing Very Well	4

Each development indicator is calculated the achievement score compared between pre-cycle, cycle I, II, and III to see the increase (Moreno, 2018) the score is seen based on the observation sheet, the results of which are calculated using the learning completeness formula (Sunarsih, 2021):

$$\mathbf{N} = \frac{\sum \text{Students complete the learning}}{\sum \text{Student}} \times 100$$

The results of the scores were re-categorized into:

Table 2. Assessment percentage

Category	Percentage Value
Underdeveloped	0%- 25%
Starting to Develop	26%- 50%
Developing as expected	51%- 75%
Developing Very Well	76%- 100%

RESULT

This research was conducted with a pre-cycle and 3 cycles, for the pre-cycle the data generated were:

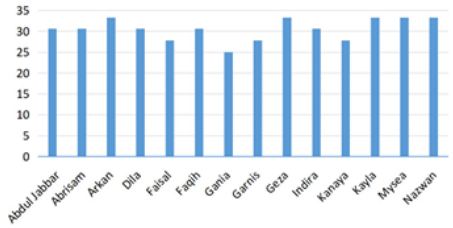

Chart 1. Students' Fine Motor Skills in the Pre-Classroom

Based on the chart of fine motor skills of each student obtained during the pre-cycle is in the criteria "starting to develop", this shows that the learning process implemented has not succeeded in improving motor skills.

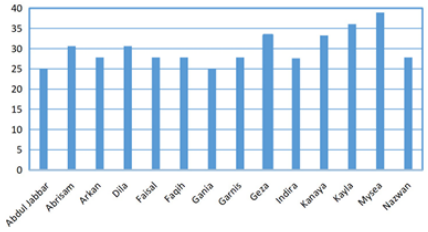

Chart 2. Student Creativity Ability Pre-classroom

Based on the chart of students' creativity abilities, it can be concluded that students' creativity abilities are still low. This shows that learning completeness has not been achieved. Based on these conditions, it can be said that the enthusiasm shown by students towards learning activities is still lacking.

Based on the results of the pre-cycle, the average fine motor skills were 30.6% and creativity was 29.1%, all students were in the "Starting to develop" category with a 0% percentage of completeness.

Table 3. Average Motor Skills and Creativity Pre-Classification

Aspects	Highest Score	Lowest Score	Average Score
Fine motor skills	33,3	25	30,6%
Creativity	36,1	25	29,1%

Cycle I the data results obtained were:

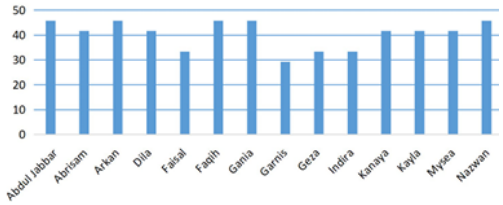

Chart 3. Fine Motor Skills of Students Cycle I

The average score on students' fine motor skills in cycle I was still low because students were still shy and not used to playing in a role, most students were still hesitant in choosing the media to be used, students still asked the teacher a lot about the ideas they had to make. In addition, the approach taken by the teacher to students is still lacking because the teacher still pays too much attention to students who like to be alone so that some students try to attract the teacher's attention by doing activities outside the agreement previously discussed with students. Likewise, the play tools provided are lacking and less active students do not get the opportunity

to play. This weakness that occurs in the teacher is due to the teacher's unfamiliarity with the division of roles and environmental settings in natural play activities.

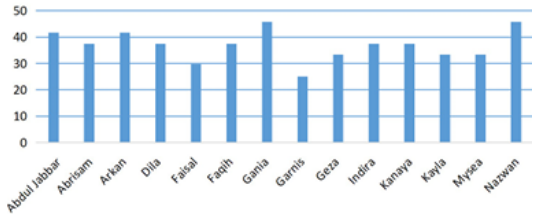

Chart 4. Student Creativity Ability Cycle I

on the chart, it can be concluded that the percentage of completeness obtained is still low. This is because students are still shy and not used to saying dialog according to their own ideas. Students tend to tell their ideas to the teacher and there is no desire to be expressed in using the media / play tools, this is due to the lack of understanding of students due to lack of habituation in activities using natural materials. Students are still confused with the materials provided.

Figure 2. Cycle I Learning Foothold Activities

In cycle I, children's motor skills and creativity have improved but have not met the criteria for completeness. To reflect on what is done is that the teacher gives open questions and explains the material in detail and interestingly, the teacher provides more varied play tools, and the teacher directs students more in the use of media/play tools.

Table 4. Average Motor Skills and Creativity Cycle I

Aspects	Highest Score	Lowest Score	Average Score
Fine motor skills	45,8	25	42,5%
Creativity	45,8	25	42,5%

In cycle II the results of the data obtained:

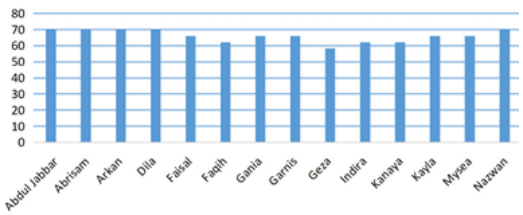

Chart 5. Students' Motor Skills Cycle II

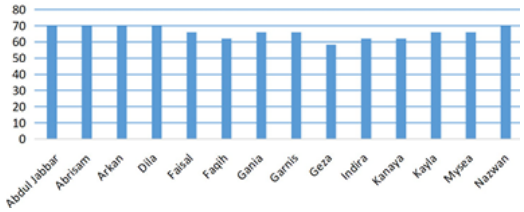

Chart 6. Student Creativity Ability Cycle II

Based on the chart above, the percentage of fine motor and creativity completeness of students is above 50%, which means that half of the 14 students have met expectations. However, there are still students who need to be improved, the low value of students is because students still like to see or ask friends and teachers what they will make. In addition, the media provided by the teacher to students is still not varied enough, as well as the play tools provided are lacking. the weaknesses that occur in this teacher are due to the teacher not being optimal in the activity of playing with natural materials.

Figure 3. Cycle II Learning Foothold Activities

In cycle II, motor skills improved from cycle I and pre-cycle. The category obtained has also increased to "Developing as expected". However, there are still students who need to improve their development. Therefore, the necessary reflection is that the teacher prepares to provide material in a way that is easier for students to understand, the teacher directs students more so that they can join their friends in turn according to the division of roles, and the teacher prepares more varied media.

Table 5. Average Motor Skills and Creativity Cycle II

Aspects	Highest Score	Lowest Score	Average Score
Fine motor skills	70	58,3	66%
Creativity	70	58,3	66%

In cycle III is the last cycle with the results of all students experiencing development in fine motor and creativity with the category obtained is "Very Good Development".

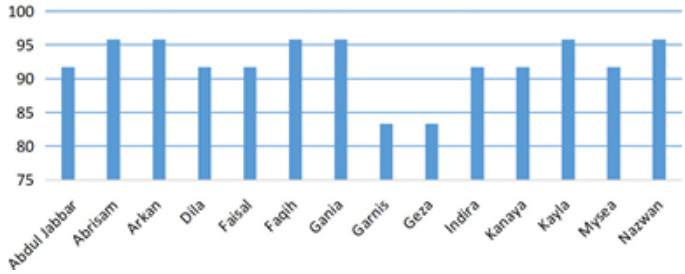

Chart 7. Fine Motor Skills of Students Cycle III

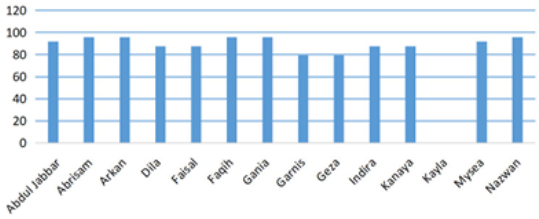

Chart 8. Student Creativity Ability Cycle III

In cycle III, motor skills reached 92.4% and creativity 90.5%, which means that all students improved their motor skills and creativity with learning using nature centers. All students in cycle III fall into the "Developing Very Well" category and have met the completeness criteria.

Table 6. Average Motor Skills and Creativity Cycle III

Aspects	Highest Score	Lowest Score	Average Score
Fine motor skills	95,8	83,3	92,4%
Creativity	95,8	79,2	90,5%

DISCUSSION

In the context of learning in kindergarten, centers are a learning approach where children's activities are grouped into play activities with a specific theme or activity. Each center activity has a focus of activities designed to develop aspects of child development holistically (Werdiningsih, 2022). In this study, the centers used were centers with learning activities using natural materials and a developmental focus on children's motor skills and creativity.

In the pre-cycle, children's motor skills and creativity were in the "Starting to Develop" category. Children tend to be passive, lack confidence, and have not been able to utilize natural materials creatively. This shows that the previous approach has not been able to provide optimal stimulation for children.

After the actions of cycles I and II, there was an increase in scores, although it had not yet reached the criteria for completeness. This shows that children began to show interest in the activities provided, but still need habituation, teacher support and adjustments to learning media to make it more interesting and challenging. A teacher needs to understand the relationship between the body and physical activity and the motor competence of children because the physical is the main driver in the development of a child's motor skills (Spring, Carroll, & Wadsworth, 2023).

In cycle III, the average motor skills reached 92.4% and creativity 90.5%, which means that both aspects have been in the "Developing Very Well" category. This shows that the systematic and structured use of natural material centers can improve the quality of early childhood learning. The natural materials center provides space for children to explore, imagine and develop motor coordination skills directly through real activities. Gull, Bogunovich, Goldstein, & Rosengarten (2019) explain that a child needs to be given an opportunity to express creativity through the materials he finds so that children can learn to explore and have motivation in their own learning (Gull, Levenson Goldstein, & Rosengarten, 2022).

This research resulted in an increase in children's motor skills and creativity in the natural materials center. Wathoni states that motor activities in early childhood at KB Sabilul

Huda have increased due to loose parts media or natural materials. The impact obtained from motor activities with natural materials can increase creativity in a group of children and increase children's interest in learning (Wathoni, Suparmiati, & Hopiah, 2024).

Motor development is a very important development for children from an early age. if the child's motor skills are hampered, the child's development will be hampered. Early childhood development is a critical development because in this phase, development is rapid and sensitive to environmental stimuli. Motor skills in early childhood consist of gross and fine motor skills. Gross motor is a movement that comes from large muscles in children (Dzakiyyah et al., 2024) while fine motor is a movement that comes from certain small muscles found in the body (Wathoni et al., 2024).

Children's creativity in this study experienced significant development where children became more solutive and innovative. In addition, children have high imagination in playing with natural materials that have been provided by the teacher. In a journal written by Devi (2023) center learning activities with natural materials have increased student creativity in carrying out learning activities with natural materials provided by the teacher. The creativity of a child is seen from how a child imagines and pours it according to what the child thinks (Devi, 2023).

Creativity is a unique and flexible thinking process, where a person is able to look at a problem from different perspectives and find innovative solutions. Creativity is often associated with imagination, thinking power, and skills in producing something new and useful. Thus, creativity becomes one of the important aspects in the development of individuals and society (Astuti, 2024) The development of early childhood creativity is a gradual process that reflects the cognitive, emotional, and social growth of children. Creativity in early childhood is not just a matter of drawing or making crafts, but also includes the ability to think imaginatively, solve problems, and express oneself uniquely (Harahap, 2022).

The results of this study are in line with the theory of constructivism learning which states that children will learn better if they are directly involved in activities that are relevant to life. Jean Piaget stated that learning for learners is a process of forming individual intellectuals through activities in everyday life. This is in line with the theory of constructivism where daily activities carried out by a child will produce new learning for the child (Barlia, 2015). However, there needs to be a teacher as a companion and coach for the continuity of learning. The role of the teacher as a facilitator is very important in providing stimulation, motivation and assistance during the learning process. In a journal written by Nisa and Aulia (2024) said that a child's fine motor skills will improve but there needs to be a stimulus carried out to achieve according to the indicators that have been aimed (Nisa & Aulina, 2024). It can be concluded that teachers, learning activities and learning materials or media are the main keys in natural material center learning activities. This is evident in the pre-cycle and cycle I the teacher still has not mastered the learning material and the teacher's teaching method is still monotonous one causes no development to occur in contrast to cycles II and III where the teacher has mastered and can master the class by guiding and leading students which results in motor development and student creativity developing. Suitable learning is also needed to improve student development such as learning using natural media with varied materials that

can help students in developing motor and imaginative so that students can be creative according to their imagination.

CONCLUSION

Play activities at the natural materials center are proven to improve and be effective for the motor skills and creativity of group A children at TK Kesuma Bangsa. Learning through centers provides an active and fun learning experience. This is evidenced by the increasing percentage of the average value from cycle I to cycle II and ending in cycle III. In cycle I, all children were in the "Beginning to Develop" category and in cycle II 50% of children were in the "Developing as Expected" category and in cycle III all students were in the "Developing Very Well" category. It can be concluded that there is progress in student motor skills and creativity which starts from the overall average value of students in fine motor development 42.5% in cycle I to 92.4% in cycle III and creativity development 42.5% in cycle I to 90.5% in cycle III. Both developments have a significant increase which can be concluded that natural material center activities can improve children's motor skills and creativity and learning with natural material centers can be an effective alternative learning model for kindergarden teachers in developing children's potential holistically.

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