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THE EFFECT OF *PLAYDOUGH* GAMES ON THE FINE MOTOR SKILLS OF GROUP B CHILDREN

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ABSTRACT

Penelitian ini bertujuan untuk mengetahui pengaruh permainan *playdough* terhadap perkembangan kemampuan motorik halus anak usia 5–6 tahun di TK Al-Iman Padi, Kecamatan Gantarang, Kabupaten Bulukumba. Latar belakang penelitian ini didasarkan pada hasil observasi awal yang menunjukkan rendahnya keterampilan motorik halus anak, seperti menggenggam, menekan, dan membentuk objek sederhana. Penelitian ini menggunakan metode eksperimen dengan pendekatan kuantitatif dan teknik *saturated sampling*, melibatkan seluruh anak kelompok B sebanyak 12 orang. Instrumen penelitian berupa lembar observasi yang mengukur empat aspek motorik halus, yaitu koordinasi mata dan tangan, keterampilan manipulatif, kontrol gerakan jari, serta kreativitas dan imajinasi. Hasil analisis data menggunakan uji Wilcoxon Signed Ranks Test menunjukkan adanya perbedaan yang signifikan antara skor pra-tes dan pasca-tes dengan nilai $Z = -3.068$ dan $p = 0{,}002$ ($p < 0{,}05$), yang menandakan bahwa permainan *playdough* berpengaruh secara signifikan dalam meningkatkan kemampuan motorik halus anak. Rata-rata skor meningkat dari 20,75 menjadi 54,83 setelah perlakuan diberikan. Dengan demikian, permainan *playdough* terbukti efektif sebagai media pembelajaran berbasis aktivitas sensorimotor dalam mendukung perkembangan motorik halus anak usia dini.

Kata Kunci: *Playdough*, Motorik Halus, Anak Usia Dini

ABSTRACT

This study aims to determine the influence of playdough games on the development of fine motor skills of children aged 5–6 years at Al-Iman Padi Kindergarten, Gantarang District, Bulukumba Regency. The background of this study is based on the results of initial observations that show low fine motor skills in children, such as grasping, pressing, and forming simple objects. This study used an experimental method with a quantitative approach and saturated sampling technique, involving all 12 children of group B. The research instrument was in the form of an observation sheet that measured four fine motor aspects, namely eye and hand coordination, manipulative skills, finger movement control, and creativity and imagination. The results of data analysis using the Wilcoxon Signed Ranks Test showed a significant difference between pre-test and post-test scores with values of $Z = -3.068$ and $p = 0.002$ ($p < 0.05$), which indicates that playdough play has a significant effect on improving children's fine motor skills. The average score increased from 20.75 to 54.83 after the treatment was administered. Thus, the game of playdough has proven to be effective as a learning medium based on sensorimotor activity in supporting the development of fine motor skills in early childhood.

***Keywords**: Playdough, Fine Motor Skills, Early Childhood*

INTRODUCTION

Childhood in general is a time when an individual is relatively helpless so dependent on others as well as a time of great happiness. Early childhood is usually referred to as early childhood in the school education pathway as a form of education (Intisari et al., 2025) (Zulfajri et al., 2021)

In the elaboration of Law number 20 of 2003 concerning the national education system, article 1 paragraph 14 states that early childhood education (PAUD) is a series of coaching activities aimed at children from birth to the age of six. This activity includes providing educational stimuli for the growth and development of children's physical and psychological development, so that children have readiness to enter further education. (Hasbur et al., 2024) (Nurachadijat & Selvia, 2023)

Education in Indonesia, especially in educational institutions, certainly has a clear vision and mission, namely efforts to improve the quality of education for students, especially for early childhood education institutions. However, in addition, in the world of education, especially at the early childhood education level, faced with several problems of Teaching and Learning Activities (KBM), such as the lack of effective use of learning media that is not in accordance with the needs of early childhood, as conveyed by Gagne, media is various types of components in the environment to stimulate the learning process. (S. M. Hasibuan, 2024) (NASYIKHAH, 2021)

Montessori states that it emphasizes learning by developing the five senses through various tools for developmental aspects. The aspect of child development is very important for children. Every child is born with a nature and is equipped with various potentials and abilities that are different from other humans. The potential developed in early childhood must include all aspects of basic abilities, namely cognitive, language, physical, motor, social-emotional, artistic, and religious and moral values. One of the aspects that develops rapidly in early childhood is the physical motor aspect. (Saputri et al., 2024) (Nidha Eka Restuti Munawir et al., 2025) (Alya et al., 2025)

Fine motor skills are the ability to perform delicate and complex movements, which usually require the use of small muscles in the hands . Sujiono said that fine motor is a movement that involves only certain parts of the body and is performed by small (smooth) muscles. This movement does not require effort, but requires careful coordination between the eyes and hands. According to Hurlock, the development of fine motor motion is the increased coordination of gestures involving much smaller or more detailed muscles and nerves. Based on this opinion, it can be concluded that fine motor ability is a state in which a child is able to perform movements through the use of small muscles or certain limbs with good precision and coordination such as the skill of using the hands. (Sadaruddin et al., 2022) (Graduate, 2020) (SYAHRAENI et al., 2023) (Damayanti & Aini, 2020)

Saputra and Rudyanto explained that fine motor is the ability of children to do activities by using fine (small) muscles such as writing, squeezing, grasping, drawing, arranging blocks and inserting marbles. There are four kinds of fine motor skills, namely (1) grasping, (2) holding, (3) tearing, (4) scissors. These kinds of fine motor abilities to develop coordination between hands and eyes. Fine motor skills allow for manipulative movements. Manipulative motion is a motion that requires the ability to control any object or equipment. Manipulation of certain objects leads to better eye-hand coordination (Munthe et al., 2023) (Lestari et al., 2024) (Wahjoedi, 2016).

Based on observations that have been carried out at Al-Iman Padi Kindergarten, Padang Village, Gantarang District,

Bulukumba Regency, it can be concluded that the children's fine motor development has not been developed optimally. It is evident that of the 12 children in group B, 8 children are in the undeveloped category (BB) and 3 children are in the Developing According to Expectations (BSH) category. It can be seen that the coordination between the child's eyes and hands has not been directed and honed properly, the child's agility and flexibility have not been clearly seen, the child has not been able to imitate the shape by using various media such as grasping, squeezing, making simple shapes, and creating creations from *playdough*.

Theoretically, Montessori emphasizes that early learning should focus on sensory exploration and manipulation of concrete objects to develop children's coordination and motor skills (Komalasari & Yunengsih, 2021). In addition, appropriate and visually and tactile learning media can increase children's focus and motivation to learn (Gagne in Rachman, 2022). However, in learning practice at Al-Iman Padi Kindergarten, the use of learning media such as *playdough* which can ideally stimulate children's fine motor skills is still rarely done or has not been utilized optimally.

This gap shows that there is a difference between ideal conditions according to early childhood learning theory that emphasizes the importance of manipulative activities, and the reality in the field that shows the weak use of educational media in the development of children's fine motor skills. This is the basis for the need for intervention through relevant and effective media, such as *playdough*, in early childhood learning activities.

Playdough is one of the educational game tools that are safe for children and can develop all aspects of early childhood development. Making playdough can train fine motor skills in early childhood. Children can use their hands and tools to form a dough made of flour in place of clay through the experience, children develop eye, hand coordination and dexterity as well as hand strength that can stimulate the child's motor development to write and draw. (Susanti et al., 2024) (Dini et al., 2021)

According to Einon, *playdough* media is a medium that is soft enough to knead, but elastic enough to make a shape. Furthermore, Einon stated that (Idhayanti et al., 2022) *playdough* media is the best everyday material to make models or shapes for children. Meanwhile, according to Anggraini, (A. N. Hasibuan, 2024) *the game of playdough* is one of the activities that are beneficial for children's brain development. By playing (Lefni & Yeni, 2022) *playdough*, children not only get fun, but also beneficial for improving their brain development. With (Sandriani et al., 2022) *playdough*, children can create any shape with a mold or with their own creativity . (Oktaviani et al., 2021)

Etymologically, *Playdough* comes from the English language of two syllables, namely "*Play*" which means game or play and "*Dough*" which means dough. So literally (Tauriana et al., 2022) *Playdough* is a type of game that uses colorful flour dough that can be shaped by hand to resemble the desired shape. Dwi Rosanty argues that (Fairuz, 2022) *playdough* is one of the educational game tools because it can encourage children's imagination. Eion said that (Oktaviana & Oktavianti, 2024) *playdough* is a soft material, which can keep children silent for a long time when working on it, although various colors such as rainbows and dirt can stick to the carpet. (Nasikhah & Alimudin, 2022)

Ismail further explained that *playdough* is one of the educational game tools that is easy for children to use, multipurpose, cheap and easy to get, safe and harmless, durable and durable, can be used individually or classically, attractive colors can be combined, have size suitability, and are elastic and lightweight. Learning using (Nasikhah & Alimudin, 2022) *playdough* media, children will do a lot of squeezing, pressing, and cutting

activities that function to stimulate fine motor skills as well as brain development. (Nabela, 2021)

Based on some of the opinions above, it can be concluded that playing *playdough* is a fun activity for children, through playing playdough will create a dynamic and non-stressful atmosphere so that children will not feel burdened, besides that it can also train fine motors, creativity and imagination in children.

This study focuses on the introduction of forms using *playdough* games to improve fine motor skills in children aged 5-4 years at Al-Iman Padi Kindergarten. *Playdough* games can also train children's fine motor skills, creativity and imagination and become a tool to teach basic concepts such as colors, shapes, and sizes. Through games, children can learn to recognize and distinguish different colors and shapes. In addition, (Mustiani et al., 2023) (Ferasinta & Dinata, 2021) *playdough* media is rarely used in schools. In a fun way, children can learn while playing, which makes the learning process more engaging and effective. (Safari & Risdayanti, 2020)

Based on these backgrounds and gaps, the problem studied in this study is whether *the game of playdough* has an effect on improving the fine motor skills of children aged 5–6 years in Al-Iman Padi Kindergarten. The purpose of this study is to find out and analyze the influence of the use of *playdough* as an educational game medium in improving the fine motor skills of group B children.

RESEARCH METHODS

This research was carried out at Al-Iman Padi Kindergarten, Padang Village, Gantarang District, Bulukumba Regency, with the aim of finding out the influence of games *playdough* to improve fine motor skills of children aged 5–6 years. This study uses a quantitative approach with a pseudo-experimental design (*quasi-experimental*), and involved all 12 children of group B as subjects through saturated sampling techniques.

The steps to implement this research are as follows:

1. Initial observations
   Researchers conducted direct observations on the initial condition of fine motor skills of children in group B. The results of observations showed that most children were not able to perform fine motor activities well.
2. Pre-test administration
   Before being given treatment, the researcher measured the child's fine motor skills using an observation sheet that included indicators such as rolling, pinching, pressing, shaping objects, and hand-eye coordination skills.
3. Treatment
   Children were given play activities using *playdough* media during several sessions specifically designed to stimulate fine motor skills. The activities carried out include rolling, pressing, pinching, printing shapes, making letters, numbers, and simple shapes according to the child's imagination.
4. Post-test administration
   After all treatment sessions were completed, the child's fine motor skills were re-measured using the same instruments as in the pre-test.
5. Data collection and analysis
   Data were collected based on pre-test and post-test observations, then analyzed using the Wilcoxon Signed Ranks Test statistical test to see if there was a significant difference between pre- and post-treatment conditions.

Table 1. Fine Motor Achievement Instrument Grid for Children Aged 5-6 Years

Aspects	Child Development Achievement Rate	Indicators
Fine Motor	1. Eye and hand coordination	1. Children are able to form *playdough* 2. Children are able to roll *playdough* 3. Children are able to press, pinch, and squeeze *playdough* 4. The child is able to imitate simple shapes
	2. Manipulative skills	1. Children are able to use molds to form *playdough* 2. Children are able to make small details 3. Children are able to form more complex objects 4. Children are able to print letters or numbers on *playdough*
	3. Finger movement control	1. The child is able to pinch *the playdough* with his fingertips 2. The child is able to flatten the *playdough* with the fingers 3. Children are able to make small circles or thin lines
	4. Creativity and imagination	1. Children are able to create shapes according to their own imagination 2. Children are able to create more complex shapes 3. Children are able to tell ideas from the shapes that have been made 4. Children are able to use different colors in *playdough*

RESULTS AND DISCUSSION

This research was carried out at Al-Iman Padi Gantarang Bulukumba Kindergarten with 12 children in group B. Data collection was carried out through observation of fine motor skills before and after being treated in the form of games *playdough*. The instruments used were in the form of observation sheets that included aspects of eye and hand coordination, manipulative skills, finger movement control, as well as creativity and imagination.

Table 2. Descriptive Statistics

Description	Pretest	Posttest
N	12	12
Minimum	15	45
Maximum	30	60
Red (Average)	20,75	54,83
Std. Deviation (Baku Junction)	5,675	5,340
Valid N (listwise)	12	

The measurement results showed an improvement in the child's fine motor skills after being given treatment. The average pre-test score is 20.75, with a minimum score of 15 and a maximum of 30. After being given treatment in the form of play activities *playdough*, the average post-test score increased to 54.83, with a minimum score of 45 and a maximum of 60.

Statistical analysis was carried out using the Wilcoxon Signed Ranks Test because the data came from two paired groups (pre-test and post-test) and were not normally distributed. The test results showed a value of Z = -3.068 and an Asymp value. Sig. (2-tailed) = 0.002. Because the significance value < 0.05, there is a significant difference between the pre-test and post-test results. That is, the game *playdough* has a significant effect on improving the fine motor skills of group B children.

The results of the study show that the game *playdough* It can significantly improve the fine motor skills of children aged 5–6 years. This can be seen from the increase in the average observation score as well as the results of statistical tests that show a significant difference between the conditions before and after treatment.

This finding is in line with the research conducted by Zidha Ilmi Nabela and also strengthens this finding by stating that the media (Nabela , 2021) *playdough* able to develop fine motor skills of children of Cinta Ilahi Kindergarten, Gunung Sugih District. Squeezing, pressing, and molding activities with *playdough* It is considered to be able to train small muscles and improve children's hand and eye coordination.

Likewise, in a study by Erina Nuraini et al., it was found that Playdough media play activities can hone children's fine motor skills because they use hands and fingers as well as eye coordination. (Nuraini et al., 2023)

In addition, the results of this study also support the theory put forward by Hurlock who explains that fine motor development is closely related to manipulative activities that provide direct stimulation to nerves and small muscles. Activities such as pinching, rolling, and forming simple objects with (Soraya & Suwanti, 2023) *playdough* encourage the child to use visual coordination and hand gestures simultaneously, which are at the core of fine motor development. (Sa'deyah & Mudlikah, 2025)

Thus, it can be concluded that the game *playdough* Not only does it provide fun for children, but it is also an effective learning tool that has a direct impact on aspects of the development of fine motor skills. This research emphasizes the importance of sensorimotor media in early childhood learning, and encourages teachers and parents to be more active in using *playdough* as part of daily learning activities.

CONCLUSION

Based on the results of the data analysis that has been presented in this study, it can be concluded that the game *playdough* It is proven to significantly improve children's fine motor skills. Z value = -3.068 and *p-value* = 0.002 indicates that there is a significant difference between scores *Pre-test* and *Post-test* after being given treatment. In addition, the results of descriptive statistics show that the average score *Pre-test* of 20.75 increased to 54.83 on *Post-test*, with all participants experiencing an increase in scores. Thus, the game *playdough* effective as a learning strategy based on

sensorimotor activities to develop children's fine motor skills.

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