

Analysis Of The Use Of Slime Media In Improving Fine Motor Skills Of 4–5-Year-Old Children At It Bina Insani Kindergarten, Magling Dusun

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Article Info

Article history:

Accepted: 03 Agustus 2026

Publish: 14 September 2026

Keywords:

slime media,
fine motor skills,
early childhood.

Abstract

This research is motivated by the importance of stimulating fine motor skills in early childhood, particularly children aged 4-5 years who are in the golden age of development. One of the media used at TK IT Bina Insani, Dusun Magling, Bayan District, North Lombok Regency, to stimulate children's fine motor skills is slime media, a soft, sticky, and elastic play material that trains the coordination of the small muscles in children's fingers and hands. This study aims to: (1) identify and describe the implementation of slime media in improving the fine motor skills of children aged 4-5 years; (2) determine the development of fine motor skills of children aged 4-5 years after participating in learning activities using slime media; and (3) identify the obstacles faced by teachers in using slime media as a learning medium for fine motor skills. This study employed a qualitative descriptive approach. The data sources consisted of primary data, namely teachers and students of group A at TK IT Bina Insani, as well as secondary data in the form of written documentation and photographs of activities. Data collection techniques included participant observation, unstructured interviews, and documentation. Data analysis was carried out through data reduction, data display, and conclusion drawing and verification, with data validity tested through increased diligence and triangulation of sources, techniques, and time. The results show that the implementation of slime media was carried out through three stages, namely preparation, implementation, and evaluation, with teachers acting as facilitators and guides. The development of children's fine motor skills showed improvement in four indicators: the ability to squeeze and press, the ability to pull and stretch, the ability to roll and shape, and eye-hand coordination. The obstacles faced by teachers included limited time and materials, variations in children's motor abilities, managing cleanliness due to the sticky texture of slime, and the need for extra supervision of children's safety during play. It can be concluded that slime media is a potential and effective learning medium for stimulating the development of fine motor skills in children aged 4-5 years when properly planned and guided by teachers.

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1. INTRODUCTION

Early childhood is an individual undergoing a very rapid growth and development that is fundamental to later life. The age of 4-5 years is often referred to as the golden age because it is during this period that all aspects of a child's development develop optimally, including physical motor skills. Children's motor development is divided into two categories: gross motor skills and fine motor skills [1]. Fine motor skills are a very important skill to develop from an early age

because they are related to various daily activities such as writing, drawing, and other skills that require eye-hand coordination [2].

Fine motor development is a fundamental aspect that requires serious attention from the time a child reaches preschool age. Motor development involves controlling body movements, involving the coordination of the nervous system, muscles, and directed movement [3]. Furthermore, fine motor skills are the ability to use small muscles, such as the fingers and hands, which require precision and hand-eye coordination [1]. Therefore, children's fine motor skills need to be stimulated appropriately and in a planned manner to ensure optimal development appropriate to their age [4].

Safitri [5] emphasized that simple activities like holding a pencil can improve small muscle coordination in young children, which forms the foundation for writing skills. Environmental factors, stimulation, and the role of teachers significantly influence fine motor development in early childhood [6]. Busy books are effective in improving fine motor skills through activities such as opening, sticking, and tying [7].

Fine motor skills are closely related to a child's readiness for academic activities such as writing, which are essential when they enter school [5]. Mahyuddin [8] also emphasized the importance of traditional games such as paper folding or stringing to train children's hand-eye coordination. Therefore, this ability needs to be stimulated from an early age through various activities that involve hand-eye coordination. This stimulation can be done through play activities such as folding, stringing, drawing, or other manipulative activities that involve children's small muscles [9].

In developing children's fine motor skills, selecting the right learning media is key to a successful teaching and learning process in kindergarten. Engaging and engaging media can motivate children to actively participate in every learning activity. Learning media serve as a means of conveying messages and stimulating children's interest, attention, and participation, thereby stimulating all aspects of early childhood development, including physical motor skills, cognitive skills, language skills, social-emotional skills, and the arts [10]. Therefore, teachers in early childhood education institutions need to provide innovative media that are appropriate to children's developmental characteristics.

One learning medium that can be used to improve fine motor skills in early childhood is slime. Slime is a chewy, sticky, and elastic-textured toy material that is very popular with children. When children play with slime, they naturally perform various hand movements such as squeezing, pressing, pulling, rolling, and shaping, which directly trains the coordination of the small muscles in their fingers and hands. The unique texture of slime, which is flexible and can be shaped in various ways, makes it a very promising medium for stimulating children's fine motor skills while maintaining children's enthusiasm and enjoyment throughout the activity. This is in line with research showing that training using slime play media can significantly improve children's fine motor skills through fun and interactive activities [11].

Furthermore, other research shows that the use of slime as a learning medium can gradually improve fine motor skills in early childhood through repetitive and structured activities [12]. In general, the use of play media in early childhood learning has a positive influence on fine motor development, as children learn through direct experiences involving physical and sensory activities [13].

In addition to slime, various other creative media have also been shown to improve children's fine motor skills, such as the use of game-based creative media that stimulate hand-eye coordination [14]. Manipulative play also significantly contributes to developing children's finger flexibility and movement precision, making it highly effective as a fine motor stimulation tool [15]. Similarly, the use of media such as playdough has a similar effectiveness to slime in improving children's fine motor skills through shaping and squeezing activities [16].

The use of natural materials as learning media has also been shown to improve children's fine motor skills through exploratory activities involving various textures and shapes [17]. Furthermore, learning media generally play a crucial role in supporting children's fine motor

development by increasing their active involvement in the learning process [18]. Collage, a creative activity, has also shown significant improvements in young children's fine motor skills, particularly in coordination and accuracy [19].

This view aligns with the results of research conducted by Muhaimin [20], which showed a significant increase in children's fine motor development through the use of slime. The average percentage of children in the pre-study was 41.67%, then increased in cycle I and experienced a significant increase in cycle II. These findings demonstrate that slime is not just a simple toy but has high educational value in stimulating fine motor development in early childhood.

Based on the results of initial observations conducted by researchers on February 10, 2026, at the IT Bina Insani Kindergarten in Magling Hamlet, Bayan District, North Lombok Regency, researchers found that the school implemented learning media in early childhood learning activities. One of the media used was slime, which was used in play-while-learning activities. During the implementation, children appeared enthusiastic when doing activities such as squeezing, pressing, and shaping slime according to their respective creativity.

These conditions indicate that the use of slime media has the potential to stimulate children's fine motor development. However, it is not yet known in depth how the learning process using this media, the extent of its effectiveness in developing children's fine motor skills, and the factors that influence its successful use in the classroom. Therefore, researchers are interested in conducting research to analyze the use of slime media in learning, specifically in developing fine motor skills in children aged 4-5 years, so as to obtain a comprehensive picture of its implementation, effectiveness, and supporting and inhibiting factors.

2. RESEARCH METHODS

This study uses a qualitative research approach. According to Fadli [21], qualitative descriptive research is research used to describe, explain, and answer questions about current phenomena and events, both regarding the phenomena as they are and analyzing the relationships between various variables within a phenomenon. This approach was chosen because the researcher wanted to understand in-depth and comprehensively the use of slime media in developing fine motor skills in children aged 4-5 years at TK IT Bina Insani.

This research was conducted at the Bina Insani IT Kindergarten in Magling Hamlet, Bayan District, North Lombok Regency, West Nusa Tenggara Province. The study was conducted during the 2025/2026 academic year and lasted for two months, from May to June 2026. Within this period, the slime activity that is the focus of this study was implemented twice a week, each session lasting approximately 30-45 minutes, for a total of eight sessions observed by the researcher.

Primary data sources are those obtained directly from research subjects or those with primary information related to the research focus. The primary data sources in this study were teachers and students. Secondary data were obtained from written documentation such as observation and interview notes, as well as photographs related to the analysis of slime media use.

The informants in this study were selected using a purposive sampling technique. The teacher informant was the Group A homeroom teacher, chosen because she was directly responsible for planning and delivering the slime activities and had taught the class throughout the observed period. The student informants consisted of all 15 children in Group A (7 boys and 8 girls), aged 4-5 years, who participated in every scheduled slime session; all 15 children were included, rather than a subset, because the class size was small enough for the researcher to observe each child's fine motor progress individually across the eight sessions. Of these, 5 children (2 boys and 3 girls) were selected for the unstructured interviews, chosen to represent a range of initial fine motor ability observed during the first session, from children who were initially reluctant to touch the slime to those who engaged with it immediately.

In this study, the researcher used three data collection techniques: observation, interviews, and documentation. The observation used was participant observation, where the researcher was directly present at the research location, namely in the Group A classroom of TK IT Bina Insani,

and carefully observed the progress of learning activities using slime media. The interviews conducted were unstructured interviews, namely free interviews without using systematic structured interview guidelines. Documentation was used to complete the necessary data in the form of images of several activities.

The data analysis technique used is the Miles & Huberman (2014) model in Sirajuddin Saleh [22], which includes data collection, data reduction, data display, and conclusion drawing and verification. In this study, each stage was applied concretely to the field data as follows. During data collection, the researcher compiled observation notes from each of the eight slime sessions, transcripts from the unstructured interviews with the teacher and the five selected children, and photographs of the children's activities. In the data reduction stage, this raw material was sorted and grouped according to the four fine motor indicators used in this study, squeezing and pressing, pulling and stretching, rolling and shaping, and hand-eye coordination, while excluding notes unrelated to these indicators, such as unrelated classroom incidents. In the data display stage, the reduced data were organized into a narrative matrix comparing each child's fine motor performance across the eight sessions for each indicator, allowing the researcher to see developmental patterns over time rather than isolated observations, alongside a separate summary of the obstacles teachers reported in the interviews. Finally, in the conclusion drawing and verification stage, the researcher compared the patterns identified in the data display against the interview transcripts and photographic documentation to confirm that the observed improvements in squeezing, pulling, rolling, and coordination were consistently supported across all three data sources before being written up as the findings presented in Section 3.

To obtain data validity, several techniques were used in this study, including increasing observational diligence and conducting triangulation (triangulation of sources, techniques, and time), as well as using sufficient references [23].

3. RESULTS AND DISCUSSION

Research result

Based on the results of observations made by researchers during the learning activities, the implementation of the use of slime media at TK IT Bina Insani was carried out through several planned stages, namely the preparation stage, the implementation stage, and the evaluation or closing stage of the activity.

During the preparation stage, the teacher prepares the slime media, which they previously made using child-safe ingredients, such as glue, thickening agents, and food coloring in a variety of colors to attract children's attention. The teacher also prepares plastic mats or tablecloths to keep the play area clean and develops a Daily Learning Implementation Plan (RPPH).

During the implementation phase, slime play activities are carried out in groups, supervised directly by the class teacher. The teacher first provides examples and instructions on how to hold, squeeze, pull, roll, and shape the slime. During the activity, children are seen performing various hand movements, including squeezing and pressing the slime to feel its texture, pulling and stretching the slime, and rolling and shaping the slime into various simple shapes such as balls and snakes. The teacher's role in this phase tends to be that of facilitator and guide.

In the final stage (evaluation), the teacher invited the children to tidy up the slime and play area, while also conducting a simple reflection by asking about their feelings and experiences while playing with slime. Overall, the slime implementation went according to the established lesson plan.

Furthermore, regarding the fine motor development of children aged 4-5 years after participating in learning activities using slime, it was observed through four indicators. In the indicator of the ability to squeeze and press the slime, most children began to be able to squeeze slime with more controlled variations in pressure, indicating strengthening of the small muscles in the fingers and hands. In the ability to pull and stretch, after several activities, children began

to be able to pull the slime until it was long without breaking, indicating development in the aspects of flexibility and coordination of the fingers.

In their ability to roll and shape slime, children demonstrated a wide range of creative development and began to be able to shape slime into various shapes. In terms of hand-eye coordination, most children showed improved visual focus when manipulating slime, with eye movements increasingly consistent with hand movements.

Based on the interview results, several obstacles were found that teachers faced, including: 1) Limited time and materials, 2) Variations in children's abilities, 3) Management of cleanliness and tidiness, considering the sticky texture of slime, and 4) Extra supervision of children's play safety.

Discussion

The results of the study indicate that the implementation of slime media at TK IT Bina Insani was carried out through planned stages of preparation, implementation, and evaluation. This finding aligns with the opinion of Rupnidah & Suryana [24], who stated that appropriate learning media can support children's fine motor development through activities involving optimal hand-eye coordination when used with good planning. The implementation of this activity also aligns with the slime media concept proposed by Maeilani et al. [25].

Beyond confirming that slime is an effective medium in general, the findings of this study point to specific physical characteristics of slime that explain why it supports each of the four fine motor indicators observed. Slime's viscoelastic texture, being soft enough to deform under light pressure yet resistant enough to require sustained muscle tension to fully compress, means that the simple act of squeezing and pressing recruits and strengthens the intrinsic hand muscles more than manipulating a rigid object would, which explains the controlled pressure variation observed in this indicator. Its high tensile stretchability, unlike drier media such as clay, allows the slime to be pulled and stretched over a longer distance without breaking, which extends the duration of muscle engagement in the fingers and demands graded, sustained grip strength rather than a single brief motion, directly supporting the flexibility and coordination gains observed in the pulling and stretching indicator. Because slime holds a shape only briefly before slowly relaxing back, shaping it into balls or snakes requires children to continuously adjust finger pressure and positioning rather than manipulating it once and releasing, which likely accounts for the creative shaping ability observed and simultaneously trains finger dexterity through repetition within a single manipulation. Finally, because slime's shape changes visibly and immediately in response to hand movement, it provides children with instant visual feedback on the outcome of their hand actions, which plausibly explains the improved hand-eye coordination observed, as children could continuously see and correct the relationship between their hand movements and the resulting shape. These characteristics, malleability under sustained pressure, high stretch tolerance, slow shape relaxation, and immediate visual feedback, together distinguish slime from more rigid manipulative media and provide a more specific explanation for its effectiveness than general claims about "sensory play" alone.

In addition, the role of teachers as guides and facilitators in this study strengthens the findings of Mulyadi et al. [11], who stated that teachers have an important role as inspiration in guiding children using slime media, so that children are able to produce creative work.

The improvement in children's fine motor skills observed in this study reinforces the findings of Muhaimin's [20] study, which showed that using slime can significantly improve children's fine motor skills when done repeatedly and in a structured manner. This indicates that improved fine motor skills are the result of consistent and ongoing stimulation.

Improved finger flexibility and hand coordination are also relevant to Liani et al.'s [26] opinion, which states that fine motor skills are influenced by neural maturity and early stimulation. Playing with slime provides more meaningful stimulation than purely instructional learning [13].

Regarding the obstacles faced by teachers, these findings align and are relevant to the research findings of Sari & Nofiaturrehman [27], which also identified obstacles such as limited

materials and a lack of teacher understanding in implementing sensory-based learning media such as slime in early childhood education (PAUD) settings. To address these challenges, teachers at TK IT Bina Insani implemented several strategies, such as dividing children into small groups, preparing additional cleaning supplies, and providing instructions on play rules at the beginning of the activity.

4. CONCLUSION

Based on the research results and discussion, it can be concluded that:

1. The use of slime to improve fine motor skills in 4–5-year-old children at the IT Bina Insani Kindergarten in Magling Hamlet was implemented through three stages: preparation, implementation, and evaluation. The activity went according to plan and actively engaged the children in a fun playful atmosphere.
2. Children's fine motor development shows improvement in four indicators: squeezing and pressing skills, pulling and stretching skills, rolling and shaping skills, and hand-eye coordination. Children who initially have limited abilities gradually experience improved skills after participating in repeated activities.
3. Challenges faced by teachers include limited time and materials, varying student abilities, managing cleanliness, and the need for safety supervision. These challenges are addressed through thorough preparation, dividing students into small groups, and providing additional cleaning supplies.

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