

## CREATIVITY DEVELOPMENT OF FINGER PAINTING TO STIMULATE COGNITIVE, AFFECTIVE, AND MOTORIC OF EARLY CHILDHOOD

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### ABSTRACT

*The purpose of this study is to investigate children's cognitive, affective, and motor development through creativity of finger painting art. The stimulation of these three aspects of Bloom's taxonomy teaches children to recognize colors and to apply cognitively, teaches children to practice patience affectively, and teaches children to use their fingertips to stimulate their motor development through finger muscles. This study used a qualitative method with a case study design to 25 early childhood students aged 5-7 years old at TK Pertiwi Bacin Kudus. Data collection techniques used observation, interviews, and documentation. According to Permendikbud about National Standards for Early Childhood Education, the assessment criteria used are underdeveloped (UD), beginning to develop (BD), very well developed (VD), and develop as expected (DE). The data observed indicates BD before students got finger painting activities. The results of the study obtained 3 aspects based on Bloom's taxonomy. From those aspects of development, the highest percentage of cognitive aspect was 72% in BD. The result illustrated that 18 children began to mention colors. The highest aspect of affective was 64% in BD. It indicates that 16 children ask for help to the process and technique of finger paintings. They ran to go through the process and steps to DE. The highest aspect of psychomotor was 60%. It describes that 15 children began to develop when they smeared colors unclearly bright to form object.*

## INTRODUCTION

Early childhood education (ECE), also known as nursery education or pre-primary school or play school, is established for 3 and 4-year-old children in England, or 2 to 5-year-old children in the United States. UNESCO states that ECE is inclusive education more than just preparing for primary education. It is also prepared and trained for adulthood. The phases which pass through give children experiences using senses of beauty to the feelings, creativity, imagination, and expressiveness in music, arts and crafts, nature and mathematics. They are able to solve their problems by their critical thinking, ideas, through the forms of knowledge (Bruce, 2012). Early childhood teacher are required to guide children with guidance of teaching the art in order to manage young children's experiences. Therefore, teachers have to understand sensitivity, identifying personal traits negotiation, collaboration with other and experience with ongoing personal development to children artwork

(Twigg & Garvis, 2010). Teachers' sensitivity to early childhood artworks is identified as critical to children's self-esteem and interest. When teachers set artwork classroom, children aware class procedures developed.

In Finger painting activity, children are able to make experiment with colors and patterns using their fingertips to play. Their sensory play using color by their fingertips to drawing media is a good way to create arts and to express their emotions as well. In other words, finger painting is also able to stimulate emotion in total psychotherapeutic situation especially for children with behavior problems (Arlow & Kadis, 1946). This activity trains children as the concept of art to the process of creativity development including fluency, originality, and flexibility (Mayar, Fitri, Isratati, Netriwinda, & Rupnidah, 2022). It affects them to independence, imagination, and talent through sustainability. It mostly focuses on fine motor skills and gross skills as a way of getting effectiveness on the process of child development (Ruminingsih, Utaminingsih, & Murrinie, 2022). The motor development which consists of gross motor and fine motor becomes indicator to create award-winning culture in development achievements portrayed in children's activities (Basa, Sutarto, & Setiawan, 2020). Furthermore, some of researchers in previous study only discuss one skill to measure even compare one activity to another activity (Harsismanto, Ramon, Putrawan, Padila, & Andri, 2021).

This study is conducted to investigate the competence with theory of taxonomy through creativity of finger painting. Colors created through finger painting teach children to know different colors, lines, areas, and textures visually (Suryawan & Putra, 2022). It helps them to develop their cognitive aspect. Children spontaneously respond teacher's asking to paint using certain colors and when teachers and children are involved in communication. As supported the Child Development Achievement Standards (STPPA) in the Minister of Education and Culture Regulation (PERMENDIKBUD) Number 137 of 2014 concerning National Standards for Early Childhood Education, learning by playing indirectly manipulate children to use eyes and fingers to produce art on drawing media to paint by finger tips (Evivani, 2020). Children paint colors to object such as flowers, animals, fruits, vegetables, houses, vehicles, etc. Teachers as a role model require creativity training as preparation in facing transformation science into practice of finger paintings for childhood (Sundari & Zahroh, 2021). Creativity, in previous study, addressed mostly to transform for economic value (Rosdiana & Wibowo, 2021) (Susila, Wijanarko, Rosdiana, & Wakit, 2022) (Rosdiana, Yulistianti, & Nafisah, Strengthening Local Wisdom Through Troso Design by Applying Embroidery Among Weaving Craftmen, 2018). However, the importance of creativity development of finger painting conducted by early childhood in early education is necessary to be an easier time to solve their challenges in learning process. It has been observed that children's creativity through finger painting can develop their adaptability, fluency, originality, and elaboration (Amaliyah, Sit, & Bassri, 2022). Besides, this activity provides children to develop personal creativity, driving, process, and product (4P) (Siregar & Ismet, 2021). It requires hand skills to produce artwork without eliminating characters of creators' handmade in evolving aesthetic expressions. Painters have their own techniques to create painting. Iris Scott, the first professional contemporary finger painter found them freedom when she used fingertips in painting without brushes (Real, 2019). They taught themselves the rules of drawing realistically in tackling art by copying photos and paintings in their early age in order to break them on the other day.

The development of achievement in finger painting conducted is classified using Bloom's Taxonomy as educational learning objectives into levels of complexity and specificity. The objectives of learning are listed into three, namely cognitive, affective, and psychomotor. The six levels in cognitive domain consist of knowledge, comprehension, application, analysis, synthesis, and evaluation. The level used in cognitive aspect for early childhood work their art are knowledge, application, and analysis. In this case, children are expected to recognize and remember the basic concepts of topic used, colors, and strategy to paint as skill of their knowledge. After that, children using acquired knowledge apply and practice finger painting to solve problems of situation as teachers' instructed. Then, children are able to present their art work into analysis. In affective domain, children have emotion-based to react. There are five levels of affective domains described,

namely receiving, responding, valuing, organizing, and characterizing. Children in affective domain are expected to pay attention and to memorize receptively in receiving level. Furthermore, they, in a level of responding of affective domain, respond the learning process in classroom through their attitude, emotion, and feelings. The psychomotor domain students conducted consists of perception, set, guided response, mechanism, complex overt response, adaptation, and origination. Specifically, the levels of perception, set, response, and origination for early childhood are proper indication in the activity of finger painting. In the level of perception of psychomotor, children are able to identify colors used and to select object based on topic. Then, in the level of set in psychomotor domain they begin drawing. In the process of drawing, children follow teachers' instruction to guide (Harahap, Milfayetty, & Dewi, 2018).

Children create artwork as their own design is considered as creativity (Sobral, 2021). The components of Bloom's Taxonomy in cognitive, affective, and motoric domains increase the awareness and receptivity, focus on attention, and express responses. These components are also sharpened intuition, sensibility, and receptivity required for artists (Anderson, 1984). Therefore, the application of bloom taxonomy for early childhood in Creativity Development to Stimulate Cognitive, Affective, and Psychomotor skills is investigated through finger painting creativity art using instrument of assessment criteria of achievement development to meet awareness toward art is significantly responded through painting more receptive.

## **METHODS**

This research employed a qualitative integration approaches with case study design (Cresswell, 2014). Qualitatively, it investigated children's cognitive, affective, and motor development through creativity of finger painting art activity. Data collection techniques used observation, interviews, and documentation. According to Permendikbud about National Standards for Early Childhood Education, the assessment categories used are underdeveloped (UD), beginning to develop (BD), very well developed (VD), and develop as expected (DE). This assessment category corroborates with Blooms' Taxonomy to investigate the achievement competence narratively.

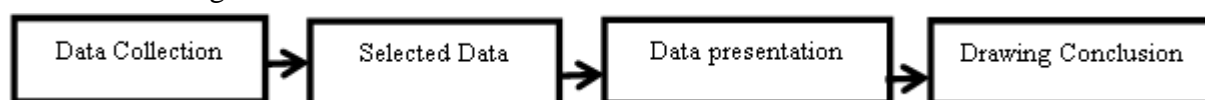
This research design contributes development achievement of early childhood's learning based on portfolio theoretically in corroboration of achievement development criteria assessment and Bloom's Taxonomy (Ridder, 2017) (Thomas, 2021). The Impact of finger painting practices influences children to skills formulated in Bloom's Taxonomy described using instrument of achievement development assessment. Through this research, researchers observed to obtain and examine data of children's development achievement in a context of learning situation which is finger painting to describe in depth-life comprehensively (Rasmitadila, et al., 2021). Children, in this case, got experience to the world from finger painting practices.

This research was conducted to 25 children aged 5-6 years old in TK Pertiwi Bacin Kudus for 8 months. Data collection used observation, interviews, and documentation. Research data were obtained from experimental setting in classroom to 25 students as object. Then, the learning activity of finger painting was measured corroboratively both Blooms' Taxonomy criteria and instrument of achievement development (Brill & Schwab, 2019). The data was taken and obtained from the activity of students' finger painting by investigating student's interested in and not interested in during finger paintings' activities. It started from pre-activity of apperception, main activity of playing color through finger painting, and post-activity of feedback to lead students' achievement development based on Blooms' Taxonomy.

The four indicators as instruments used in pre-activity of apperception are telling artwork, classical, playing color, and activity of finger paintings. In the main activity, students were playing colors through finger paintings. In research instrument of achievement development was used as a tool of indicator in data collection to classify children's attraction to finger paintings including underdeveloped (UD), beginning to develop (BD), very well developed (VWD), and develop as expected (DAE). This instrument corroborates to Bloom's Taxonomy category to classify children's

achievement to skills. Children were assessed based on their preferences during activities include their telling of artwork, classical, playing color, and activity of finger painting. Thence, this preference indicator used as a guide for teachers to encourage students' weakness and strength of finger paintings activity. Teachers initiate students in pre-teaching by videos to evoke children's curiosity. From video's example, teachers invited students to discuss. Children responded their preferences from the video. Thence, the instrument of preferences was drawn from responses as guidelines to finger paintings' practice.

Informant sources were obtained from classroom teacher and students of TK Pertiwi Bacin Kudus. The observation data made directly to finger paintings activities to investigate achievement development of students as indicators to describe skills in the domain of cognitive, affective, and psychomotor. After it was collected, it was presented, and then concluded. The research design is illustrated in the figure 1.



**Figure 1. Research methodology**

The selected data is conducted are to children who had willingness in finger painting. There were 25 children selected and were ready to be assessed. The data presents through assessment instrument into table and diagrams with percentage. The results found were used as conclusion in finding to analyze into discussion.

## **RESULTS AND DISCUSSION**

### **RESULT**

Based on Bloom's theory, finger painting activities involves three aspects to assess. The results are found that two from 25 children were effectively under developed due to there is no initiative from students to begin activities independently and orderly. In this case, teacher has to encourage students in drawing attraction toward activities of finger paintings through reflection as the process of learning from classroom experience and gaining new insights into self-practice even professional practice (Walida & Murtafi'ah, 2022). Teacher has an important role to make framework to compose criteria which covers philosophy, principles, theory, practice, and beyond practice. The assumption or the concept of finger paint's practices as the principle comes from personal development through activities' learning which, furthermore, enhance children into creativities with Bloom's taxonomy categories.

Children cognitively recognized basic colors and mixed colors. They were 4 children very well developed. Meanwhile, 18 children (72%) were in beginning to develop correctly mentioning the basic colors but they were not able to mention mixed colors. This was due to the diverse visual experiences of students and the stimulation of various colors and even material developed in finger paint evokes various emotions related to personal life about the objective world (Wei, 2022). Finger painting, in this case, deconstruct students' experiment of emotional cognition to recognize colors. Besides, color theorists believe that color impact to cognition and behavior through finger painting learning (Mehta & Zhu, 2009). There are only 3 children (12%) were underdeveloped.

In aspect of affective, 16 children (64%) categorized beginning to develop (BD). In this case, children realized to have assistance in conducting finger paintings. They asked for help to the process and technique of finger paintings. They ran to go through the process and steps to developing as expected. However, they are still lack cooperate each other. There were 7 children (28%) who were in very well developed (VWD) independently conduct finger paintings from start to finish, plus they obliged the mutually agreed rule. Children became autonomous learners because they were able to take responsibility to decide what they want to learn, why they needed to learn, and how to tackle their problems through finger paint practice (Fatmawati & Wirza, 2022). Only 2 children (8%) were in underdeveloped (UD) category.

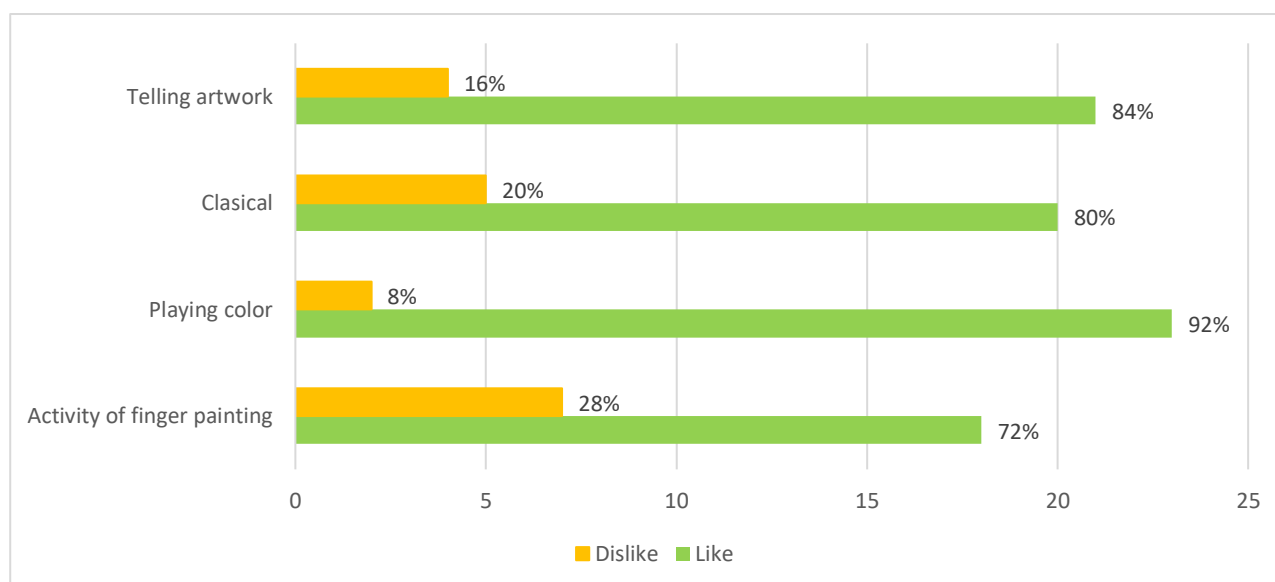
Psychomotor aspect in finger painting was used to assess skills relates to motion flexibly using fingers and tools to explore and to express creatively applying color gradation using fingertips. There were only 5 children (20%) categorized underdeveloped because their motions were slow and inflexible to smear on drawing paper. Children of 15 persons (60%) began develop when they smear colors unclearly bright to form object. However, 5 children (20%) were in developing as expected. The development of children's fine psychomotor was influenced from direct contact with reality surrounding them. Thus, it built their knowledge about the world in which they are growing and developing (Faraco, Baeza, & Martínez-Heredia, 2022). Finally, his study corroborates how creativity development has an impact of the academic development using Bloom's taxonomy with four criteria of assessment.

## **DISCUSSION**

Children are prepared to face challenging era in this 21<sup>st</sup> century through particular criteria involved Higher Order Thinking Skills (HOTS) to have skills of critical thinking, creative thinking, problem solving, and decision making (Purnamasari, Handayani, & Formen, 2020). Early childhood students with age of 4-6-year-old develop their mindset in learning skills through motion, thinking, feeling, and interaction to both human and environment. The four categories to illustrate achievement, namely underdeveloped (UD), beginning to develop (BD), very well developed (VWD), and developing as expected, explains students' knowledge, behavior, and skills. Instrument result illustrates 25 children's responses to finger painting activities captured (see fig. 1) to investigate students' interested in and not interested in during finger paintings' activities. It became pre-activity before finger paintings through watching video.

### **Pre-Activity: Apperception.**

Before conducting finger painting, children were recognized what finger painting is and how the technique is. Teacher was playing video of finger painting. By video, children were attracted to visual's movement and audio. This video was used to trigger children curiosity to finger painting. After watching video, some children commented and responded verbally. It was natural for children to ask to something they curious to know. Otherwise, some children kept silent during activities. During pre-activities learning, firstly, children were investigated whether they prefer or not through responses in finger painting. When the students were watching video of finger paintings, some of them responded verbally and some of them kept silent. While video is played, teacher observed children's responses through face expressions, responses, and questions. Teacher selectively took children in observation who were enthusiastic on finger painting, and who were interested to practice. In this case, teacher invites students into discussion. They talked about colors used, painting object about, the technique used in painting, and the motion of fingers to paint. The enthusiastic of children is surveyed and is recapped into table of finger painting's preference instrument. This instrument was used as guidelines for teacher to guide students to practice. There are four indicators in this instrument, namely telling artwork, classical, playing color, and activity of finger paintings.



**Figure 2. Student' preferences during finger painting's activities**

Based on figure 1, it illustrates that 72% of children expressed interest in finger painting activities, but 71% of them found it difficult to apply objects using their fingers. Children 92% are interested in scraping and mixing colors. Meanwhile, 20% of children choose classical activities compared to individuals. This is because when they are in a group they can interact with their colleagues. Then 84% of children are interested in telling about their artworks of finger paintings. It indicates that coloring and playing finger painting are the most dominant students' preferences activities. It effects to self-change in behavior in emotional control. Students are more enthusiastic and happy after having finger painting activities (Kulung, 2016).

### **Main Activity : Playing Color through Finger Painting**

Before playing colors, teacher explained media used in finger painting and theme negotiated to children. Teacher triggered children about kinds of idea able to be applied in painting. The theme, then, agreed to be applied were panorama. Children are asked to tell their experience about panorama to stimulate their creativities and imagination. The process of finger painting's activity was based on institution's curriculum. The current curriculum is an independent curriculum which frees educators more to explore children's interests according to environmental characteristics.

In the early stages, children wet their palms and rubs them evenly on drawing paper. Next, make the background or base color of the image. The background image is usually given a bright and thin color so that later it does not interfere with the image of object being formed. The activity of scraping paint using fingers can improve children's fine motor skills.

The last activity of finger painting is children's presentation of finger painting artwork. This activity provides experience for children to express their ideas through speech that has been visualized through finger painting. Every wash of color becomes meaningful to present.

The table 1 explains four achievement categories to students' achievement. Students known as underdeveloped are when they require guidance from teachers. It is different to students who are in category of beginning to develop. The one step of achievement that students gain is more independent although teacher still reminding them to conduct activities. Students are independent without reminding from teacher in category of very well developed. The last category is developing as expected. In this last category, child has been raised in a whole, independent, and consistent manner even remind his/her friends.

**Table 1. Development of Achievements (Basa, Sutarto, & Setiawan, 2020)**

Assessment code	Achievements
UD (Underdeveloped)	When children do activities, they still have to get guidance and / or be exemplified by the teacher.
BD (Beginning to Develop)	If the child does an activity, teacher must still be reminded of the way to do the activity.
VWD (Very Well Developed)	When a child does an activity, it has been raised intact, the child's independence, and is consistent without having to be reminded by the teacher again.
DAE (Developing as Expected)	When a child does an activity, it has been raised in a whole, independent, and consistent manner and can remind his friend

The process of finger painting is the way for teachers to investigate children to lead students' achievement development based on Blooms' Taxonomy. This theory reveals inseparable education's primary goals into three important domains, namely cognitive, affective, and psychomotor to support sustainable learning goals (Arifin, Febriani, & Anasruddin, 2021). Cognitively, there are six levels of cognition arranged hierarchically-levels. They are knowledge, comprehension, application, analysis, evaluation, and creation (Li, Rakovic, Poh, Gašević, & Chen, 2022) (Ulum, 2022). Creation as the highest level in cognitive aspect expects children to run through the process of arranging pieces to form a new pattern (Hilmi, Fadlila, Ramadanti, Retnawati, & Arliani, 2022). Affectively, finger paintings comprised of attitudes and values developed by children during activities (SAVICKIENÈ, 2010). It involves feelings, attitudes, and emotions. The domain of psychomotor describes action-based children conduct through their activities to develop in behavior or skills as an effect of finger paintings (Aheisibwe, Kobusigye, & Tayebwa, 2021). The implementation of bloom's taxonomy theory is used to assess children's achievements to figure out development. Criteria assessment corroborates with Bloom's are assessed to 25 children illustrated in the table 2 below:

**Table 2 The development of achievement corroborates with Bloom's Taxonomy**

Bloom's Taxonomy/ Assessment	Cognitive	Affective	Skill (fine motor)
Underdeveloped (UD)	Children are not able to mention the basic colors and to mix colors	<ul style="list-style-type: none"> <li>Children have no initiation yet to work. In other words, they are not able to stand up yet.</li> <li>Children are not able to set up an orderly classroom.</li> </ul>	<ul style="list-style-type: none"> <li>Children's fingers are able to bend and move easily and nimbly to smear colors.</li> <li>Children are not able to create an object yet.</li> </ul>
Beginning to develop	<ul style="list-style-type: none"> <li>Children are able to name the basic colors correctly.</li> </ul>	<ul style="list-style-type: none"> <li>Children begin their own activities.</li> </ul>	<ul style="list-style-type: none"> <li>Children smear colors slowly.</li> </ul>

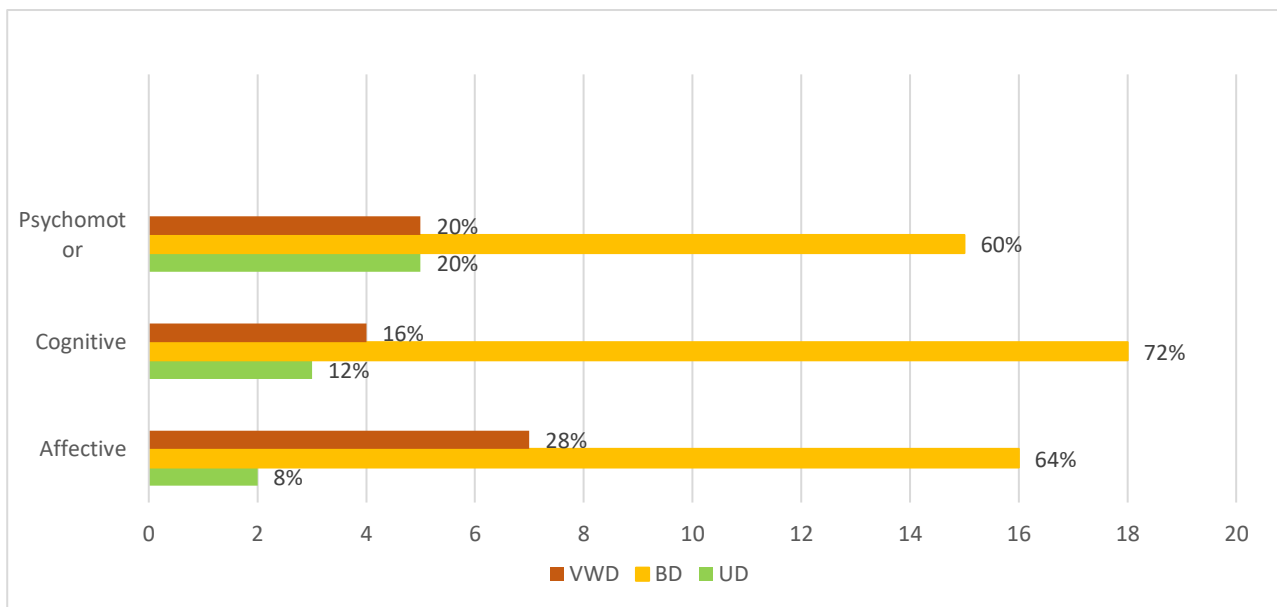
	<ul style="list-style-type: none"> <li>• Children are able to mix basic colors but have not been able to present their artworks.</li> </ul>	<ul style="list-style-type: none"> <li>• Children follow instructions (orderly) with assistance</li> </ul>	<ul style="list-style-type: none"> <li>• Children are able to create objects</li> <li>• Children's artwork creations are not clear and untidy.</li> </ul>
Very well developed (VWD)	<ul style="list-style-type: none"> <li>• Children are able to name the basic colors correctly.</li> <li>• Children are able to mix colors and are able to present their artworks.</li> </ul>	<ul style="list-style-type: none"> <li>• Children independently work their finger painting.</li> <li>• Children finish on time (orderly).</li> </ul>	<ul style="list-style-type: none"> <li>• Children are able to bend and move their fingers easily and nimbly to smear colors.</li> <li>• Children are able to create objects neatly and clearly.</li> </ul>
Developing as expected (DAE)	<ul style="list-style-type: none"> <li>• Children are able to name basic colors correctly.</li> <li>• Children are able to mix colors and are able to present their artworks correctly.</li> </ul>	<ul style="list-style-type: none"> <li>• Children independently work their finger painting.</li> <li>• Children finish on time (orderly).</li> <li>• Children help friends who are in need.</li> </ul>	<ul style="list-style-type: none"> <li>• Children are able to create objects neatly and proportionally.</li> <li>• Children are able to create color gradations.</li> </ul>

Corroboration between development assessment indicators and bloom's Taxonomy (see table 2) illustrates activities of children in categories. Children in the aspect of cognitive with knowledge skill are classified as underdeveloped when children are not able to mention the basic colors and to mix colors. Next, children who are able to name the basic colors correctly and to mix basic colors but they are not be able to present their artworks are categorized as beginning to develop in the aspect of cognitive. Children are categorized very well developed in the aspect of cognitive when they are able to name basic colors correctly, and they are able to mix colors to present their artworks correctly. Then, children become develop as expected in the aspect of cognitive when they are able to name basic colors correctly, to mix colors and to present their artworks correctly.

In the aspect of affective socially and emotionally, children are categorized underdeveloped when they have no initiation yet to work. In other words, they are not able to stand up yet. Besides, they are not able to set up an orderly in classroom. Next, children begin their own activities when they follow teachers' instructions (orderly) with assistance are categorized as beginning to develop ion the aspect of affective. Children are categorized very well developed in the aspect of cognitive when they independently work their finger painting and finish on time (orderly). Then, children become develop as expected in the aspect of affective when they independently work their finger paintings, finish on time (orderly), and help friends who are in need.

In the aspect of psychomotor, students used mostly fine motors in their work of art. Children are categorized underdeveloped in this aspect their fingers are able to able to bend and move easily and nimbly. Besides, they are not able to create an object yet. Next, children began to develop in the aspect of psychomotor when they smear colors slowly in order to create objects. Plus, their artwork creations are not clear and untidy. Children are categorized very well developed in the aspect of psychomotor when they are able to bend and move their fingers easily and nimbly to smear colors and to create objects neatly and clearly. Then, children become develop as expected in the aspect of psychomotor when they are able to create objects neatly and proportionally, and to create color gradations.





**Figure 3. Development of achievements based on Bloom's Taxonomy Theory**

## CONCLUSION

Significantly, this study makes some important contributions to the learning activity of finger paint to increase children's skills into three aspects of Bloom's Taxonomy. Cognitively, finger paint improves children's knowledge into creativity. The categories used as indicators to identify students' development achievements are underdeveloped (UD), beginning to develop (BD), very well developed (VWD), and developing as expected (DAE). The results are found that there was no one children are in developing as expected. In aspect of cognitive, 18 children (72%) began to develop, 4 children (16%) were very well developed, and 3 children (12%) were underdeveloped. In aspect of affective, 16 children (64%) began to develop, 7 children (28%) were very well developed, and 2 children (8%) were underdeveloped. In aspect of psychomotor, 15 children (60%) began to develop, 5 children (20%) were very well developed, and 5 children (20%) were underdeveloped. Meanwhile, the highest percentage of cognitive aspect was found 72% in beginning to develop within 18 children began to mention colors. The highest aspect of affective was 64% in beginning to develop within 16 children ask for help to the process and technique of finger paintings. They ran to go through the process and steps to developing as expected. The highest aspect of psychomotor was 60% that there were 15 children began to develop when they smeared colors unclearly bright to form object.

The limitation of the research was analyzing children aged 5-7 years old through playing finger painting. It contributes to the growing aspect of cognitive, affective, and psychomotor and the development of achievements. After students got finger painting activities, the highest development become very well developed. Children's cognitive development can be seen when children recognize basic colors and mixing colors to form secondary colors and tertiary colors. In the affective aspect, children look emotionally patient, focus on being creative with finger painting and socially have a sense of empathy to share color paint with their friends. In the psychomotor aspect, children practice painting with finger painting by moving their fingertips to dip color paint into the image media and create works of art according to their imagination based on topics given. Besides, this activity can improve the children's fine motor to stimulate their beginning in writing. This activity is suggested for linguist to conduct their research in developing children's communicating through arts. The artistic expression produced through finger painting communicates children's self, their preferences of their creation produced, their experiences, and choices. They communicate meanings of their finger painting creations and responses to materials given and experiences gained.

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