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Effect of compiling LEGO® Play on sensory and motor skills in Toddlers

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Abstract

Toddlers have behavioral styles or temperaments that affect sensory and motor interactions. This research effectively deals with children's emotions in providing education by honing their fine and gross motor skills. The research aimed to determine the effect of composing lego on the sensory and motor skills of toddlers. The method in this research is pre-experiment with one intervention group on 10 toddlers. This study used a questionnaire and observation for 2 months given with playing techniques in the open. Of the 10 toddlers, Eight toddlers were found to have creativity in arranging legos according to their imagination, and two toddlers helped the process of compiling legos with happiness and enjoyment. Lego not only trains sensory and motor skills but helps develop toddlers' creativity.

Keywords: *Child, Toddlers, Motor skills, Creativity, Temperament, Emotions*

A. Introduction

Toddlers are babies aged 1 to 3 years whose motor, cognitive, and physical development stages effectively take place. Affective development includes toddlers' independence in achieving impulse responses with behavior; temperament is very clear when toddlers make social interactions. Cognitively, toddlers will make the transition from sensorimotor to preoperational thinking that goes into language and the development of pretend games. Three-year-olds can speak in sentences and use verbal sentences to communicate and achieve social message goals (Colson & Dworkin, 1997). Toddler skills in the first year are smiling, waving. Developmental milestones at this age are how to play, learn to speak, behave, and move (such as crawling, walking or riding). In the second year, toddler do more of their movements and start exploring new objects and people. At this stage, independence begins to emerge with self-awareness through the mirror, others' behavior, especially adults and older children (CDC, 2020). This study confirmed that therapeutic would be good for toddlers if the nurses and parents had mutual trust (Zaphiriou Woods & Pretorius, 2016). Toddlers tend to transition when they encounter new people in new places (Rutanen & Hännikäinen, 2017).

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This study of three boys with ASD (Autism Syndrome Disease) and 13 developing children was intervening with LEGO play, and the results showed that the three children with ASD experienced increased social initiation and responses in other social learning (Hu, Zheng, & Lee, 2018). Playing LEGO will make children's perspectives change, thereby emphasizing how children are actively transforming and shaping daily family and home life in the context of parents' home-based work settings (Mikats, 2020). If the child has impaired fine motor skills, the child will experience difficulty concentrating and cannot do something well.

This is evidenced in a study conducted on 22 preschool children at Raudhatul Jannah Kindergarten, Pangkalan Panduk Village, Kerumutan Pelalawan District with a quasi-experimental design before and after the test without control and it was found that lego games were able to improve children's fine motor skills (Hendriyani, Yeni Devita, 2018). Playing LEGO can provide a warm aura between parents and toddler's temperament on toddler prosocial behavior. Playing LEGO is the starting point for someone to initiate personal interactions (Larooij, 2018). The clinical experience of 50 toddlers with angry temperaments given toddler LEGO games or composing pictures will positively affect toddlers with changes to facial mimics (Green, Morris; Sullivan, Paula D; Eichberg, 2017). Research related to the effect of lego games conducted in group A at Kindergarten, Istana Toddler Surabaya, found that the average level of cognitive ability of children before treatment was 16.27 and after treatment was 36.17 with the results having a significant effect on children's motor skills (Mawar Santi, 2013). Lego games are also used as a solution in learning mathematics in solving fractions (Toyib, Rejeki, & Kurniawan, 2016).

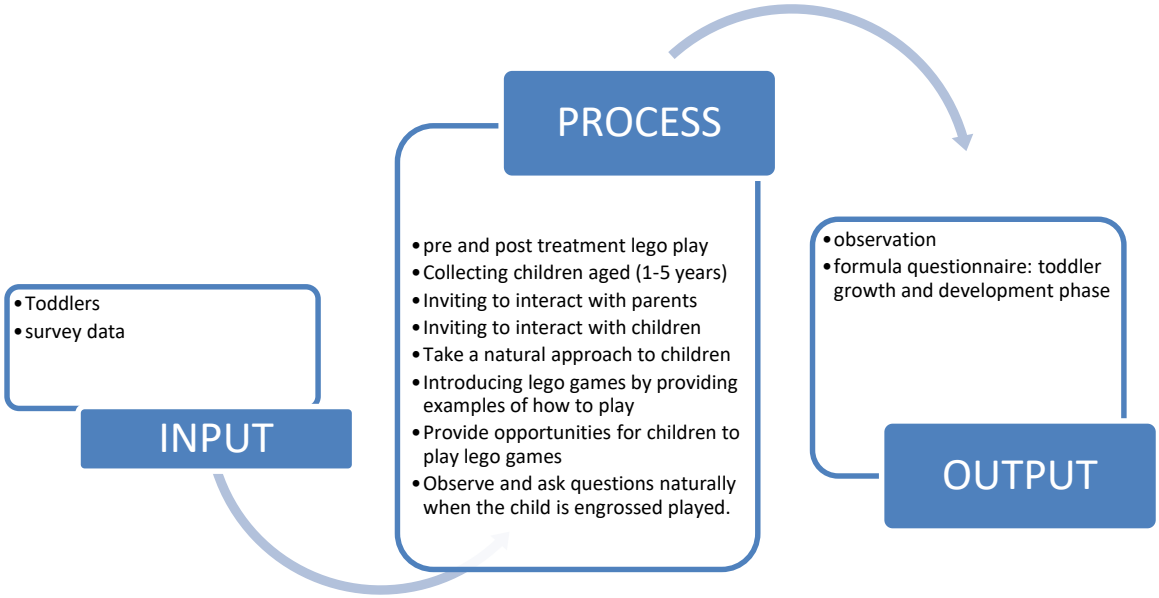
The results of this study found that fine motor skills showed a significant increase in the fine motor skills of children in group A PAUD Mianan V post after the implementation of the lego block game, which was marked by the number of children who had reached the starting stage (MB) and developed according to expectations (BSH). Lego block games can be used as an effective learning method (Mutiara, 2019). Lego games with early childhood cognitive development are related to one another(Maulida, Hendrawaijaya, & Imsiyah, 2018).

Research using interpretive phenomenological analysis on group parents' experiences, their behavior, emotions and temperaments is set in a setting to eliminate saturation (Barros, Kitson, & Midgley, 2008). And this is the same as research conducted by (Noel & Newman, 2008) that mothers are the best planners for their children in achieving good education and care. In this study, the Lego game can effectively increase An-Nur Taman Sepanjang Sidoarjo Kindergarten children's creativity, which is carried out on 10 children using experimental methods(Trisnawati, 2010). The assessment of lego games is seen from the child's development with the achievement of values in the shape recognition aspect of 42.9% (BSH), the color recognition aspect of 35.7% (BSH), the size recognition aspect of 42.9% (MB), and the idea aspect to design at 35.7% (BSB) (Yuliana, 2016). The purpose of this research is how the effect of completing lego games according to the imagination of children honing their fine and gross motor skills and knowing the emotions of toddlers in interacting with others. This is what makes researchers interested in examining the effects of LEGO on children's sensory and motor skills.

B. Methods

The method in this research is pre-experimental with one intervention group. This research was conducted on 10 toddlers by being given lego games. After being given the lego game, observations were made and given several questions in the form of a questionnaire. Lego games

are played in the open. The goal is done in the open so that the child's psychological condition is more comfortable and calm. During the interaction, the child does not experience anxiety and is more relaxed. This activity was carried out in Medan, Sumatera Utara in May – June 2020.



Flowchart.1 Process of research

C. Findings and Discussion

The results of this study were conducted on toddlers who wanted to participate in Lego game activities. Infants aged one year to five years will experience a fast growth and development stage. Toddlers who participated in this study consisted of 1 people aged 1 year, 2 people aged 2 years, 3 people aged 3 years and 3 people aged 4 years, and 2 people aged 5 years. Ages 3 and 4 years are more than ages 1 and 5 years because the number of toddlers aged 3 and 4 years is the most dominant. This because the majority of young cople in the study area have children aged 1-5 years. Several questions describe the feelings and motor skills of toddlers in playing lego games. This can be seen in table 1.

Table 1. A list of questions during the lego game is given

No	Questionnaire	Yes	No
	FEELING		
1	Have fun lego games	100%	0%
2	Do lego games train creativity skills	80%	20%
3	This game, makes you want to create something	70%	30%
4	Do you imitate or imitate your friends in compiling this lego game	40%	60%
5	This game gives you insight	50%	50%
6	You're happy to hang out with friends when the game starts	100%	0%
7	This game allows you to cooperate	90%	10%
8	During the game, are you in leader of the game	40%	60%
9	During the game, you only follow your friends in composing lego	60%	40%
	GROSS MOTOR SKILL		
1	Crawl	30%	70%

2	Run	80%	20%
3	Jump	80%	20%
4	Throw	80%	20%
5	Catch the ball	60%	40%
	SOFT MOTORIC SKILL		
1	Scribbling paper	80%	20%
2	Draw	80%	20%
3	Thumbs up	80%	20%
4	Arranging Beams Into Towers	70%	30%
5	Put Something In His Mouth	50%	50%
	SENSORIC SKILL		
	Recognizing your object and face	100%	0%
	Hear	100%	0%
	Babling	30%	70%
	Starting to understand different meanings	30%	70%
	Start interested with the food aromas	90%	10%
	Imiting a voice is heared	90%	10%
	Saving food	60%	40%
	Shows a reaction to a sorry	80%	20%
	Grabbing an object	90%	10%
	Able to grip an object	90%	10%

In this table, it can be seen that toddlers are very happy to play and hang out with their friends. Toddlers also participate in helping their friends in playing lego building games. Based on the observations made, toddlers are very happy to do new things such as running, jumping and throwing things that make noise. When performing gross motor skills unconsciously, toddlers perform fine motor skills such as crumpling paper, drawing or scribbling on walls, paper and have the habit of inserting their thumbs into their mouths. The effect of lego games (parallel games) on fine motoric development in children aged (3-6 years) at Kindergarten Pertiwi Lojajar Bondowoso by using a pre-experimental type one group pretest-posttest type with a sample size of 40 people with saturated sampling technique shows that there is a difference. Fine motoric development of children before and after being given lego games (parallel games).

When playing lego that appears to be toddlers, gross motor skills are running, jumping, throwing, and catching things. Meanwhile, in soft motor skills, toddlers are dominant in crossing paper with a pen, lifting their thumbs, arranging blocks like towers, and 50% for toddlers who put something in their mouth. This is a natural response when a toddler finds food that is scattered or scattered and takes it and eats it.

Several studies have found that toddlers tend to forget that children learn and communicate through play easily. Adults are a place where the responsibility is to understand to create experiences based on ways that can complete tasks (Gelman, 2014). This lego games will indirectly make toddlers recognize their playmates, listen, and start babbling if they find discomfort. Became interested in the different meanings of playmates. Begins to recognize the smell of food and is attracted to taste it. Begin to imitate what the playmate is doing and demonstrate it. Began to save food by refusing to share it with his friend. 80% of toddlers show sorry reactions when they feel they made mistakes and were scolded. Toddlers really like to climb as if they would reach for something on a table or on a chair. Toddlers are also able to hold objects very tightly. When we take it, it will cry and get angry.

D. Conclusion

In this study (Tisnawati, 2020), lego games were able to increase concentration in autistic children. Research on 17 PAUD children who were given lego games in Banjarmasin found that children could interact socially and work together in building and creating LEGO-shaped buildings (Fatmah, 2020). Playing Lego Enhances Cognitive Development of Preschool Children (4-5 years) ", and it can be concluded that there is a significant development in children's logical thinking by the application of the lego playing method (Hayati, Nuri, & Siliwangi, 2020). The effect of lego games (parallel games) on fine motoric development in children aged (3-6 years) at Kindergarten Pertiwi Lojajar Bondowoso by using a pre-experimental type one group pretest-posttest type with a sample size of 40 people with saturated sampling technique shows that there is a difference. Fine motoric development of children before and after being given lego games (parallel games)(Andarwati, Munir, & Siam, 2019). This study concludes that infants aged five years have a developmental stage starting from motor and sensory abilities. Lego games will hone the motor and sensory skills of a five-year-old baby.

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