



Development of Learning Media (Lego) for Early Childhood

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Abstract

RA Rahmah El Yunusiyyah is one of the RAs in the city of Padang Panjang who has used Lego as a medium for cognitive development. The use of Lego at RA Rahmah El Yunusiyyah is done during free play in class. The purpose of this research is to determine the implementation of using Lego as a cognitive development medium at Rahmah El Yunusiyyah Padang Panjang. The type of approach used in this research is qualitative, with descriptive analysis methods. Information is obtained through interviews, observation and documentation. This research describes the phenomena that exist in group B RA Rahmah El Yunusiyyah, which begins with the data collection stage, data reduction, data presentation and then through the conclusion and verification stages. The results of research regarding the use of Lego as a medium for cognitive development are that children know the function of Lego well so that children can develop their thoughts and imagination into a work using Lego pieces. Lego pieces are an effective game in developing children's cognitive development at RA Rahmah El Yunusiyyah.

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INTRODUCTION

Early childhood education is the most basic education and occupies a position as *golden age* and very strategic in developing human resources. The period of early childhood from birth to six years of age is a critical and strategic age in the educational process and can influence the process and results of a person's subsequent education, meaning that this period is a conducive period for developing various abilities, intelligence, talents, physical abilities, cognitive abilities, language, , socio-emotional and spiritual (Sulistyawati & Amelia, 2021; Supriatna et al., 2022).

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Early childhood education provides efforts to stimulate, guide, hone and provide activities that will produce children's abilities and skills. Early childhood education is education given to children from birth to six years old. In accordance with the uniqueness and growth of early childhood, the implementation of early childhood education is adjusted to the developmental stages that early childhood go through (Saripudin, 2019; Siswanto et al., 2019).

Allah SWT says in Surah Al-Alaq verses 1-3 which means:

"1) Read by (mentioning) the name of your Creator God, 2) He has created man from a clot of blood, 3). Read, and your Lord is Most Merciful".

Cognitive is human reasoning power. Everyone has cognitive abilities because all humans must think when doing something. Montessori explained in his books that learning for early childhood should be through playing. Aor involving objects. According to Montessori, cognitive is everything related to reason and the brain's abilities (Sulyandari, 2021; Pasaleron et al., 2023).

According to Piaget, cognitive is the entire journey of a child's development to form their cognitive abilities, from infancy to adulthood. This certainly involves an important scheme in life. Schemas are the act of reflecting thoughts, this occurs in infancy (Haryono et al., 2022).

According to Vygotsky, cognitive is a child's thinking process that occurs gradually under the influence of external stimuli. Even though he agrees with Piaget that cognitive development occurs gradually and is achieved through different thinking styles, Vygotsky does not agree with Piaget's view that children explore their world alone and form their own inner picture of reality (Fithriya, 2017).

Games *lego* Construction in the form of blocks made from plastic is a play tool that can stimulate children's cognitive abilities, because as a construction, children have to think about how to make a strong foundation and what shape they want to make *lego* through the activity of installing each piece *lego*. Children are required to be able to coordinate various determining elements such as muscles, nerves and brain. If trained intensively, these elements will carry out their respective roles in positive interaction to achieve perfect coordination.

According to Vigotsky, children construct their knowledge based on their experiences. As with block-shaped toys and other constructive toys, *lego* is a constructive game that is useful for children to develop their cognitive abilities.

Based on the results of interviews with Mrs. Armiami S.Pd, Mrs. Rukmailis S.Pd, Mrs. Athnes Novianty S.Pd, Mrs. Lisda H Pasaribu S.Pd, and Mrs. Fitri Yeni S.Pd. Group B RA Rahmah El Yunusiyah Padang Panjang. Researchers received information that there were still children who were confused about how to use Lego, did not know the rules for building, lacked ideas which made children not vary in building Lego and often followed their friends' buildings and not all Lego made children interested in building.

Based on the results of an interview with the principal of RA Rahmah El Yunusiyah Padang Panjang, Mrs. Yanti Gusvita, A.Md, it is clear that there has been Lego at RA Rahmah El Yunusiyah since 2005, but there are not many types, and the number and types of Lego were increased in 2015. Lego is Entering the type of development game, at RA there are 4 types of toys used in all learning centers in play activities, play *motor sensory*, structured and fluid development play, role playing, and literacy. It's all there in Lego *motor sensory*, role playing from Lego that has been built, children can also build examples from Lego *stick* making toys in the yard such as swings, etc., literacy

can also form letters and make names. That's why RA Rahmah El Yunusiyah provides various types of Lego for early childhood children from the age of 16 months because there are many useful things that can build a child's development. In terms of development in Lego games, actually everything can be developed, such as cognitive, language, social, physical, fine motor skills. In the curriculum (2013 curriculum), the developmental aspects that are developed in the Lego game are cognitive, language, artistic, physical and social. Example: social, there are children who play alone and there are times when children play together, playing together includes role playing, many things are built. At QUBA there is also a curriculum like this *affection, aesthetic, child independence, industry, logic mat*, concepts, language, social, *find motor*.

According to researchers, using Lego can stimulate children's cognitive development and make children think more when building, what they will build, what shape it will take, and where they will start first. From the time they want to start building Lego, children are already thinking and experimenting. build. Based on the background of the problem above, the researcher was interested in finding out more about children's cognitive development by observing children and interviewing class teachers regarding the use of Lego. Can using Lego improve children's cognitive abilities? Therefore, researchers want to examine "The Use of Lego as a Cognitive Development Media at RA Rahmah El-Yunusiyah Padang Panjang

METHODS

The type of approach used in this research is qualitative, with descriptive analysis methods (Adlini et al., 2022; Prayogi, 2022). Information is obtained through interviews, observation and documentation (Alfansyur & Mariyani, 2020; Sirojuddin et al., 2022). This research describes the phenomena that exist in group B RA Rahmah El Yunusiyah, which begins with the data collection stage, data reduction, data presentation and then through the conclusion and verification stages.

RESULT AND DISCUSSION

Development is a sequence of changes that mutually influence physical and psychological aspects and constitutes a harmonious unity. In Minister of Education and Culture Regulation no. 137 of 2014 explains that the scope of development according to a child's age level includes aspects of religious and moral values, physical motor, cognitive, language, social-emotional and artistic. Witherington stated that cognitive is the mind, through which the mind can be used quickly and precisely to overcome a situation to solve a problem. Cognitive development is the development of the mind. Thoughts are part of the thinking process of the brain, thoughts that are used to recognize, know and understand (Nuryati & Darsinah, 2021; Sulastri, 2021).

According to Williams, cognitive is how an individual behaves, the way an individual acts, namely how quickly an individual can solve a problem they face. The description given by Williams about the characteristics of cognitive behavior is: i)Think smoothly,namely producing lots of relevant ideas or answers and a smooth flow of thoughts. ii)Flexible thinking,namely generating diverse ideas, being able to change ways or approaches and different directions of thinking. iii)Think original,namely giving answers that are unusual or different from others that most other people rarely give. iv)detailed thinking,namely developing, adding to, enriching an idea, detailing details, and expanding an idea (Muryani & Elshap, 2018).

Jerome Brunner, put forward cognitive theory, namely that in his opinion all knowledge can be taught to all children of all ages, as long as the material is truly appropriate. Anita E. Woolfolk put forward a cognitive definition into three categories, namely: 1) the ability to learn, 2) the overall knowledge that must be acquired, and 3) the ability to adapt successfully to new situations or the environment in general successfully. Furthermore, Woolfolk, stated that cognitive is one or more abilities to acquire and use knowledge in order to solve problems and adapt to the environment (Rozalina, 2018).

Raymon Cartel classifies cognitive into two categories, namely: a) Fluid Intelligence, is a type of cognitive analysis ability that is relatively unaffected by previous learning experiences. b) Crystallized intelligence, are skills or reasoning abilities (thinking) that are influenced by previous learning experiences (Ramadhani, 2021).

It can be concluded that cognitive is an individual's way of thinking to solve a problem or work that is being faced, so thinking is an analytical process of the brain where the mind is used to recognize, understand and know something. The way an individual solves a problem is by first thinking smoothly, secondly thinking in a comprehensive manner, thirdly thinking originally, and finally thinking in detail, with these methods an individual can control a problem according to knowledge and face a problem and adapt to the environment which will be influenced by experience. studied before.

Piaget divided the stages of human development into four stages. Likewise, Islamic scholars also divide cognitive development based on four periods, namely the development period, the period of achieving maturity, the middle period, and the elderly period.

The following are several characteristics related to children's cognition, including: Characteristics of cognitive development of children aged 4-6 years: Can know the function of objects correctly. Can group objects according to shape, color, size and function simply. Participate in reading activities by filling in the missing words or sentences. Can show and name body parts. Can match up to eleven colors. Can use the mind. Try to read by paying attention to the pictures. Can read short and light words such as 4-6 letters. Can solve problems to create a work. Can read simple stories aloud and also with voice. Can distinguish between things that are fantasy or reality (Pertiwi et al., 2018; Marinda, 2020).

Lego is a type of playing tool with small plastic blocks and other pieces that can be arranged into any model and have colorful colors, have different sizes and are in large quantities. When assembling each piece *lego*, Children are required to be able to recognize the various shapes, sizes and colors found in *Lego* so that they can produce building shapes *lego* which is perfect and attractive.

Lego is an educational game tool made of plastic. This game tool consists of square or rectangular pieces, each of which can be plugged in and arranged as desired. What is needed in this game is children's creativity, because children are free to arrange the *Lego* based on their imagination (Hasanah, 2019).

According to Kartini, *Lego* is a type of block game made of small plastic which is famous throughout the world, especially among children or teenagers, regardless of whether it is male or female. These blocks and other pieces can be arranged into any model. Cars, trains, building cities, statues, palaces, airplanes, houses, everything can be made. Playing with color blocks, aka *Lego*, is really fun. This game has no age limit. Everyone from children to adults enjoy playing with *Lego*. The benefits of playing *Lego* for children's development

include: it can help stimulate children's creativity, imagination, concentration and accuracy. Apart from that, it can also be used as a means of developing children's fine motor and cognitive skills (Iga, 2023).

Playing Lego can be done in steps, the steps for playing Lego are as follows: 1) Playing environment: Initial management of the environment by choosing the shape of the Lego that will be built. The teacher prepares the necessary Lego play equipment. Arranging the environment to support positive social relationships 2) Building experience before playing Lego: Reading a book or story that gives children ideas related to the activity. Discuss ideas for Lego play experiences. Provide opportunities for children for social relationships with friends by placing sufficient materials and space. Discuss the rules and expectations for the Lego game being played. 3) The basis for the experience of playing Lego: The teacher gives instructions on how to make a simple form of construction according to the theme, for example the shape of a building. Give each child enough time to be active and creative according to their imagination and creativity (at least 60 minutes to build their work). Teachers ask questions and discuss their development, this is to strengthen and expand children's language. Model appropriate relationships through conversations with each child while they play. Observe and document children's developmental progress. 4) Building on the experience after playing Lego: The teacher supports children to recall their playing experience. Then the children clean up the tools and materials that have been used in playing.

Based on this description, researchers can conclude that to train children to learn to work together, learn to interact with other people, be able to communicate with other people and others, this can be done or trained through games that are fun for children, one of which is through games using Lego which can train abilities or development. child cognitive. In accordance with the problems to be researched, this research is categorized as qualitative research. Qualitative research is an approach that is also called an investigative approach because it usually collects data by meeting face to face and interacting with people at the research site.

The place used as the research object was set at RA Rahmah El Yunusiyah Padang Panjang, precisely on Jalan Abdul Hamid Hakim, West Padang Panjang District. It was carried out in the first semester of the 2022/2023 academic year on 20 September – 03 October 2022, while the subjects of this research were Group B RA Rahmah El Yunusiyah children, totaling 56 children in the even semester of the 2022/2023 academic year. Testing data credibility or trust in data resulting from qualitative research is carried out, among other things, by extending observations, increasing persistence in research, triangulation, discussions with colleagues, analysis of negative cases, and *member check*.

Use of Lego as a Cognitive Development Media at RA Rahmah El Yunusiyah Padang Panjang

The use of Lego at RA Rahmah El Yunusiyah is carried out from Monday – Friday during free play hours. Namely: 07.30-08.00 after the children have finished journaling and flying, it is continued again after snacks at 09.30-09.55 and continued again after noon prayers until they go home. The aim of children playing with Lego during free play time is for the child to enjoy being in class, not feel bored, to help the child's transition in class, to stabilize the child's emotions if his mood is not good, and the child's developmental stage can also be seen from the child building Lego.

Supporting and inhibiting factors in improving cognitive through the use of Lego at RA Rahmah El Yunusiyah

Supporting factors are factors that support an activity through Lego in improving cognitive abilities. An inhibiting factor is something that hinders or thwarts planned activities as follows: Supporting factors are things that support activities such as Lego which comes in many different forms and also support children's cognitive development. The inhibiting factor is the lack of something that supports children's cognitive abilities. As stated by Mrs. Fitri Yeni S.Pd, "The supporting factors are the many variations of Lego available at school and children can produce many kinds of desired shapes, the teacher's job is to protect children and provide a platform for children to be able to play and build all forms. types of Lego in the classroom and how teachers stimulate children to play with Lego. "Inhibiting factors are the limited number of Lego pieces, sometimes there are not enough Lego pieces, some are damaged, children's interest in playing with Lego can also be hampered, lack of stimulation from teachers can also hinder it, or children who are lazy and in a bad mood playing with Lego."

As this was also conveyed by Mrs. Athnes Novianty S.Pd in an interview, *"The supporting factor is that there are various forms of Lego at RA Rahmah El Yunusiyah for children to build various forms that children want. "If the inhibiting factor is that not all children are interested in building Lego, some children are only interested in looking without building and touching the Lego pieces."*

This was also conveyed by Mrs. Rukmailis S.Pd in an interview,

"The inhibiting factor is that children make the same building but there are not enough Lego pieces and sometimes the children fight over the Legos or the children will combine the buildings into one to create a bigger building. "If the supporting factor is that there are accessories in Lego such as flags, figures, Lego on wheels, it will be easier for children to develop their imagination."

This was also conveyed by Mrs. Yulisda H Pasaribu S.Pd in an interview,

"The supporting factor is that there are many different shapes of Lego pieces, interesting Lego shapes, so children who build Lego have more concrete buildings. "The obstacle is that there are still new Lego pieces that children haven't seen yet. When playing with Lego, the time isn't too long, there's a lack of Lego pieces."

CONCLUSION

From the results of research on "Using Lego as a cognitive development medium at RA Rahmah El Yunusiyah Padang Panjang" which researchers have carried out for approximately a month, conclusions can be drawn: The use of Lego as a medium for children's cognitive development at RA Rahmah El Yunusiyah Padang Panjang. From Lego pieces that are arranged into a beautiful building, children can develop their minds, their existing imagination becomes a work, by building children can develop their own concentration without being guided because building requires sharp precision, Lego pieces are an effective game in developing cognitive child. ii) Supporting and inhibiting factors for using Lego as a medium for children's cognitive development at RA Rahmah El Yunusiyah Padang Panjang. As a supporting factor, RA Rahmah El Yunusiyah has many types of Lego provided and from these pieces children can make various shapes they want and teachers must also always foster a feeling of wanting to build Lego in children. The large number of accessories available means that the structure that the child builds will be clearly visible. The inhibiting factors are that there are still many types of Lego shapes that are

still lacking, namely the pieces in each type and this makes children often fight over the pieces, lack of time means that a child's building is sometimes not completed, the child's lack of interest in Lego and It is one of the teacher's duties to stimulate children who are less interested

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