

Analysis of Children's Cognitive Development Through Puzzle Game Activities in Children Aged 4 To 5 Years at Regina Pacis Bajawa Kindergarten

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ABSTRACT

Early childhood cognitive development is one of the factors in the development of children's abilities related to knowledge, understanding and psychological processes of children towards the surrounding environment. Playing puzzles is one form of play that can challenge children's creativity and memory. This game is used by teachers and parents as an alternative media for stimulating the cognitive development of early childhood. The type of research used is a qualitative method with a library research approach or literature study. This study aims to analyze puzzle games in improving the cognitive development of early childhood children aged 4-5 years. Based on the results of the study that has been carried out by the researcher, it is concluded that through puzzles children will learn to understand and process information, solve problems and know something. In this study, the author uses a descriptive qualitative method, which is a problem formulation that guides research to explore or photograph social situations that will be studied comprehensively, broadly and in depth.

Keywords : Cognitive Development, Puzzle Games, Early Childhood Education, Problem Solving, Creativity

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1. INTRODUCTION

Early childhood education is very important to optimize children's potential, this opinion is supported by Suyanto (2005:5) that the purpose of early childhood education is to develop all children's potential so that they can function as whole human beings according to the philosophy of a nation. So early childhood education is very important for children.

Children learn a lot by themselves. But they often need help to integrate what they learn to create more complex concepts. So teachers need to organize activities for children in developing and processing specific cognitive abilities. Children need to be offered activities to play. Which is constructive in nature, namely when they organize information in their brains in patterns that are predicted (estimated) from an early age. Through play activities, children's cognitive abilities can be stimulated to utilize their cognitive, social, and physical aspects (in Aisyah, 2008:535).

According to Malkus, (Sujiono 2011: 78), "Cognitive is a process that occurs internally in the central nervous system when humans are thinking." This cognitive ability develops gradually, in line with physical development and the nerves in the central nervous system. One of the influential theories in explaining this cognitive development is Piaget's theory. Meanwhile, according to Desmita (Wiyani, 2014: 61 - 62) cognitive is all mental activities related to perception, thought, memory and information processing that allow someone to gain knowledge, solve problems and plan for the future or all psychological processes related to how individuals learn, pay attention, observe, imagine, estimate, assess and think

about their environment. Furthermore, Jamaris (2006: 23) states that "the cognitive development of early childhood is in the preoperational phase which includes three aspects, namely (a) symbolic thinking; (b) egocentric thinking; (c) intuitive thinking".

Cognitive development aims to enable individuals to develop their perception, memory, thinking, understanding of symbols, reasoning and problem solving abilities. Cognitive development is influenced by heredity, environment, maturity, interests and talents, formation and freedom (Retnaningrum & Umam, 2021; Simanjuntak & Siregar, 2022). One of the educational games is puzzles because they can affect cognitive intelligence in children (Zianeda, 2017). Cognitive development aims to enable individuals to develop their perception, memory, thinking, understanding of symbols, reasoning and problem solving abilities. Cognitive development is influenced by heredity, environment, maturity, interests and talents, formation and freedom. One of the educational games is puzzles because they can affect cognitive intelligence in children (Zianeda, 2017).

Puzzle games are a type of educational game to train children's mindset in arranging pieces into a whole that has a complete form from a particular image that can train concentration levels (Ayu Astuti, 2019: 3; Sa'adah, 2018). Puzzle games are a game concept of arranging images correctly, by looking at the shape, color and also the size in this puzzle game relying on instinct or intelligence by disassembling and reassembling in accordance with the shape, pattern or color (Mefi Wulandari, 2019: 28; Mulyaningsih, 2021).

2. METHOD

The population in this study was all children aged 4-5 years at TKK Regina Pacis Bajawa, a total of 13 children. The sample in this study were children who met the research criteria, namely children aged 4-5 years who had been registered and were active at TKK Regina Pacis Bajawa.

The data analysis technique used in this study is the content analysis method. This analysis is used to find valid inferences and can be re-examined according to the situation (Mirzaqon & Purwoko, 2018). Library research is a study used in collecting information and data with the help of various materials available in the library such as documents, books, magazines, historical stories, etc. Library research is a theoretical study, references and other scientific literature related to culture, values and norms that develop in the social situation being studied (Sugiyono, 2018). Based on this, data collection in this article is carried out by collecting data and reviewing books, journals, documents that are considered relevant to the study.

The research approach used is qualitative. According to Sugiyono in Fitri, qualitative research is generally made based on a determined problem. Sugiyono's opinion about qualitative research in his book explains that qualitative research tends to focus on the theoretical concept to be discussed (Fitri, 2020). The data sources in the study were taken from several literature analysis results and were based on several previous studies. Meanwhile, the data collection technique in this study was carried out by analyzing theories based on books, scientific journals, Google Scholar and others related to the research theme to be studied. This study was conducted to determine the strategy for developing creativity in early childhood.

The steps of library research have several stages, including collecting journals, books, documents, and websites so that researchers can conclude the problems to be studied. In this study, the data collection technique was carried out by means of documentation. Documentation is a way of obtaining data through sharing documents. Data obtained from documentation techniques tend to be secondary data, namely containing letters, reports, or theories of experts (Fitri, 2020). So, it can be concluded that documentation is in the form of completeness provided through certain documents that are needed in the research process that has been carried out.

3. RESULTS AND DISCUSSION

Results

Understanding of pluze activities. Interview results showed that teachers and children had a positive understanding of pluze games, seeing them as a tool for learning while playing. Children's cognitive development cognitive aspects that develop through this game include problem solving, creativity, and adaptability in new situations. Teachers' experiences and observations teachers' experiences revealed several challenges, such as the need to adapt teaching methods to suit the dynamics of children's groups. The teaching methods used in pluze activities are integrated with other activities. allowing children to apply new knowledge in diverse contexts. The teacher's evaluation process evaluated children's cognitive development through observation during play and small tasks related to the game. Feedback from parents parents gave positive responses, reporting improvements in children's critical thinking skills and social interactions after participating in the activity. Pluze games are played by arranging the pluze pieces that have been provided. Pluze games are used for children's cognitive development and can also develop children's creativity and art. With pluze games children can solve problems and how they arrange them according to what the teacher has arranged before they arrange them.

Pluze games can also train children's patience and cooperation with children. The way teachers observe children playing the pluze game is by watching children arrange the pluze pieces how children solve problems and train patience for individual assessment and for group assessment assessing cooperation how children are trained to fight their selfishness in order to cooperate. Mothers provide motivation for children. There are examples in the pluze game, for example introducing body parts to children, there are usually geometry pluze for class A depending on the theme. The challenges faced by teachers when implementing the pluze game, such as children not wanting to arrange the pluze pieces or giving up, so how do teachers motivate children to make what the teacher tells them to do. To develop a strategy that is adjusted to the theme and the weight of the arrangement according to the child's age. The teacher evaluates the child's cognitive development after the pluze game activity, for example, the child cannot complete the arrangement of the pluze pieces, it means that the problem solving is still lacking, but it depends again, for example, there are children who cannot do it so it must be done repeatedly but do not do the same thing because the child will get bored quickly but it is still light according to the child's needs and development. Based on the interview results, children of TKK Regina Pacis Bajawa can play pluze according to the needs of children's development. Children can already arrange the pluze pieces correctly and according to what is taught.

Discussion

Based on the results of the study at TKK Regina Pacis Bajawa, it was shown that the children were able to play the game of plush well and were able to develop aspects of child development. Childhood is the initial stage of the human life process. It is during childhood that very rapid development occurs. One of them is cognitive development. According to Soetjiningsih, children's cognitive development is influenced by several factors, namely heredity/heredity, environmental factors, maturity, formation, interests, talents and freedom factors. According to Piaget (2005), preschool children aged 3-6 years are in the pre-operational development stage, which means using images and memory skills so that they must be conditioned to learn and memorize. Preschool children have also developed their social interaction skills, such as playing and working together with other children of the same age. Children who get or have their play needs met can be seen in their development patterns (Hidayat AA, 2005).

Improvement of the results of the implementation of learning carried out by teachers is because teachers try to improve the activities that have been carried out. This improvement is done because teachers are one of the determining factors for the success of learning (Sutikno, 2013). Improvements made by teachers are the role of teachers in creating fun and effective learning. Therefore, teachers play an important role in the learning process (Sanjaya, 2009). A teacher is required to have academic abilities, master teaching skills and create media, know and be able to apply methods, strategy models and learning approaches. So that children can develop aspects of development according to their age (Trianto, 2007).

Marta (2017) by playing puzzles challenges creativity and motivation to solve problems so that children want to try until they succeed. Creativity that has an impact on cognitive development which will ultimately get joy and victory when they can solve it. Puzzles can sharpen the brain and train eye and hand balance, train reading, train reasoning, train patience, and children's knowledge (Yuliani, 2003: 6). Puzzle games aim to train accuracy and develop children's cognitive, children's patience and children's concentration (Hamid Bahari, 2013: 23). Indah Kurniawati (2020), stated that with puzzle media students will be able to learn to solve simple problems, recognize colors, numbers and recognize shapes. This is in accordance with the conditions of the results of research in the field, students begin to want to try to learn to solve problems, it can be seen when they are given a puzzle game. In accordance with the results of research in the field from puzzle playing activities, some of the students were able to put together several puzzle pieces by themselves but some other pieces still needed help from the teacher. Meanwhile, some other students still need help and direction from the teacher to put together the puzzle pieces.

The activity of playing puzzles in groups makes children actively involved in playing while learning. They seem to channel their curiosity by actively arranging the puzzle pieces. This indicates that the introduction of number symbols through puzzle playing activities can increase children's learning activities. The use of puzzle media as a supporting medium can create fun and non-boring learning for students. This is in line with previous studies showing that the use of puzzles in learning will be able to create active, creative and fun learning (PAKEM) (Sudarwati, 2018). Puzzle games have also been shown to increase student learning activities where students are stimulated to be actively involved in arranging puzzle pieces (Khomsah, 2013; Setyaningsih & Wahyuni, 2018).

Educational play tools are play tools that contain educational values according to the age and development level of the child which function to stimulate the physical, language, cognitive and social development of the child so as to optimize the child's development. Soetjingsih (2012).

As Taedjasaputra (2001:34) stated that "puzzles have the advantage of having a variety of colors so that they attract children's interest in learning and increase children's endurance in learning". Puzzles can be useful to support the development of many social skills such as doing activities for a certain time, playing with peers, sharing, helping, working together, waiting for turns, and obeying rules (Utami, 2019). Children who can express their joy, anger, surprise, or frustration in the context of play are considered mentally healthy and have the skills needed to express their emotions appropriately in other contexts (Erlita & Abidin, 2021). Rania Putri et al. (2021) stated that toys aimed at children's motor development are very effective in supporting the development of fine and gross muscles and hand-eye coordination. Daily living skills are necessary skills because they are important in adaptation and positive behavior in order to live independently and look good as a result of self-care; all of which can be suggested as the effects of educational toys (Ananda, 2019). Overall, it can be said that puzzle prototypes have a significant effect in developing children's cognitive, social-emotional, and psychomotor development areas.

Niengtinkim Gangte, (2021), stated that playing activities will contribute to the cognitive development process with benefits for improving imagination and memory,

reasoning, creativity, social skills, linguistic abilities, and mental health. Children's cognitive abilities can be developed through playing puzzles. This is supported by Trisyana's opinion, (2013: 3) one of the right media to optimize children's cognitive development is through puzzle media, children's cognitive abilities will develop, they can know and understand, and apply them to puzzle media to arrange puzzle pieces into shapes.

The findings of this study indicate that puzzle games can improve children's cognitive abilities. This further strengthens the findings of previous studies that playing puzzles can improve cognitive skills related to children's skills in solving problems (Permata, 2020). Puzzle media is part of a play method that can effectively improve children's cognitive development in a fun way (Srianis et al., 2014). Games are very good to apply in efforts to develop children's cognitive abilities (Muloke et al., 2017). Many studies have shown that children's cognitive abilities can be developed through games that contain educational elements. Likewise with this study. The results of the study showed that puzzle games have a positive effect on students' cognitive abilities, especially on the symbolic ability to recognize number symbols.

CONCLUSION

The conclusion of the article is that puzzle games play a significant role in supporting the cognitive development of early childhood, specifically for children aged 4-5 years at TKK Regina Pacis Bajawa. This activity helps children develop thinking skills, process information, solve problems, and enhance creativity and memory. By assembling puzzle pieces into a complete image, children learn to recognize shapes, patterns, and colors while improving their hand-eye coordination. Teachers effectively use puzzle games as a learning medium by integrating them into broader teaching strategies. Additionally, feedback from parents indicated an improvement in children's critical thinking and social interaction skills after participating in the activity. This study applied a descriptive qualitative method with a literature review approach, analyzing various theories and previous research related to the benefits of educational games like puzzles in stimulating children's cognitive abilities. Puzzle games also foster patience, accuracy, and the ability to collaborate within group activities. Therefore, it is recommended that the use of puzzle media continues to be implemented and further developed in early childhood education activities. In conclusion, puzzles have proven to be an effective educational tool for enhancing cognitive skills and other developmental aspects in early childhood.

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