

EXPLORATION OF EARLY CHILDHOOD COGNITIVE DEVELOPMENT THROUGH PLAY- BASED MEDIA AT PAUD HANDAYANI

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Abstract. In Early Childhood Education (PAUD), the obstacles that are often experienced are that some children experience delays in the stages of cognitive development that should be appropriate for their age. which is caused by various factors such as the environment, stimulation, and biological conditions. This study aimed to cognitive development of early childhood which focuses on problem solving and language through *playing puzzles* and *visual identification activities in English*, and *dot-to-dot games*, determine children's abilities in solving problems and recognizing images also critical thinking. This research used qualitative methods, the number of participants in this research was 8 people aged 4 years. The results of this research show that early childhood children at PAUD Handayani are able to solve problems & recognize pictures well in English. However, there were children who completed the game in a longer time compared to the others. This indicates difficulty in understanding puzzle pieces when they are flipped. This study shows that each child needs different learning media to support their cognitive development.

Keywords: Early Childhood, Playing puzzles, Visual identification Activities, PAUD.

INTRODUCTION

The cognitive development of early childhood plays a crucial role in shaping their basic abilities, both in academic and social aspects. At an early age, children are in a rapid developmental phase known as the "Golden Age." During this period, they are highly receptive to various stimuli that can influence how they think, recognize, and understand their surroundings. Therefore, it is essential to introduce effective learning methods, which is through play-based media that can stimulate children's cognitive development.

Research by Wulandari (2018) demonstrates how well fishing play media can improve young children's cognitive development, with an average rise from 58.55% (pre-action) to 80.99% (Siklus II). Children learn the principles of cause and effect, weight-light, classification, and numbers and their symbols via engaging and entertaining fishing games.

One type of play-based media commonly used in kindergartens especially in PAUD Handayani is "connecting the dots, puzzle and visual identification" This activity engages children in a fun yet educational task, they are required to connect the dots to form alphabet letters. Through this activity, children not only learn to recognize letter shapes but also practice fine motor skills and also improve their concentration. Such play-based media offers numerous benefits for young children. Learning through play helps them sharpen their ability to recognize symbols, enhance their focus, and strengthen their memory and creativity. Moreover, this activity encourages children to learn independently in an enjoyable way. This is important because at early childhood they are to learn more effectively through direct experiences and active interactions with objects or activities they engage in.

This study aims to explore the impact of play-based media on the cognitive development of kindergarten children, specifically in aspects such as letter recognition, concentration, and fine motor skills. By observing how children respond to dot-to-dot letter tracing activities, this research is

expected to provide insights into the effectiveness of play-based media in supporting early childhood cognitive development.

This research was conducted at the PAUD Handayani, Located at. Jalan Jenderal Soeharto No. 57, Naikoten Satu, Kec. Kota Raja, Kota Kupang. Using Qualitative method, which is involved the creation of play-based media, such as *puzzles* and *dot-to-dot games*, as tools for observing and understanding how children approach problem-solving tasks. The development of these media aims to explore cognitive processes and critical thinking skills, providing insights into children's developmental abilities through direct interaction with the activities.

RESEARCH METHOD

The type of research in this study is qualitative research, This study employs a qualitative research method with a development research approach & observation descriptive, aimed at creating teaching materials for children to assess their cognitive development, also to finding out their cognitive development through *play-based media learning*. (lanjutannya bahas sama emi & Beatrix).

RESULT AND ANALYSIS

Description of participants based on gender and age can be seen in the table below:

Abang	4
Axel	4
Gavra	4
Gabriella	4
Naya	4
Mone	4
Tito	4
Markes	4

Table.1

This study was conducted over at PAUD Handayani , with eight 4-year-old children. Once a week (in 2 weeks on September 27 and October 2, 2024) , research is conducted using a variety of media, such as dots game and puzzles. Information is gathered through observation, consultation with a teacher, and documentation. The study's findings indicate that the use of play based learning has a positive impact on children's cognitive development, particularly in the areas of huruf learning, concentration, and halus motor skills.

Table below, description about student's ability through *play-based media learning*:

Number	Name	Play- Based Media	Stimulated Abilities	Results
1	Gabriela	Connecting dot Puzzle Visual identification games	Concentration, Letter Recognition, Fine Motor Logic, problem solving, fine motor.	Being able to complete well, concentration increases. Able to put together puzzles with minimal guidance also know every images in english
2.	Naya	Connecting dot Puzzle Visual identification	Letter recognition, focus. Logical thinking,	Experienced difficulties initially, but succeeded after being directed, being able to recognize some animal in English Successfully put together puzzles, showing new strategies
3.	Mone	Connecting dot Puzzle Visual identification	Concentration, logical thinking, collaboration with friends	Enthusiastic, but need guidance to complete, gets very excited every time when asking about animal's name in English but, taking a long time to respond. Cooperate with friends, get done well
4.	Markes	Connecting dot Puzzle Visual identification	Letter recognition, concentration	Completes quickly, recognizes letters correctly. Busy with his own games, when asking about animal's name in English Having difficulty at the beginning but succeeding after training
5.	Tito	Connecting dot Puzzle Visual identification	letter recognition Logical thinking , problem solving	It takes longer but works after the exercise is completed. Visual identification session, tito used to being at his own toys rather than answering the questions

				Successfully compiling without guidance, very focused
6.	Axel	Connecting dot Puzzle Visual identification	Concentration, Logical thinking, collaboration with friends	Enthusiastic, but need guidance to complete. When it comes to visual identification session, axel doesn't finishing 2 games before, so he could not focus to answering animal's name in English Successfully put together a puzzle, but need to be guided until the end.
7.	Abang	Connecting dot Puzzle	Concentration Logic thinking Collaboration with friends	Completes quickly, recognizes letters correctly. to busy to answering the questions because he used to being with his own toys after finishing 2 task It takes longer but works after the exercise is completed.
8.	Gavra	Connecting dot Puzzle	Concentration, fine motor Logical thinking, collaboration with friends	Experienced difficulties initially, but succeeded after being directed He need to be directed first before he answering the questions Enthusiastic, but need guidance to complete

Table.2

Salmon (2016) The use of play-based methods is an effective learning approach, allowing children to build their knowledge, interact socially with their peers, be free from pressure, and feel happy. This encourages children to actively participate in learning, thereby enhancing the development of early childhood.

The results show that the *dot-to-dot* and *puzzle* games helps children recognize letters & images in a concrete and enjoyable way, On the other hand it also trains the children's problem-solving abilities and logical thinking, supporting the finding that children are able to complete more complex tasks with the help of educational games. The interaction between children, their peers, and teachers during play also indicates that play-based media can enhance children's social skills, which is an important aspect t also trains the children's problem-solving abilities and logical thinking, supporting the finding that children are able to complete more complex tasks with the help of educational games. The interaction between children, their peers, and teachers during play also indicates that play-based media can enhance their social skills, which is an important aspect of cognitive development, (cognitive development theory) every child has a different stages of cognitive development in their age also at varying speeds, every children have unique ways of learning, playing, and understanding with their surroundings.

CONCLUSION

Based on the research's result, it can be concluded that "play-based media learning" has a significant impact through children's cognitive development, which is they can understanding every games even in a different way, which means every child has their own unique ways to learn.

PAUD Handayani centers with 8 students at early childhood children. showed that the use of play media such as dot-to-dot letter tracing and puzzles and visual identification learning, had a significant impact on the children's cognitive development.

Play-based media learning trained logical thinking and problem-solving abilities in children even there is some of them , initially faced difficulties in the games but gradually became better at assembling every games ,this means that they have showing an improvement in strategic thinking skills, also trained their patience and perseverance during the playing process. Based on the research, play-based media proved to be an effective learning tool that supports the overall cognitive development of early childhood children.

References

- Salmon Amiran (2022) "Efektivty of Play- Based Learning at PAUD Nazareth Oesapa" Journal of Journal of Children's Education, 5(1), June 2016.
- Wulandari Retnaningrum (2018)" Increasing Early Childhood Cognitive Development Through Play Fishin-Media" ŠALIHA | Vol I No. 2, Juli 2018.