

Flashcard Media as a Game Tool to Improve Early Childhood Cognitive Abilities

Leni Evi Matondang^{1✉}, Tri Hastuti², Yulianti Rahayu KW.³, Siti Mustogfirah⁴, Lilis Hidayanti⁵

¹TK Happy Holy Kids Depok, Jawa Barat

²TK Kelurahan 2 Bulukerto, Jawa Tengah

³TK Mekarsari Cilacap, Jawa Tengah

⁴TK Dharma Wanita Kaliayu Kendal, Jawa Tengah

⁵TK Miftahul Huda Demak, Jawa Tengah

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✉Corresponding author:
(eviruthangel1212@gmail.com)



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Abstract:

Improving children's cognitive abilities using flashcard media by playing is the goal to be achieved in this study. This research is a type of experimental research that uses a quantitative approach. The subjects studied were 13 students of group B. Data collection techniques are carried out through observation, interviews, and collecting documentation of each child as preliminary data for researchers. The results that have been collected are then analyzed in a descriptive quantitative manner. Based on the results that have been studied, it is revealed that in the teaching and learning process, the abilities of students can be assessed so that the results obtained, namely flashcard game tools can improve cognitive skills in children, which can be seen from the achievement of all indicators of cognitive ability, namely there is an increase that occurs by two children obtaining Very Good Development capabilities. There are ten children in the developing hope category.

Keywords: Cognitive; flashcard; early childhood

INTRODUCTION

Aspects of physical and psychic development of children are changes that affect each other in a harmonious unity following the scope of development described in the permendikbud (Kemendikbud, 2014), which consists of aspects of the development of religious and moral values, physical motor, language, social-emotional and cognitive. Children's cognitive development is expected to be able to stimulate their critical thinking ability so that they have good competence and learning outcomes, can express opinions and can solve problems by connecting the cause and effect of a problem at hand. Cognitive development is knowledge by a broad sense of reason, inventiveness and creativity, memory

abilities, and language skills that are influenced by children's maturity and environmental influences, but the development of each child is different, so there are also differences in the cognitive development of each child. Cognitive development, according to Piaget (Fadhillah, M.2017), consists of four stages, namely sensorimotor (age 0-2 years), pre-operational (age 2-7 years), concrete operations (age 7-12 years) and formal operations (12-18 years).

This research focuses on the cognitive development of children aged 4-6 years, namely the pre-operational stage; children's cognitive abilities at this stage are extensive which include thinking ability, language inventiveness, and memory ability according to the stimulus and the given play environment influence the growth and development of children (Holis, A.2017), so this is the main reason in efforts to develop children's cognitive abilities according to the stages that should be. However, some problems were found. Namely, some children can develop their cognitive skills, but some children also have obstacles in their development, and some experience problems so that they cannot develop as they should. Child development that must be considered by parents, teachers, and observers of the child is reviewed through prominent child developmental characteristics at each stage. This opinion is in line with what Piaget mentioned that child development in the pre-operational location has four fundamental abilities that need to be adequately stimulated, namely the ability to transform, reversibility, classification (grouping), and asymmetric ability (Yusuf LN, 2012)

Cognitively explained linguistically, i.e., knowing. Cognitive itself has a widespread meaning, namely the acquisition, structuring, and use of knowledge which intellectually has several stages, namely the stage of expertise (Knowledge), understanding (comprehension), application (*application*), analysis (*analysis*), synthesis (synthesis), evaluation (Khaeriyah, E. et al.2018). Cognitive ability in children is an ability children possess in reasoning and thinking complexly to obtain problem-solving. With children's cognitive abilities easier to understand knowledge broadly, but it is found that not all child development is following the stages it should be, so this needs to be analyzed in depth related to the causes of children's undeveloped abilities (Novitasari, 2018). The activity of exploring the surrounding environment through the use of the five senses can increase children's insight and knowledge so that they become a provision for children to continue living as creatures of God who can empower their knowledge for the benefit of themselves and others. Cognitive development in children aged four years reaches 50%, at the age of 8 years it is at a percentage of 80% and at the age of 18 years cognitive development the child gets a rate of 100% so that this becomes one of the most important things for children to maximize their growth (Apriana R: 2019)

The parts of cognition development in children include perception, processing memories, thinking, understanding symbols, as well as being able to reason and solve problems well, as expressed by Piaget, namely about the importance of developing children's abilities so that the improvement of children's perceptual power depends on what he sees so that through stimulus, forming a complete and comprehensive understanding through listening activities and those felt by himself at each event or an event so that children can connect one occasion by one with various other events so that children can understand the symbols around the environment, process reasoning naturally (spontaneously) or scientifically (experimentally) to be able to develop their thoughts.

Dogde (Gunarti, 2019) stated that the purpose of cognitive development as a learning activity is to solve problems; by stimulating cognitive development, it is hoped that children can reason the information and learning resources obtained to observe an event around them, get information through various questions made, as well as formulate solutions and test problem solving through logical thoughts. Children are expected to be able to develop a good

conclusion based on the results obtained by distinguishing each piece of information, comparing, grouping, measuring, organizing, and understanding patterns; this is intended so that children can think logically to get a conceptual understanding of how something can work.

Aspects of cognitive development that are divided into three parts, namely problem-solving ability, logical thinking, and symbolic thinking, will support the improvement of abilities by carrying out activities that resemble objects (pretend play activities) using things different from others, for example, a broom is used as a horse or a chair that is used as a car. The ability to think symbolically in early childhood (4-5 years) is at the level of developmental achievement stated in the Competency Standards for graduates of the early childhood education level at the Permestekdikti 2022 as a form of guidance in seeing the extent of child development. The introduction of symbols in the form of numbers consisting of the numbers 1 to 10 and connecting characters (numbers) with the number of objects are three achievement indicators used in measuring the ability to understand the concept of a number; these indicators are followed from the expression of Susanto Ahmad (2011). Piaget explains cognitive development in the stages of child development in the pre-operational scene, which focuses on four learning outcomes: improving the ability to think logically and critically, being adaptable, and being able to express opinions and solve a problem faced (Novitasari, Y.2018). Problem-solving ability (problem-solving) is a cognitive ability given through a stimulus to children's thinking ability and creativity so that children can independently solve what they face (Munawwirah. B, Parwoto, Ilyas, N.2021).

Cognitive ability is essential in improving a child's development, a). Can improve the child's thinking ability, which is based on what he sees, listens to, and feels so that the child can accept and understand better; b) Train the child's memory ability to an event or event he is experiencing; c) Children can think complexly by relating one event to another; d) Increase the child's natural reasoning power towards something or a planned event; e) Able to solve the problems he faces; f) Get to know the symbols around it (Retnaningrum, W.2016).

The development of cognitive abilities can be stimulated through play activities; this is explained by Dr. Ari Brwon (American Academy of Pediatrics 2011), who explained that the way to promote a child's developing brain is through the provision of free play time. This can help children solve problems, think creatively, develop their reasoning and motor skills and help children learn to entertain themselves with one valuable skill (Goldstein, J.2012). The implementation of learning carried out through play activities can help children experiment, learn to understand things independently, and gain new meaningful experiences and emphasize the development of a child as a whole (Curriculum Center Direkt.PAUD.2007), the result of children's cognitive structure will be improved through experiences involving children physically and mentally obtained in real life from various activities of children's social interactions with peers and even adults (Retnaningrum, W.2016). Another point also stated by Edgar Dale (Rahman, T., & Fuadatun, F. 2017) explained that improving children's abilities is based on concrete (direct) learning outcomes through experience, the surrounding environment made in the same form in the form of verbal symbols.

One of the media for developing children's cognitive is flash cards. According to Alamsyah Said and Andi (Agnes, 2019), "another word for learning cards is flashcards." Learning activities are carried out through play activities using game tools, namely using flash cards according to Arsyad (Agnes, 2019) explained that the media component in the form of square-sized paper containing material poured in the form of visuals, texts or symbols can be used in helping children understand learning more young so that children's

abilities develop as desired. According to Rudi Susilana and Cerpi Riyana (Putri, 2018), Flash cards are made with a size of 8 x 12 cm or length adjusted to the desired one. Flash cards can be used as a vital tool to train children's responses to activities presented according to the aspects developed, and flashcards contain images of objects, animals, plants, and so on that have messages/materials or ideas and are conveyed through picture cards on two sides equipped with image captions. This media is one of the media that can make it easier to develop aspects of child development through flashcard learning media which contains images and text that have been adjusted to the abilities of each child (Altiner, 2019).

Flashcard is a card that contains simple letters, words, and images where letters are written in capital or both to make it easier for children to understand (Azabdaftari, B., & Mozaheb, M. A. (2012). The application of flashcards, according to Niwayanekayantini, explains that word cards as a game to recognize symbols such as letters or words that have images and have attractiveness and increase children's interest to motivate children to learn; this game can create a conducive learning atmosphere without putting more pressure on children in learning (Rohmawati, D., & Khotimah, N. 2015)

Flashcard learning media has unique characteristics, such as making it easier to convey a message or information on the image on each side of the card to make it easier to store in the child's brain memory because there is a combination of images and text that will make it easier for children to get to know the concept of something and get to know objects/shapes that are loaded visually. Flash cards have some conveniences in their use which are explained by Susilana and Riyani (Nirwati, N. 2022), revealing that the advantages are described as follows a). have practical value in terms of use, do not require special skills, and their manufacture is not complicated; b). a flashcard is easy to carry anywhere, placed, and can be used outside the classroom; c). Flash cards present a combination of images and text to make it easier for children to remember a shape/concept; d quickly). It pleases the child, as it is used in play activities.

The game uses flash card media delivered by Alamsyah Said and Andi Budimanjaya (in Agnes, 2019) about the steps to use flash card media, described below: 1) the teacher gives the child a flash card in a closed state (the text is a closed part) to each child and should only be opened if it has been directed; 2) the teacher instructs the child to open the card simultaneously, then the teacher counts down; 3) each child is asked to find a row according to the numbers on the card he has using sound to make it easier; 4) search activities in a predetermined matter of minutes and countdown when the session is about to end; 5) At the end of the game, the teacher and the child check together whether all the children have joined his ranks according to the numbers obtained; 6) Furthermore, the teacher gives appreciation to the complete and correct lineup.

METHOD

This research is an experimental study, which will be described in a descriptive quantitative manner to explain the value of variables set by one or more variables without comparison. This research was carried out using a Quasi-Experimental Design research design. This research on cognitive abilities had a total of 13 students in group B, as many as 13 children, to determine the level of cognitive skills of children through playing flashcards. The research design used was one group pre-test and posttest. Data from the study was collected through observation methods, giving tests, and taking documentation. The data acquisition from the research results was then analyzed using simple quantitative formulas. This technique is used to explain children's abilities following the children's ability data that have been collected during the ongoing research process; the research design is described in the following design table:



Picture 1. Research Design

RESULTS AND DISCUSSION

The description of this study is described descriptively in this section about children's cognitive development through flashcard play activities before and after treatment based on predetermined indicators. The results of such data are outlined in the following table:

Table 1. Comparison of pretest and posttest results

	<i>N</i>	<i>Range</i>	<i>Min</i>	<i>Max</i>	<i>Sum</i>	<i>Mean</i>	<i>Std. Dev</i>
Pretest	13	4	2	6	58	4.46	2.025
Posttest	13	2	6	8	82	6.31	.751
Valid N	13						

The results of the descriptive analysis table of cognitive ability data in children in the pretest implementation with a total sample of 13 children showed that children's cognitive abilities through the use of flashcards as a form of child treatment had an average power of 4.46 with a minimum value of two and a maximum of six and a standard deviation of 2.025, then the class on the child's ability before treatment is four.

The results of the table of cognitive abilities of children before treatment in the implementation of the pretest with a total sample of 13 children showed that children's cognitive skills through the use of flashcards as a form of child treatment had average abilities, namely, 0 children developed very well, eight children grew very well, 0 children began to create, five children were not yet developed.

Table 2. Percentage of Data on the Results of Children's Cognitive Ability Levels Before Treatment

Indicators	Percentage
	Children's Cognitive Abilities Using <i>Flash card</i> Media
Undeveloped	38,46 %
Evolving Expansion	0 %
Develop as Expected	61,53 %
Very Well Developed	0 %

D obtained the average result of improving cognitive abilities according to indicators, namely mentioning the symbol of numbers 1-20 by children and calculating using the character of numbers, was in the pretest results of 38.46% (Undeveloped) and 61.53% (Develop as Expected). Furthermore, the percentage of yield of 0% obtaining results begins to develop (Starting to Develop) and by 0% is at the impact of developing very well (Very Well Developed).

Based on data analysis and observation of the results of children's cognitive abilities before the treatment, it can be seen that children are still less focused because they show flashcard numbers at the speedy time, so children are not correct in mentioning the numbers shown. This development activity is usually found hal-unique things, namely children competing to name the flashcard numbers shown but not quite right in saying them because seeing that there are still children who are not right in the mention of the numbers, then in

the next cycle, the researcher will show the flashcard the number to the protégé with the addition of the time that was only 3 seconds will then become 6 seconds in the hope that the children will be right in the mention of the number shown.

The results of the table of cognitive abilities of children after treatment in the implementation of the pretest with a total sample of 13 children showed that children's cognitive skills through the use of flashcards as a form of treatment of children had an average ability, namely 0 children were not yet developed (Undeveloped), 0 children began to create (Evolving Expansion). it was seen that 11 children developed according to expectations (Develop as Expected), and two children developed very well (Very Well Developed).

Tabel 4.6 Data Hasil Presentase Tingkat Kemampuan Kognitif Anak setelah *treatment*

Indicators	Percentage
	Children's Cognitive Abilities Using <i>Flash card Media</i>
Undeveloped	0 %
Evolving Expansion	0 %
Develop as Expected	84,61 %
Very Well Developed	15,38 %

D obtained the average result of improving cognitive abilities according to indicators, namely mentioning the symbol of numbers 1-20 by children and calculating using the character of numbers; out of 13 children, there were 11 children in the ability to develop as expected with a percentage of 84.61%, two children developing perfectly with a share of 15.38%. i.e., there are 0 children in the starting to establish category (Evolving Expansion) with a rate of 0% and 0 undeveloped children (Undeveloped) with a percentage of 0%. Children's cognitive skills showed that through flash card game activities in group B of Nurul Quran as Shafa Kindergarten in 2021, there were changes in cognitive abilities that were seen when children played flash cards; most of the 5 out of 13 children were not able to name numbers sequentially and after being given treatment increased to 11 out of 13 children obtained the developing category outstanding.

CONCLUSION

The conclusions of the study from the results that have been described, based on events that occurred during the study, were carried out, showing that the application of playing flash cards to stimulate cognitive abilities in children has increased the achievement of mental ability indicators in children characterizes this. This research conveys several suggestions that are expected to be input that can be used in the future, namely setting up the classroom to create comfort for children so that in carrying out activities, children become focused and are expected to make more varied, engaging, and creative learning media as a support for learning in terms of shape, color, and aspects developed, educators in Happy Holy Kids Kindergarten can apply to play activities using flash cards to improve children's cognitive abilities.

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