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Comprehending The Concept Of Comparison In Early Childhood Through Block Games

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Abstract

Early childhood was the most crucial age in obtaining an education. In Early Childhood Education (PAUD), six development aspects need to be considered by the teacher. Those aspects included NAM, cognitive, physical motor, language, socialemotional, and art. These developments could stimulate various activities. Education in early childhood is not only about academic skills, but teachers must be able to develop children's creativity. One of the crucial development aspects was cognitive. Children's cognitive development could stimulate through various activities, including comparison ability. Comparison ability was an activity or comprehending comparison, both in the form of images and concrete objects. Comparison is one of the activities given to children to stimulate cognitive development. However, judging from the phenomenon in the field, the lack of teacher creativity in utilizing APE (Educational Game Tools) made the children less comprehend the concept of comparison. So, it was provided solutions by researching and comprehending the concept of comparison through block games. This study aimed to provide comprehension to B group students at Kumara Sari 1 Penarungan Kindergarten regarding the concept of comparison in early childhood through block games, as well as improving the creativity of the students and teachers. The block games aimed to develop cognitive and physical motor skills aspects in early childhood. This research was qualitative research with the model of Miles and Huberman. In this model, there were several stages conducted, including data reduction, data display, and conclusion (verification). Qualitative research must be conducted directly so that researchers can find the needed data. The data collection techniques used by researchers were observation, interviews, and documentation. This study's primary informants or respondents were B group students, then B group class teachers and school principals. The results of this study stated that there was an improvement in the B group student comprehension at Kumara Sari I Penarungan Kindergarten regarding the concept of comparison through block games and increasing the creativity the students possessed. So, the block games could be used by the teachers to improve children's comprehension of comparison abilities or the ability to compare objects such as concrete objects, pictures, and videos. In addition, the game tools could be used to improve students' creativity.

Keywords: Block Games; Comparison Ability; Early Childhood

Introduction

Education is essential and must be obtained by someone from an early age. Generally, education is divided into two types: formal and non-formal. Formal education is provided to each individual through several stages, such as early childhood education, primary education, junior high education, senior high education, and universities. Meanwhile, non-formal education is outside formal education, such as family and society. Along with the era, education is increasingly advanced, starting from early childhood education. Childhood is the most critical age in each development. The existence of formal education received by children, in which they could develop their creative ideas. In addition, formal education provides a place or facilitates the development of children's creativity. In non-formal education, they do not necessarily have the opportunity to develop their ideas and creativity (Sudarsana, 2020). Children's age is typically referred to as the Golden Age, which means that during this golden age, the children have abilities and uniqueness in themselves that cannot be repeated. The Golden Age is the fastest period of brain development in children during their lifetime (Hulukati & Rahmi, 2020). It is called the golden age since children are experiencing a period of growth and development in which the brain plays a central role in forming children's intelligence (Sari & Setiawan, 2020). Children easily imitate what they see, hear, and feel at this age since their brains are like absorbent sponges. Early childhood is the most crucial or essential age in child development (Sukrawati, & Rismadewi, 2023).

As we know, early childhood has six aspects of development. 1) The cognitive aspect is the ability to develop the child's brain, the catchability or memory capacity of the child itself (Sudarsana, et al., 2020). In cognitive development, the child quickly imitates and remembers what they see, feel, and hear through experiences or activities that the child has experienced. 2) Physical motor is an aspect of development in early childhood that is related to an individual physical or physical development. This development could be divided into gross motor skills and fine motor skills. Gross motor skill is a developmental movement in the coarse muscles or large muscles of children found in the body. Fine motor skill is a body movement that involves small muscles such as finger muscles. 3) Language Development is the child's ability to speak, where the child can express opinions, ask questions, etc.

Children's Language development is not only through speaking, but generally, it can be seen when they smile, cry, and laugh until they can express opinions to parents and others. Typically, in early childhood education, their speaking ability is stimulated through storytelling activities, both fairy tales and telling experiences that they have experienced by them. 4) Social-emotional development, seeing from this development, is undoubtedly related to social and emotions in children. This social development in early childhood is the child's adaptation ability towards their surrounding environment, such as being able to play and interact with their peers until they can interact with the broader environment. Meanwhile, emotional development in children is the way for them to convey things through feelings, besides children's sensitivity in conveying feelings to others. 5) Development of religious and moral values.

This development is related to children's manners and ethics when talking with friends and parents. In addition, the children's comprehension of religion, in which they recognize how to pray according to the practiced religion. In this development, children are also trained to recognize values regarding religious rules so that they understand these values from an early age. This development is essential when children socialize with the surrounding environment. 6) Artistic development is the child's ability to do creativity or develop abilities and talents. Such as the children's ability to develop singing, dancing, and coloring talents. In addition, the ability of children to make a craft, such as flowers from paper, as well as crafts from second-hand goods, such as cars from bottles. In this development, children are trained to be confident in showing their work in front of friends in a class or of many people (Kurniawati, & Sutharjana, 2023).

As explained above, the development of children could be done through formal and non-formal education. In formal education, teachers can provide students with many activities to develop these development aspects. Education in early childhood is given to children aged 0-6 years, which could develop the potential possessed by early childhood. In addition, education in early childhood is carried out to stimulate children to develop the aspects of the development of children (Nurjani, 2019).

National education in early childhood is training or coaching for a child from 0 to 6 years old, helping to stimulate or provide a stimulus that could help growth and development in children to help provide readiness for higher education. The regulation of the Minister of Education and Culture number 137 of 2014 in article 4 regarding stimulation given to early childhood is carried out to help the process of growth and development in the body and spirit of a child based on the level of child achievement development. This regulation also explained that stimulation could optimize their holistic and integrative development, helping develop children's skills, attitudes, and knowledge.

Early childhood has creative potential; however, their potential still needs to be developed. Children's creativity must be stimulated early since this age is the beginning of life. At an early age, individuals are also undergoing a very rapid growth and development process. Given the importance of developing children's creativity from an early age, a teacher must have ideas that could increase creativity in children. The creativities done by children could stimulate the development of children, in which by developing creativity, children could express their ideas. In addition, they could also convey their ideas. Every child has different creativity and ideas. Expressing children's ideas could be done by utilizing second and educational game tools in the classroom.

In the learning process at Early Childhood Education (PAUD), there are several principles of learning, such as prioritizing the growth and development of children, which could stimulate their abilities such as creativity and potential; learning could be done by learning while playing and vice versa, utilizing media during learning such as the educational game tools as well as could utilize the technology that they had. The six early childhood development aspects could be trained or developed in various ways. One activity that could be given to early childhood is a block game, which is a familiar game to children. Block games are games where children can arrange blocks according to size, shape, and color. In this game, children could arrange blocks with various shapes, such as the shape of a tower, house, and so on. Generally, blocks are made of wood which is safe and comfortable for use in early childhood. Block games in early childhood could be done in the classroom, even in the schoolyard. In this game, the most critical aspects of development are the cognitive and motor skills aspects. The cognitive aspect is very important in determining children's future success (Izzati & Yolsuyfiend, 2020).

The block game is also included in an activity that could increase children's creativity. In the game, children could give ideas from themselves when arranging the blocks into shapes such as towers and also other buildings. Block games also require accuracy and ideas which are able to solve even when arranging blocks.

However, the problem that occurs at this time in the world of education, especially in Early Childhood Education (PAUD), is the need for more comprehension of children in carrying out activities to compare the shape of objects, colors, and sizes. This is because teachers need to be more creative in providing learning activities that could develop children's cognitive and motor skills. This problem is also found in one of the schools in Penarungan Village, Mengwi Sub-district, namely Kumara Sari I Penarungan Kindergarten. In which the teachers have not been optimal in the usage of educational game tools (APE) that have been provided by the school, such as blocks, could be done to develop aspects of cognitive and motor skill development for children. Teachers must understand the benefits of using educational game tools (APE), namely blocks, for children to comprehend comparison activities.

Method

This research used qualitative research with a case study approach. The purpose of this research type is to determine the children's comparison ability in block games, which could develop cognitive and fine motor skill aspects. This study about the block games as a medium to improve comparison skills in early childhood was conducted at Kumara Sari I Penarungan Kindergarten. In this school, there was a problem that students needed to recognize comparison activities through educational game tools such as blocks. In addition, teacher creativity is needed to improve the student's ability to develop cognitive aspects and fine motor skills through educational game tools (APE). In collecting the data, it was used several kinds of techniques for collecting data. The data were collected using observation, interview, and documentation techniques. Data analysis in this study used Miles and Huberman model. Sugiyono (2009) stated that there are several stages carried out in this model, including data reduction, data display, conclusion, and verification). Qualitative research must be carried out continuously to discover the data needed.

Results and Discussion

The results of this study could be developed by looking at the development of creativity nowadays, which is diminishing. This is due to various facts in the field that still use ways that emphasize the development of academic intelligence so that children's creativity development is less considered. The educational learning process that emphasizes academic intelligence could put out children's creativity since the situation and conditions at the time of learning do not support the improvement of children's creativity.

The research entitled comprehending the concept of comparison was conducted at one of the early childhood education institutions at a Kindergarten in Penarungan Village, Mengwi Sub-district, Badung Regency. The institution is an institution under the auspices of the village foundation called Kumara Sari I Penarungan Kindergarten. The subjects of this study were B group students with a total of 6 classrooms, and each class had 24 students aged 5-6 years. Those ages have a good level of maturity in receiving stimulation or the memory capacity to understand the materials more complex. They can follow or be ready to obtain education to a further level. This maturity could be done by developing all aspects of development found in early childhood. These aspects include cognitive, physical motor, language, NAM, art, and social-emotional. In addition, it also develops the creativity of children.

In this study, it was limited the research problem to reduce confusion about the terms discussed in the study. The researcher only limits the problem of comprehending the comparison concept in early childhood through block games. The researchers chose this title since there were problems at school regarding the need for students' understanding of the concept of comparison and the lack of creativity possessed by students and teachers. Seeing this, we provided solutions to these problems by conducting research with the title comprehending the concept of comparison through block games. The results of the study stated that there was an improvement in students' comprehension of the comparison concept through block games, as seen by the development of students' creativity in block games and being able to compare blocks.

The case that occurred at Kumara Sari I Penarungan Kindergarten is one example of the problems that occur in the world of education in early childhood education (PAUD) in which there were no students yet comprehending the concept of comparison. This can be done or given to them by providing light activities based on the student's age level. Besides, the teacher could also develop the ability or creativity of children to comprehend the concept of comparison. Comparison ability is one of the intellectual abilities since, in the process of comparing, students do the thinking process and solve problems by themselves.

1. Comparison Ability

Developing existing abilities in children requires an experience or providing an activity to remind children of events that have been experienced. They could learn through experiences that have been experienced. Since the children's ability could be measured from their memory. Their ability is a maturity or readiness that exists in children. For instance, Early Childhood Education (PAUD) could not be forced to learn about reading, writing, and counting since the children would have a developmental stage of ability or immaturity in comprehending them. However, we should still provide such learning; of course, it can be done simply according to the ability and maturity of children's understanding. Providing an understanding of math education in early childhood is very important. Math introduced in early childhood could be used as a way to solve problems encountered in everyday life.

The National Council of Teachers of Mathematics (NCTM) stated that there were several mathematics learning basics for Early Childhood Education (PAUD). These basics included numbers, geometry, measurement, and algebra. As has been explained, in early childhood, a child has a powerful memory and a good capacity to capture; therefore, their brain is always said to be like a sponge that easily absorbs and understands new things that were used as their experiences. Therefore, preschool or early childhood age is perfect for understanding basic mathematics, especially the concept of understanding comparison. At this age, it could be used as an opportunity to develop the ability or interest of the child to introduce the concept of counting, recognizing patterns, composing shapes, and measuring. Comparison is a part of essential math learning in early childhood. The purpose of it is to find a difference in objects, either in the form of concrete objects, pictures, or videos.

Basic mathematics in early childhood aims to recognize the basics of counting concepts, subtraction, and recognizing geometric building shapes. In the regulation of the Minister of Education and Culture number 137 of 2014, it is stated that in early childhood cognitive development, especially the concept of comparison, several activities are mentioned:

- a. Comparing the size of more than, less than
- b. Comparing large and small sizes
- c. Ability to think logically, classify, pattern
- d. Able to think in real or concrete terms.

Comparing is normal in early childhood, learning activities, and even playing with friends. Comparison is the ability to compare what early childhood possesses, a concrete object, pictures, and videos. Comparing objects based on size, such as long and short, high and low, lightest and heaviest, and so on. Comparing objects based on color, shape, and size could be done by collecting objects, then children compare or group these objects based on size, shape, and color (Wedani, 2021).

Comparison ability is one of the abilities in early childhood to develop cognition. In which it is known that cognitive is one part of the six aspects of development in early childhood. In addition to cognitive aspects, the block games also involve physical motor skills or abilities of the child's physical, namely small muscles. In the activity of block games, it requires fine muscle strength of children, where they are able to move or arrange blocks according to the shape, color, and length of the blocks using their hands. Therefore, comprehending the concept of comparison, which is assisted through block games, could develop two aspects of development in children, namely cognitive aspects and fine motor skill aspects. The cognitive aspect is the ability to develop the child's brain, develop catchability or memory of the child. Talking about cognitive aspects in early childhood would not be separated from the psychological figure Jean Piaget (1896-1980). Jean

Piaget was able to integrate several aspects, such as biology, psychology, and logic, in explaining how a person achieved or gained knowledge. In early childhood, Piaget stated that there were several ways to gain knowledge or experience in children. These ways included providing activities that could help children to provide experiences and associations such as nature exploration, experiments.

Physical motor skill is an aspect of early childhood development related to physical or personal physical development. This development aspect could be done through activities centered on muscles and neurons that are coordinated with each other. This physical motor development could be divided into two, namely gross motor skill and fine motor skill. Gross motor skill is a developmental movement in the coarse muscles or large muscles of children found in the body. For instance, in large muscles such as leg and hand muscles, children can move all muscles to appear to have new skills, such as running, playing football, riding bicycles, jumping, and so on.

Gross motor development in early childhood must be mastered thoroughly and paid attention to by parents and teachers. This would affect the fine motor development stage. Fine motor skill is a body movement that involves small muscles such as finger muscles. Activities that could train children's small muscle development such as squeezing paper, holding pencils, writing, mixing colors with hands, grasping, picking up objects, cutting, sticking, tearing an object, and so on.

Currently, the government is aggressively implementing the merdeka curriculum. merdeka curriculum is a learning method in which students are free to develop their talents and interests. In this curriculum, the teacher is only a facilitator in learning, where students can develop their interests and potential. This curriculum emphasizes creative teachers in utilizing surrounding materials as learning materials or media. For instance, teachers invite the students directly to the field, such as on the plant's theme subject, which is the teachers could directly invite them to go to rice fields or practice directly planting plants at school. Therefore, understanding the concept of comparison is closely related to teacher creativity and also merdeka curriculum. If the teacher is creative, then the teacher could utilize the game tools available at school as learning media. In addition, the teacher could also invite students to observe objects directly for comparison activities. For instance, inviting students to the garden, observing taller and shorter coconut trees. This is called learning while playing, in which students can play, explore, and seek experience by going to the school environment to observe the surrounding environment. After that, the students must be able to convey the results of their observations in front of friends or their teachers.

2. Definition of Game

Game is one of the things that is done by children, both traditional games and games using props. Playing is a very fun activity, especially for children. In the world of education nowadays, many schools implement playing while learning or vice versa (Abdur Khobir, 2009). This learning method is not only used in early childhood education. However, the method of learning while playing, or vice versa, has now been applied from early childhood education (PAUD) to senior high school (SMA). The method is used to increase students' learning interest; besides, it could add to the student's experiences and reduce their boredom in the learning process.

Playing for children does require a lot of time. Especially in early childhood, in which they spend more time playing and interacting or socializing with their peers at school. In playing activities, besides training the children's socialization, the play could foster a sense of friendship with friends. Such as, children are being able to share toys and take turns in using game tools. By learning while playing or vice versa, a teacher

could assess how children interact with their peers and whether they can socialize or interact with their friends.

Certainly, play trains the aspects of physical motor development in early childhood. In addition to training children's physical motor skills, playing also requires cognitive abilities to solve a problem and train the children's social-emotional skills and language or speaking skills. In this context, it would focus on learning while playing or vice versa to train children's cognitive and physical motor development. According to Abdur Khobir (2009), children's play has several benefits. These benefits include:

- a. Playing could train gross motor strength, which involves large muscles in the child's body, such as running, jumping, and jumping.
- b. Playing could train coordination between the eyes and also the mind, such as playing activities carried out with rules or orders from friends so that children must focus between hearing, thoughts, eyes to the speed of running and catching objects.
- c. Playing could encourage or increase children's creativity, such as activities to arrange blocks, and form various shapes from plasticine.
- d. Playing trained a sense of responsibility, togetherness, and children could practice to obey the rules that apply in-game activity. In addition, playing with friends or groups could train children's cooperation with their friends.
- e. Playing with friends, children knew their potential, such as strengths or weaknesses in themselves. For instance, children needed to improve in playing activities, such as being fast enough to run or faster at listening to instructions.
- f. Playing can play the characters they like or become someone they dream to be, such as playing the role of being a doctor, police officer, and so on.
- g. Playing could fulfill the needs of children that have not yet or did not get at home. For instance, if children did not have swings or hand puppets, they could use the facilities provided by their school.
- h. By playing, the children could improve social relationships with peers, learn how to solve problems encountered around them, and know which one right or wrong behavior.

From the explanation above, the learning method of playing while learning or vice versa could be conducted in early childhood education. Playing could train the children's development, such as physical motor, cognitive, social-emotional, and language development. During this period, a teacher must train the mind of the child. Improving the children's self-confidence through various activities. Many children recently are not able to interact or socialize with peers. This is due to the child's lack of ability to socialize or play in the home environment. Normally, these children like to spend a lot of time at home and lack interaction with the environment. In addition, those children who lack interaction with peers would be more challenging to get along at school and are less active in participating in the learning process.

3. Block Games

Early Childhood Education (PAUD) is one institution with a lot of learning media APE (Educational Game Tools). Children often utilize the game tools during break time. For instance, one example of APE that is often encountered is blocked. Blocks are a media or game tool with various shapes, colors, and also types of block shape sizes. Blocks could be one of the media used to comprehend the concept of comparison. Everything, activities, and objects seen can be used as a game for early childhood. Therefore, as an educator in Early Childhood Education (PAUD), a teacher must be able to increase his/her creativity in forming a learning media. Learning media used by teachers could help them in delivering material to students. Media assistance also makes it easier for children to understand the material presented by the teacher. In early childhood, concrete learning media or real objects are needed in the learning process. If a teacher wants to explain a place of worship or temple that is difficult for children to imagine, the teacher could use small miniatures to let children know the shape of the place. Besides, nowadays, teachers can access YouTube or make their own videos with the teacher's creativity. The existence of these mediums, both concrete and even video, could improve the children's interest or curiosity in learning activities. The learning process would also be more fun.

Blocks are media made of wood that have various shapes, such as triangles, circles, rectangles, boxes, and so on. Blocks game is one of the games that could develop early childhood cognition. Blocks are one form of three-dimensional space toy with six sides, 12 ribs, and eight corner points. Block games have benefits, among others:

- a. Able to improve motor skills in early childhood
- b. Able to introduce the basic concepts of math and be able to stimulate the ability of creativity in children.
- c. Able to improve children's language skills because children could convey several types of shapes and colors seen in the block game.

Based on the above explanation, this research was conducted by providing activities that could improve the children's understanding of the concept of comparison through blocks game. The stages carried out in the blocks game are:

- a. The researcher divided the six classes into several sessions in participating the learning activities. For instance, the first session was followed by two classes, and so on.
- b. Then, the researcher prepared a block game that already existed at the school. Besides preparing the game, researchers brought assessment instruments that had been made before conducting research to measure children's ability to understand the concept of computation.
- c. The researcher explained how to practice using the block game. Furthermore, the researcher explained the comparisons found in the blocks game.
- d. One class is divided into several groups to make it easier for researchers to observe children in carrying out comparison activities or following instructions given by the researcher.
- e. The researcher gave directions to students to take unarranged blocks. The first instruction given by the researcher is that they arrange the blocks lengthwise. Then collected the blocks according to their shape, collected according to their color until compared the short length of the blocks.
- f. After that, the researcher observed whether the child could mention and carry out the instructions given by the researcher. Here are some examples of pictures of blocks carried out in the activity.

In this process, observation was conducted by the researcher students to find out the level of students' understanding of the concept of comparison in block games. Therefore, an assessment or instrument of the level of students' abilities was needed. The assessment in early childhood is different from assessment at the elementary, junior high, and high school levels. In PAUD, the assessment used a range of BB (not yet developed). MB (starting to develop). BSH (developing as expected). BSB (developing very well).

a. Grouping block shapes

- 1) BB, The student has not yet been able to group blocks by shape.
- 2) MB, The student begins to group blocks by shape but is assisted by friends and the teacher.
- 3) BSH, The student is able to group 3-4 blocks based on shape without the help from the teacher.

- 4) BSB, The student can group more than 5 shapes of blocks without the help from the teacher.
- b. Arranging large blocks to smallest
 - 1) BB, The student still needs to be able to arrange the blocks.
 - 2) MB, The student is starting to be able to arrange the blocks with the help of the teacher.
 - 3) BSH, The student can arrange 3-4 blocks without help from the teacher or friends
 - 4) BSB, The student can arrange the blocks from large to small without help from the teacher or friends.

Then the results from the assessment were observed by the researcher and showed that after stimulation or comparison activities with the help of block media in the B group at Kumara Sari I Penarungan Kindergarten, there was an improvement in students' comprehension of the concept of comparison through block games. This was shown when researchers assigned students activities; they could compare the short length of blocks and classify them based on shape, color, etc.

Based on the explanation and data obtained by the researcher, block games could be used as a learning medium in the B group at Kumara Sari I Penarungan Kindergarten to improve students' ability to understand the concept of comparison.

Conclusion

Based on the research conducted about comprehending the concept of comparison in early childhood through block games at Kumara Sari I Penarungan Kindergarten, one of the educational game tools (APE), namely blocks, could improve students' understanding of the concept of comparison. The datum in this study was collected using various techniques, including school observation, to see the situation or problems in the school. Then the interview stage, conducting interviews or seeking information related to the problem with the teacher, the students in B group, and the school principal so that after carrying out the interview stage, it could determine the activities to solve the problem. Therefore, block games could improve students' comprehension of their comparison abilities. A comparison could be made with a variety of activities, either using APE, videos, or in the form of printed media. Teacher creativity in using APE during the learning process is necessary for student's comprehension of the concept of comparison. So that the researcher used creativity or utilized the games owned by Kumara Sari I Penarungan Kindergarten as a learning medium to assist the research process. In the implementation of the study, it was directly involved in the learning process. Indeed, the teacher had yet to maximize the utilization of media or game tools as learning media in the classroom, and many students in the B group still needed to comprehend the concept of comparison. After the research, the students began to learn by playing while learning. At the end of the study, the researcher conducted a feedback process from the students by forming groups then each group got the task of classifying objects based on shape, type, and color. There was an improvement in students' comprehension of comprehending the concept of comparison through block games.

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