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## **IMPROVING THE ABILITY TO RECOGNIZE THE CONCEPT OF NUMBERS FOR EARLY CHILDHOOD THROUGH THE NUMBER FLOWER GAME AT BINTANG KINDERGARTEN, CIREBON REGENCY**

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### **Abstract**

This research began with the finding that the ability of Group A children at TK Bintang, Cirebon Regency, to recognize number concepts had not developed as expected before the implementation of the number flower game. The evidence of this failure is seen in the pre-cycle, where the children have not shown significant development. The purpose of this research is to explore the ability to recognize number concepts through number flower games in early childhood at TK Bintang, Cirebon Regency. The method used in this research is classroom action research (CAR), with data collection through observation and documentation. Data analysis was conducted qualitatively, using observation, triangulation, and peer review. Qualitative analysis was performed using the class average formula and percentage. The research results show an improvement in the ability to recognize number concepts in Group A children at TK Bintang, Cirebon Regency, after the implementation of the number flower game. In the pre-cycle, the children's ability only reached 34.1% (Not Good category), then increased in cycle I to 61.6% (Adequate category). After improvements in cycle I, in cycle II the children's ability increased to 85.8% (Very Good category), exceeding the research's minimum target of  $\geq 80\%$ . Therefore, the intervention was stopped in cycle II as it was considered successful and met expectations.

**Keywords:** *Number Concept, Number Flower, Game.*

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## INTRODUCTION

During childhood, physical, mental, social, and emotional growth occurs rapidly. When parents educate children, this stage is very important. Positive and negative stimuli can affect children's behavior. The three main components of a child's environment: family, school, and society. From an early age, the home environment has a major influence on the development of a child's personality (Latifah, 2020). The purpose of character building from childhood is to build good character and become good and noble people who can help others and their environment after they grow up (Johari, 2021). The goal of national education, according to Article 1 of Law Number 20 of 2003 concerning the National Education System, is to produce students who are intelligent, knowledgeable, and responsible. The goal of education is to foster the character and morals of Indonesians so that the next generation can maintain the nation's noble values. One way to measure school readiness is to observe children's growth, which directly helps their learning and adaptation in the classroom. Paying attention to children's physical, motor, cognitive, and social emotional development before starting elementary school is very important. Growth acceleration consists of rapid growth and development (Trenggonowati & Kulsum, 2018). This is in line with Bloom's idea that children's brain development is rapid in early life.

Meanwhile, Wahyuni and Azizah (2020) stated that the way children learn is different from adults. Most children do not realize that the games they play function as learning for their parents. Playing while learning is an activity that children do voluntarily and freely with the aim of improving their health and development. Playing activities also give children the opportunity to relieve stress in a fun way while discovering new things. Early childhood education (ECE) is very important to prepare the future of the country because it will help defend the country from unstoppable forces. This commitment was stated by the world's education ministers at the Dakar-Senegal Conference in 2000, and UNESCO reports it annually (Andayani, 2021).

According to the Law of the Minister of Education Number, understanding the meaning of numbers is very important for children's mental development, especially at the age of four to five years. The Early Childhood Development Standards (STPPA) set in 2014 for children aged 4 to 5 years include the ability to count from 1 to 10 numbers, understanding the concept of numbers, and understanding number symbols. The concept of numbers is an important component of mathematics that can help students improve their numeracy skills, according to learning guidelines for kindergarten games (Rahman et al., 2017). Learning, problem solving, and logical and symbolic reasoning are all aspects of cognitive development. The use of media in mathematics learning, especially when introducing the concept of numbers, aims to increase children's awareness of the relationship between numbers and certain objects. This aims to lay a solid foundation for their future mathematical abilities. Learning basic arithmetic at an early age is very important because children's brains absorb new knowledge very quickly. Mathematics helps children in daily activities and interactions. The development of basic skills and behaviors is the main focus of the educational approach. Teachers use various areas of basic skill development to help children improve their abilities and creativity according to their developmental stage, such as art, cognitive, motor, and language. Children's ability to solve problems, process data, and learn mathematical logic is called cognitive development (Safira and Ifadah, 2020).

The results of observations at TK Bintang show that some young children, especially those aged 4 to 5 years, have difficulty understanding the concept of numbers. Of the 15 students, only 3 could understand the concept of numbers correctly, and there were still 12 students who failed to understand the concept of numbers correctly. There are 9 children who are not yet able to number the numbers 1-10, 9 children who are not able to connect the numbers 1-10, and 12 children who are not able to order the numbers 1-10. The role of teachers in providing motivation to children is very important, because they need to understand the importance and progress of age in the cognitive development of early childhood.

Because number flower games can eliminate the boredom of learning that often occurs, researchers decided to attract children's interest in learning the concept of numbers in an entertaining way. Before this, musical activities were the only way children learned numbers, which bored them quickly. Based on this background, researchers want to explore ways in which Kindergarten students can better understand number concepts through number flower games. Classroom Action Research (CAR) entitled "Improving the Ability to Recognize the Concept of Numbers in Early Childhood through the Number Flower Game at Bintang Kindergarten, Cirebon Regency".

In children's cognitive development, especially in recognizing numbers, educators plan to use the Montessori approach in delivering the material. Montessori math games are designed to help children quickly understand and master basic educational concepts, such as number recognition, numerical stimulation, and creativity. In accordance with the hypothesis that has been proposed, the researchers developed an interesting number game that aims to improve understanding of the concept of numbers.

Number Flowers is a popular game among children to improve their math skills. In this game, number flowers made of cardboard or other materials are used as a medium to teach numbers, basic math operations, and number series. One way to play the "Number Flowers" game is to count the flower petals from numbers 1 to 10, connect the flower petals with the number symbols, and arrange the flower petals in sequence from numbers 1 to 10. Other variations include arranging flowers or other materials on the table or floor.

The number flower game can be adapted to different levels of difficulty, age, and math abilities of young children. In addition, this game can be played individually or in groups, which not only helps the development of social skills, but also supports the cognitive development of children.

## **METHODOLOGY**

This study uses a qualitative research approach. And the type of research used is classroom action research or also called PTK Classroom Action Research (Arikunto, S., 2011). The research design uses the Kurt Lewin design, action research is a spiral process that involves planning, implementation, observation, and reflection. The data collection method used is observation and documentation. The validity of the data in this study is focused on the ability to recognize children's letters through loose parts games using two-way examination techniques, namely: Observation persistence, data triangulation and Peer Checking. The data analysis technique in this study is by calculating the class average and percentage.

## RESULTS AND DISCUSSION

### 1. Ability to recognize the concept of numbers in Group A of Bintang Kindergarten, Cirebon Regency before giving action through the Number Flower Game

As expected, the ability of children in group A at Bintang Kindergarten, Cirebon Regency in understanding the concept of numbers before applying the action through the number flower game has not shown a significant increase. This shows that children's understanding of the concept of numbers is still low and has not developed as desired. Based on the data obtained, the percentage of achievement in the ability to recognize the concept of numbers in the pre-cycle only reached 34.1%, which shows that children's abilities have not developed well. Children in group A of Bintang Kindergarten, Cirebon Regency have mathematical abilities that are still limited and have not developed optimally. This condition clearly cannot be allowed to continue, because it will have an impact on their development and learning abilities at a later stage.

Understanding the concept of numbers is an important aspect that must be introduced to early childhood. Getting to know the concept of numbers, as expressed by Gunanti et al. (2021), includes activities such as counting, sequencing, comparing, and connecting objects with numbers. It is very important for early childhood to understand these basic concepts, so that they can understand more complex number operations when learning mathematics later on. In addition, understanding the concept of numbers also plays a role in the development of children's thinking skills, which will be very useful in solving problems and increasing their creativity.

Based on the theory and findings of previous studies, researchers concluded that children's ability to understand the concept of numbers has not developed as expected. Therefore, researchers feel the need to find the right approach to improve children's ability to understand the concept of numbers, and one way is to use the number flower game 1-10.

### 2. Implementation of the application of the Number Flower game in improving the ability to recognize the concept of Numbers in group A of Bintang Kindergarten, Cirebon Regency

The implementation of the number flower game action to improve the ability to recognize the concept of numbers in children in group A of Bintang Kindergarten, Cirebon Regency begins with learning planning, then continues with the implementation of learning and observation. Learning planning through the number flower game to improve the ability to recognize the concept of numbers in children in group A of Bintang Kindergarten, Cirebon Regency is prepared based on the guidelines and rules that have been set by the school. This plan is a reference for teachers in designing the learning that will be implemented.

Learning planning includes a series of activities that need to be carried out to achieve learning objectives. Therefore, learning planning functions as a guide in designing a learning process that suits the needs (Putrianingsih & Syarif, 2021). Several things that must be prepared in learning planning are the Daily Learning Implementation Plan (RPPH) and Direct Observation.

In this case, the ability to recognize the concept of numbers in children has 3 indicators, namely: 1) Counting flower petals numbers 1-10, 2) Connecting flower petals numbers 1-10 to number symbols, 3) Arranging flower petals numbers 1-10 in order. The three indicators are

stated in the observation sheet that will be used by researchers to assess the level of children's ability to recognize the concept of numbers during cycles I and II.

In the implementation of learning carried out during this study, learning was carried out through number flower games. Based on the results of observations with colleagues during the learning process, it showed positive results. In cycles I to II, researchers consistently made improvements to deficiencies in learning through evaluation in each cycle. This shows that the learning process implemented by researchers using games is always evaluated, so that there is an increase in each cycle.

Researchers use direct observation of the ability to recognize the concept of numbers in children which is carried out when learning takes place. So that the observation action is carried out by researchers who are none other than teachers in the class

### 3. Ability to recognize the concept of numbers in Group A of Bintang Kindergarten, Cirebon Regency as a result of providing action through the Number Flower Game

Introduction to the concept of numbers from an early age is very important, because when children understand the concept of numbers, they will be better able to solve problems and develop knowledge about other mathematical concepts that they will encounter in everyday life.

In this study, increasing the ability to recognize the concept of numbers in children can be done by using the number flower game, which attracts children's interest in recognizing the concept of numbers while playing. This is make learning more fun for children. One of the methods used in this learning process is the number flower game, which is made of cardboard combined with folded paper to form a flower, with each petal numbered 1 to 10. This game is educational and interesting, making it easier for children to recognize the concept of numbers. Through the number flower game, children's brain development can be stimulated, which in turn can improve children's ability to recognize the concept of numbers. The application of learning through the number flower game can improve the ability to recognize the concept of numbers. The results of this study strengthen the results of previous studies which show that the use of the number flower game can improve the ability to recognize the concept of numbers.

## CONCLUSION

Before the implementation of the action through the number flower game, the ability of group A children of Bintang Kindergarten, Cirebon Regency in recognizing the concept of numbers had not developed as expected. The implementation of the action by using the number flower game to teach the concept of numbers to group A children of Bintang Kindergarten, Cirebon Regency is listed in the daily learning implementation plan prepared by the teacher. In cycle I, the number flower game was small and less interesting, so that learning was not optimal. However, in cycle II, the number flower game used was larger, which made it more interesting for children and increased their interest in learning the concept of numbers. The ability of group A children of Bintang Kindergarten, Cirebon Regency in recognizing the concept of numbers showed a significant increase after the implementation of the number flower game. In the pre-cycle, the children's ability only reached 34.1% (BB), then increased to 61.6% (MB) in cycle I. After improvements in cycle I, the children's ability in recognizing the concept of numbers increased to 85.8% (BSH) in cycle II, exceeding the minimum target of the study, which was  $\geq$

80%. Because the expected results had been achieved, the study was stopped in cycle II. Based on this, it can be concluded that the number flower game is effective in improving children's ability to understand number concepts in group A.

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