

## **The Role of the Teacher in Developing the Numeration Skills of Children Aged 4-5 Years Through Loose Part Media in Kindergarten Mother's Love**

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### **ABSTRACT**

Numeracy ability is an important aspect in a child's development that influences future mathematical abilities. It is important to stimulate early childhood numeracy skills to develop children's knowledge and skills and interpret numbers and number operations. This research aims to explore the role of teachers in developing children's numeracy skills through the use of loose part media as an innovative learning method. Loose parts are simple materials that can be used creatively to improve children's understanding of mathematical concepts. Teachers have a role in creating a learning environment that supports the development of children's numeracy abilities. This method uses descriptive qualitative research methods. The research was carried out at the Cinta Ibu Pasawahan Kindergarten on May 21 2024. The subjects of this research were teachers and children from group A. This research used a qualitative approach to gain in-depth insight into how the role of teachers can develop children's numeracy skills through loose parts. Data collection techniques through observation, interviews and documentation. The results of the research show that the role of teachers provides real evidence in developing early childhood numeracy skills. Teachers have introduced various types of numeration to children, namely by introducing number symbols, knowing the concept of numbers and the ability to number 1-10 using loose part media from rocks or grains so that children are skilled at effective and enjoyable learning.

**Keywords :** *Teacher's Role; Numeracy Ability; Loose Part Media*

### **INTRODUCTION**

The world's increasingly rapid development requires humans to prepare for these changes. These changes can be formed from an early age, where children must prepare themselves to face their future. As we enter the 21st century, humans are faced with various challenges and life is marked by the very rapid development of science and technology. Rapid changes are occurring in almost all aspects of life, including health, education, economics, social, cultural and others. So it requires humans, especially the younger generation as the successors of civilization, to improve their abilities and skill

(Mastuinda et al., 2020).

One effort that can be made to face the challenges of the 21st century is to improve the quality of education starting from an early age. The abilities that need to be improved from an early age are literacy skills, one of which is numeracy literacy. By mastering these literacy skills, it is hoped that you can develop critical thinking skills in problem solving, creativity, and so on. Where teachers play an important role in preparing superior generations.

However, according to the ECDI (Early Childhood Development Index) achievements according to (bidin A, 2017) in Indonesia in 2018, it provides a relatively good picture with a value of 88.30%, this value is supported by four dimensions which have a role in forming ECDI. As for the achievement of literacy and numeracy development, it is still below 70%, namely around 64.60%, which means it can be stated in the low category. However, based on gender, the development of women's numeracy literacy (66.20%) is higher than that of men (63.10%). This statement is in line with the results of research in 2018 regarding differences in cognitive abilities of children aged 4-5 years, resulting in girls showing higher scores in all aspects of cognitive abilities.

So this requires full support from the government and the nation to be able to develop numeracy literacy skills and quality education, one of which is developing numeracy skills from an early age. As the opinion expressed by (Dini, 2018., Hutabarat, 2021., Krisnasari et al., 2022) in (Wahyuni, 2022) regarding the importance of numeracy skills in early childhood states that the initial potential that a person must master to prepare for the life that will come. This ability will be a provision for the future in solving problems through mathematics or matters related to calculations.

Developing numeracy skills can of course be done through stimuli that can be provided through education. This is reinforced by the opinion (SUJIONO, 2013) that early childhood education includes efforts to stimulate, guide, nurture and provide learning activities that will produce children's abilities and skills. Education for early childhood is education carried out for children from birth to eight years old. Through this education, young children will be helped in their growth and development process. Of course, early childhood is the most appropriate time to stimulate individual development, one of which is stimulating numeracy literacy skills from an early age. This is in line with research which states that 88% of students who do not read by the end of first grade require extraordinary and expensive intervention (Juel, 1994) in (Yuliantina, 2022). The results of this research prove that children are easier to stimulate from an early age, so we must create strategies to stimulate numeracy skills from an early age in accordance with the principles of learning in PAUD.

Therefore, numeracy ability is an aspect of child development that is related to cognitive development. This is in line with Jean Piaget in (Fatimah Ibda, 2015), who stated that four stages of cognitive development of each individual develop chronologically, one of which is the preoperational stage (2-7 years), where at this stage the child's thinking

activity is still in the organizational stage, however Children have shown cognitive activity in dealing with things outside themselves, such as classifying a group of objects, arranging objects in a certain order, counting and realistically understanding the environment with signs or symbols

One effort that teachers can make is to prepare lessons using media that is interesting, easy for children to find and follow. By utilizing existing media in the surrounding environment. As with using loose part media, one of the loose part media is natural materials, where the use of natural material media is also very effective in the learning process, especially for young children. In line with the opinion of Musbikin (2010) in (Aslindah & Suryani, 2021) that nature and the surrounding environment are excellent media for teaching many things to humans, especially for young children. Because by using natural media, children will easily see and digest what is taught to them.

Apart from that, loose part media is also a learning strategy that can develop imagination and creativity and also become an activity in the learning process to follow the learning process in the 21st century (Istim et al., 2022). Thus, it provides opportunities for children to use their knowledge in various ways. improve his numeracy skills.

As it was found, there are already schools that carry out good practices regarding learning in developing numeracy skills using loose part media, namely Kindergarten Cinta Ibu, Pasawahan, Purwakarta. Based on the results of observations made by researchers, it turns out that the school has been practicing learning with reference to the independent curriculum, which has been running for about 2 years, where the first year was still in the process of introducing the curriculum and the current one year has been maximally practiced, this institution is one of the private kindergarten institutions that has implemented the independent curriculum effectively.

So in relation to the research conducted, the Cinta Ibu Pasawahan Kindergarten, Purwakarta, is one of the schools where learning has included the development of numeracy skills according to the characteristics of the independent curriculum. So in developing children's love of numeracy, Cinta Ibu Kindergarten teachers try to make learning as interesting as possible. One of them is by using loose part media, where the implementation can be collaborated with educational game tools that the teacher makes so that children do not feel bored.

Therefore, as explained above, it is interesting for the author to carry out research regarding the development of numeracy abilities. So the researchers took the title "The Role of Teachers in Developing Numeracy Skills in Children Aged 4-5 Years Through Loose Part Media in Cinta Ibu Kindergarten".

## **METHODS**

This research uses a descriptive qualitative approach which aims to describe the

role of teachers in learning that is able to develop numeracy skills in early childhood, especially in children aged 4-5 years. The sampling in this research, as stated in the opinion of (Adhi et al., 2020), uses a non-probability approach, a type of purposive sampling approach, where the sampling technique from the population is determined according to the characteristics, namely children aged 4-5 years and have informal numeracy abilities.

This research was conducted at Cinta Ibu Kindergarten, Pasawahan, Purwakarta in Group A (4-5 years old). The subjects studied were group A teachers and 6 group A children, because the children in this group have the ability to number coherently and recognize the concept of objects, in accordance with the informal numeracy stage. The data collection techniques in this research are the results of interviews with group A teachers and the results of learning observations through play methods using loose part media in group A which are documented and adjusted to development indicators.

## **RESULTS AND DISCUSSION**

Numeracy literacy skills are the knowledge and skills to use various numbers and symbols related to basic mathematics to solve practical problems in everyday life. Children's numeracy abilities can be identified through the stages of numeracy development, namely informal numeracy, numeracy knowledge and formal numeracy. At the informal numeracy stage, children are able to count coherently and recognize the quality of objects. Entering the early elementary school age, students' numeracy abilities change towards the numeracy knowledge stage. Numeracy abilities develop towards abstract concepts (Setyani et al., 2023).

Numeracy skills are very important for young children and need to be developed from an early age. The person who plays an important role in the process of developing early childhood numeracy skills in education is a teacher. This is in line with the results of research at Cinta Ibu Kindergarten which is reinforced by the statement of a teacher at Cinta Ibu Kindergarten that in developing numeracy skills in early childhood which is based on the independent curriculum, teachers must prepare learning as interesting and creative as possible using various easy media. Try to make more of the media found around the child, especially loose part media, such as leaves, twigs, stones, dried flowers and others. So that children do not feel bored when learning numeracy takes place. Because loose part media is media that is often found by children. This is in line with the opinion of (Priyanti et al., 2021) stating that in preparing learning it is necessary to use media that is interesting, easy to find, and followed by children.

Based on the results of the interview, the teacher stated that this loose part media is one of the media that is often used in developing numeracy in early childhood at Cinta Ibu Kindergarten, where this learning activity is more effective even though this loose part media is a security medium in learning. But it would be good for a teacher to provide activities with other media according to the theme.



Examples of media according to the theme

Based on the results of observations, teachers at Cinta Ibu Kindergarten develop children's numeracy skills through a process that is integrated into classroom learning. Numeracy development activities focus on using loose part media. Loose part media are materials that can be moved, carried, combined, redesigned, separated and put back together in various ways. With Loose Parts media, various creativity can be created in children's learning activities (Priyanti et al., 2021). Loose part materials themselves consist of seven components including natural materials, cloth, metal, glass, plastic, used packaging (boxes, used eggs). And the natural materials used by teachers at Cinta Ibu Kindergarten tend to be more natural materials and used packaging. (dus), the reason that teachers can give regarding loose part media used in numeracy activities is that this media can be found in the environment around children easily and simply, and can provide various benefits.

The development of children's numeracy abilities in the learning process consists of several stages, the first being the planning, implementation and evaluation stages of learning. In learning planning activities, the teacher designs lesson plans that refer to the independent curriculum which includes the use of loose part media to develop children's numeracy skills. The loose part media used in the learning process are natural materials such as pebbles, used packaging (cardboard) which is shaped into teaching aids, seeds and dry leaves.

Based on the results of observations and interviews, the process of numeracy learning activities begins with apperception activities or opening the lesson in the morning through clapping, singing numbers in sequence 1-10 and even recognizing sizes through singing.

In the process of learning activities, numeracy development uses loose part media such as stones, leaves, tree trunks which are combined with other learning media and implemented in play activities, because numeracy development in early childhood cannot be done by force. Therefore, as a teacher, you must be smart and more creative in creating

learning and always accompany children in their learning process. As previous research shows, the teacher's important role is to accompany students in ongoing learning activities, where students have an active role in learning and teachers only act as facilitators for students.

The stages of numeracy development activities through loose part media combined with educational play tools are that first, of course, the teacher prepares interesting educational play tools, then invites children to play with these tools. Then the child is given guidance or direction regarding the game, where the child is first introduced to the number cards and the child is instructed to match the number cards with the natural materials that have been provided (one of which is pebbles) according to the numbers listed. The next step is to ask the child to try to solve a simple mathematical problem (addition). And finally, the child is asked to raise his finger according to the last number of pebbles.



#### Numeracy ability development activities

Therefore, the achievement of the development of early childhood numeracy skills is in accordance with standard indicators of the level of achievement of cognitive development of symbolic thinking, where in children aged 4-5 children are able to count many objects 1-10, recognize the concept of numbers, recognize number symbols, and recognize lettersymbols. . As the results in the field show, at Cinta Ibu Kindergarten, the development of numeracy in children aged 4-5 years has progressed according to expectations, although there are still some children who need teacher assistance in solving problems through mathematics. However, the numeration activities at Cinta Ibu Kindergarten do not only introduce number symbols and other things, but also introduce mathematical measurements through singing, just as children are able to know the measurements of long, short, big and small and so on.

As for the evaluation process, the teacher provides an assessment in the form of indicators of the child's development achievement in numeracy skills by evaluating the results based on achievement level indicators or achievement level standards which consist of knowing many objects one to ten, knowing the concept of numbers, knowing number symbols and recognizing letter symbols ( Haryani & Qalbi, 2021).

[illegible]

## Standard Indicators of Achievement Levels for Children Aged 4-5 Years in Cinta Ibu Kindergarten

Based on the description of the results of the discussion above, it can be concluded that developing numeracy skills from an early age using loose parts combined with other educational game tools has its own strength in developing children's numeracy skills. Apart from making innovations in the loose part learning process, it helps children to make counting and counting numbers easier. This is very important because it is for children's cognitive development in the future and becomes the basis for dealing with mathematical problems. Therefore, teachers here play an important role in education and direct learning of skills, where teachers must accompany and create learning that is as interesting and creative as possible.

Based on the results of interviews with teachers at Cinta Ibu Kindergarten, factors that influence developing children's numeracy skills using loose part media are the competition that an educator has in motivating learning with various stimulation provided through this media and the existence of infrastructure that provides attractive support. in learning. The inhibiting factor in developing numeracy skills through loose part media is the lack of self-confidence, where when children are asked to try to count using loose part media, errors still occur, so the teacher demands that they be patient in doing this and are helped to solve it.

## CONCLUSION

Based on the results of research on the role of teachers in developing the numeracy skills of children aged 4-5 years at Cinta Ibu Kindergarten, Pasawahan, Purwakarta, it can be explained that the role of teachers in developing numeracy is good, it can be seen from the results of children's numeracy development achievements which have developed appropriately. with expectations. Therefore, it means that the teacher has provided good learning or stimulus, through interesting and creative media and can accompany the learning process well.

The numeracy skills that are developed at the age of 4-5 years at Cinta Ibu Kindergarten are counting the number of objects 1-10 which is done using loose parts of

natural materials (stones) combined with educational games, the ability to conceptualize numbersymbols and recognize number symbols which is done through the medium of loose partnumber cards combined with educational game tools in accordance with the learning theme as well as measuring skills through singing which makes children happy. However, the only thing that is an obstacle in developing numeracy skills at Cinta Ibu Kindergarten is the different characteristics of the students, such as there are still children who are confused about recognizing number symbols and still need a teacher's guidance in numbering 1-10 sequentially.

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