

## Improvement of Ability of Calculation of Children Age 4-5 Years through Playing Puzzle

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### Abstract

The study aims to improve the early counting ability of children aged four, five years in PAUD Jump by using the puzzle. Counting beginning is a fundamental ability for children to know the concept of numbers. The method used is action research on students group B of 15 children through four stages of planning, action, observation, and reflection. Data are analyzed by qualitative and quantitative descriptive. Results of the study concluded that by using the Puzzle planel, the students' early numeracy skills could be improved. Student Ability increased from 44.66% before action and increased on first cycle about 49.25% and in the second cycle becomes 90.16%. Student's ability is high enough at a game process that uses puzzles, ice cream sticks and buttons clasped in planel

**Keywords:** Initial Counting Skill, Puzzle Games, Kids 4-5 Years.

### Introduction

Research conducted by Levine and colleagues proves that puzzle games are in high demand from boys to girls, however, the puzzles still have a tremendous effect on improving the cognitive and linguistic abilities of children, both male and female.

Elson and his friends recommend puzzle games to be applied in class, as researchers believe the puzzle game can bridge the knowledge gap in the classroom. [2] Similarly, puzzle play activities applied to children aged 4-5 years, the more often a child doing puzzle activities than, the more trained intelligence, cognitive and child motivation. Playing useful puzzles for early childhood include: improving cognitive skills, improving children's social skills and being trained in puzzle play. The research that has done still focused on improving one of the cognitive development of children, while this research focuses on the puzzle game, to improve the ability of early counting children aged 4-5 years through Mathematics and problem-solving.

Capability improvement research Initial counting through this puzzle game is very important because the media used is a puzzle made from panel, dacron, and duplex child-friendly. This panel-based puzzle has not used in PAUD / TK schools.

The focus of the problem in this study is the improvement of early numeracy skills: Knowing the number 1-10, sorting numbers, spelled out many objects 1-10 understand more and fewer concepts, the introduction of number symbols, the introduction of the concept of adding and subtracting through playing puzzles for the child's age 4-5 Years in PAUD Renggali East Bekasi. With the following description:

1. Improves early numeracy skills of 4-5 years old children in PAUD Renggali through puzzle play
2. Playing puzzles can improve your early arithmetic child age 4-5 years.

### Research methods

The method used is action research using Kemmis and Mc Taggart. Taggart and Kemmis define action research as a form of self-reflective joint research undertaken by participants in social situations. Research actions are taken on students group B of 15 children through four stages of planning, action, observation, and reflection. Data are analyzed by descriptive qualitative and quantitative. Stages of planning, action, observation, and reflection.

### Research Results and Discussion

Playing panel puzzles can be used in learning for and can help facilitate children in improving early childhood count

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4-5 years old in PAUD Renggali. This supported by research done by Aral and friends that very useful puzzles done to improve cognitive, social-emotional, language and motor. (Aral et al., 2012). Also, Geary's research results conclude that the ability to calculate, how the addition and subtraction of one to several objects the include formal mathematical knowledge correlates with achievement.

Based on the results of data processing and evaluation that has been carried out at the end of each cycle that there has been an increase in early childhood skills by using panel puzzle media applied by playing while learning and learning while playing before the action is given until the first cycle and Cycle II. Data quantitative has shown an increase in the numeracy score from the condition before the research to the score after the holding of the first cycle and cycle II. At startup research score of the lowest respondents obtained by the child is 23 with the percentage of ability 28.75% while the highest score of respondents is 48 with percentage ability 60%. The score increases after an action is taken to me with the lowest score with the same respondent was 46 with the percentage of 57.5% while the highest with the same respondents is 75 with the percentage of 93.75% while in the second act with same responders lowest score 55 with a percentage of 68.75% and the highest score is 80 with 100% percentage. The score of children's acquisition before action amounted to 536 increased after cycle I to 918 and increased again after cycle II reached 1082. The average percentage of children's ability before action amounted to 44.66% increase 31.83% so that the counting ability of children to be 76.5% after the action of cycle I then happened again increase in cycle II as much as 17,42%, so that average percentage ability of child reach 90,16% increment of early child counting points interest from pre until the action of cycle II amounted to 49.25%. Thus it can be concluded that the implementation of learning by used panel puzzle can improve the ability to count early childhood 4-5 years.

## Conclusion

Results of the study concluded that by using the Puzzle plannel, the students' early numeracy skills could improved. Student Ability increased from 44.66% before action and increased on first cycle about 49.25% and in the second cycle becomes 90.16%. Student's ability is high enough at a game process that uses puzzles, ice cream sticks and buttons clasped in panel.

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