



## “Eco Green Ular Tangga (EGUT)” Game as Tools of Teaching to improve Environmental Care for Early childhood in Tunas Bangsa and Jati Asih Play Groups in Semarang

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### Abstract

PAUD (Play Group) Tunas Bangsa and PAUD Jati Asih are institutions that position parents as partners in personal preparation and development from an early age, providing guidance for playing groups and kindergartens in the Ngaliyan area of Semarang. The two institutions in this program are partners in the Community Partnership Program (PKM). In their curriculum, both of institutions teach their students to love the environment. The problem faced is that both do not yet have effective learning methods to teach environmental care to children. In this program a method of playing while learning is proposed using interesting educational teaching props. Educational props in the form of snakes and ladders game named "Eco Green Ular Tangga (EGUT)" can help improve children's cognitive and psychomotor abilities. Children will learn to analyze colors, recognize letters, socialize, jump, throw, all of which are positive things in a child's development. The material and features provided can help children to love the environment. The purpose of this paper is to determine the effectiveness of EGUT educational teaching aids in learning environmental love in PAUD Tunas Bangsa and Jati Asih.

## INTRODUCTION

The problem of waste in Indonesia is a matter of concern. This is due to the absence of a waste management system provided by the government. In addition, public awareness to littering is still very low. There are many of our people who throw trash in the river. This can hamper river flow and cause flooding. In addition, the rivers which empties into the sea will bring the trash to the sea. Non-organic waste such as plastic will be carried to the sea. According to reports (Jambeck et al., 2015) Indonesia is the second largest contributor to plastic waste to the sea after China.

To change people's behavior to discard waste wisely is not an easy job. Teaching a behavior will be more effective if taught to children as early as possible. Children will enter a stage of development called the Golden Age. At that time the child's brain will experience very rapid development. At the age of 0-6 years brain growth will reach 80%. At this time all information that includes words or behavior of good or bad people around him will be absorbed entirely and form the character, personality, and cognitive abilities (Pasific Cross, 2017). Scientific research over the past 30 years has taught us that the most important period of human development is from birth to eight years. Early childhood is used to develop cognitive skills, emotional well-being, social competence and healthy physical and mental health will build a strong foundation for the success of life after adulthood. Although learning will last a lifetime, in early childhood, learning takes place at a pace that will never be balanced. The period of pre-school education (or pre-primary school) falls in the middle of the early childhood period and lays the foundation for success in school and beyond. Although this is briefly focused on the pre-elementary years, we note that learning through games is relevant throughout the entire early childhood period and beyond (LEGO Foundation and United Nation Children's Fund (UNICEF), 2018)

For the effectiveness of learning outcomes in early childhood, learning media need to be prepared in the form of educational aids that are appropriate to the child's development. The role of learning media for early childhood according to (Zaman and Eliyawati, 2010) is important because at that time the child's development is in a period of concrete thinking. Presentation of information to young children requires appropriate media so that information can be received or absorbed by children so that expected changes in behavior in the form of abilities in terms of knowledge, attitudes, and skills. Learning media are grouped into 3 categories, namely visual, audio, and audio

One of the visual learning media is the use of graphic media. Graphic media are two-dimensional (not photographic) media of view specifically designed to communicate educational messages. The elements contained in this graphic media are images and writing. This media can be used to express facts or ideas through the use of words, numbers and symbols (symbols). The characteristics of this media are simple, can attract attention, cheap and easy to store and carry. The types of graphic media include: graphics, charts, diagrams, posters, cartoons, and comics (Zaman and Eliyawati, 2010).

"Tunas Bangsa" Play Group and "Jati Asih" Play Group are institutions that position parents as partners in forming and developing individuals from an early age. Both of these play groups have implemented the 2013 Early Childhood Education (PAUD) curriculum in accordance with the Republic of Indonesia Minister of Education and Culture Regulation No. 146 of 2014. According to the Ministerial Regulation, the structure of the PAUD curriculum includes religious and moral, physical-motor, cognitive, language, social-emotional, and artistic values. One of the themes applied by the two play groups is the environmental theme. In its application, students are trained to develop the ability of religious, motor, cognitive, language, social-emotional, and artistic values by understanding and studying the surrounding environment. With this theme students are taught to love the environment and love the environment. Problems faced in implementing curriculum aimed at moral development that can develop the values of environmental learning and character development which are expected to be manifested in early childhood behavior and delivery of material education to be optimal.

To solve partner problems, we propose a method of learning through games. Learning by playing methods according to UNICEF (LEGO Foundation and United Nation Children's Fund (UNICEF),

2018) is a center for quality pedagogy and early childhood education. Playing is an important strategy for learning. Play is one of the most important ways in which small children acquire important knowledge and skills. For this reason, playing opportunities and environments that promote games, exploration and direct learning are at the core of effective early education programs. Play gives meaning that is deep, fun, done actively and interestingly, done repeatedly by interacting with many friends.

In this Community Service, to solve partners' problems regarding learning methods for environmental care to students, we created educational tools in the form of games. Through the snake ladder game (*ular tangga*) that is widely known, we have included the theme of environmental care so that children can learn with fun through play activities. This paper was written with the aim of determining the effectiveness of EGUT educational aids in learning environmental love in PAUD Tunas Bangsa and Jati Asih.

## METHOD OF IMPLEMENTATION

### Game Desain Of Eco Green Ular Tangga (EGUT)

The game *Ular Tangga* (Snakes and Ladders) which are well known to many people, was adopted by incorporating learning about environmental care. Board games, which are usually small and are played by sitting, in this program are made in large sizes (2.5 m x 2.5 m) so that students can play interactively. Board games are printed with basic colors and accompanied by striking of numbers sequence to make it easier for students to learn colors, numbers and letters.

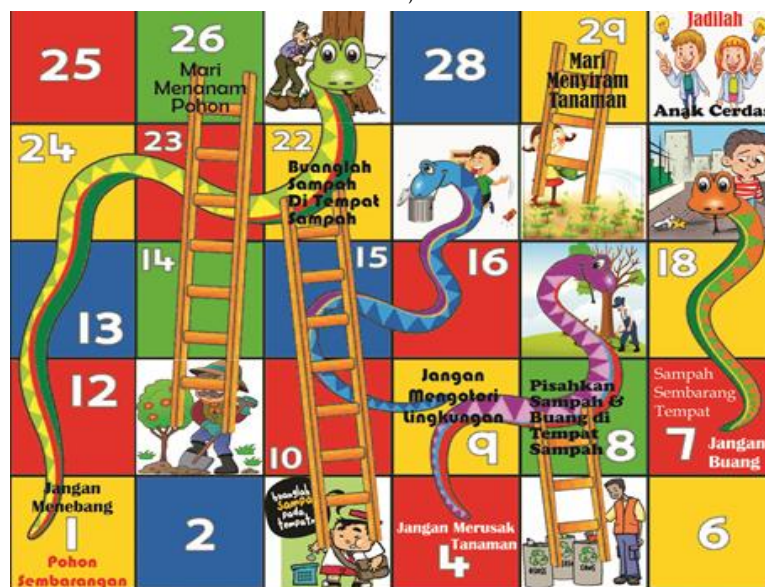


Figure 1. EGUT Games Desain

### How to Play

The game is done together. Number of children playing 2 to 4 children at a time. In playing, students are accompanied by a teacher or parent. The board is equipped with dice to determine the turn of play. At each step a child reaches, the parent will explain the purpose and meaning of the boxes visited. The existence of ladders and snakes is meant to teach there are consequences if we take an action that is right or wrong. For example in box number 5, if we throw trash in its place, then we get a gift for going straight up the stairs to box 8. But if we cut down trees that can damage the environment, then we will go back down to box number 1, and so on.

### Learning Methods

The “Ular Tangga (EGUT)” game is used as a learning tools. Children are invited to learn through games. This game is done 2 times a week with mentoring and teachers and parents. In one game, there are 2 to 4 people who play. They take turns throwing dice to determine their turn to play. During the game, the teacher observes changes in learning behavior.

### Evaluation Method

An evaluation was conducted to determine the responses of teachers and parents to the educational teaching tools that we created. We distributed questionnaires to parents and teachers. The results of responses to the questionnaire were tabulated and analyzed.

## RESULT AND DISCUSSION

Based on observations, children learn fast and are happy playing snakes and ladders (Ular Tangga EGUT). They can't wait to roll the dice to get their turn.



Figure 2. Children accompanied by the teacher play EGUT

### Age of Children

Children who attend the "Tunas Bangsa" Play Group and "Jati Asih" Play Group have an average age of 2 to 4 years as shown in Figure 3.

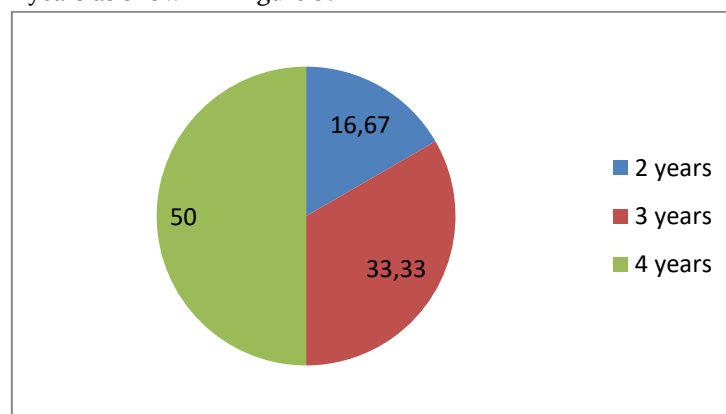


Figure 3. The Distribution of Age

### Children's Response After Playing EGUT

Based on observations made by the teacher, at the first time playing, children must still be guided for each step of the game. After repeated 3 times (3 games on different days), children are more responsive and parental guidance decreases. Children already understand if the number 2 appears on the dice, they must walk 2 steps.

According to respondents, the EGUT educational teaching tools that we made were in accordance with the growth of children in the playgroup, 33% of respondents answered strongly agree and 67% answered agreed. Responses to features in the EGUT game are presented in the Table 1.

From Table 1, it is known that respondents agreed that EGUT can help cognitive learning in recognizing colors and numbers. The teaching aids still use writing, to understand the game, children must be accompanied by parents.

**Table 1.** Respondents Response to EGUT

Statements	Response (%)
Tools that help children recognize colors	67 - Strongly Agree 33 - Agree
Tool that helps recognize numbers	87 - Strongly Agree 17 - Agree
EGUT can influence children's behavior for environmental care	50 - Strongly Agree 50 - Agree
EGUT is a fun learning tool	17 - Strongly Agree 83 - Agree
Playing EGUT makes children more familiar with friends and teachers	33 - Strongly Agree 67 - Agree
EGUT is safe for children to play	67 - Strongly Agree 33 - Agree
EGUT helps children's motoric skills	50 - Strongly Agree 50 - Agree
EGUT is not boring if played repeatedly	17 - Strongly Agree 87 - Agree
To play EGUT, you need the assistance of a teacher or parent	17 - Strongly Agree 87 - Agree

Here the role of parent / teacher can explain the meaning of each box for learning. Because young children cannot read, the existence of the writing is intended to accompany both teachers and parents. So that in every game there must be assistance from the teacher or parent. With this assistance the transfer of knowledge about caring for the environment will be more easily understood by young children. There are proposals to add more environmental features such as forest fires that are currently rife.

The role of EGUT in influencing children to care the environment, 50% of respondents answered agree and 50% strongly agree. This shows that respondents agree that the EGUT props if played regularly will be able to shape the character of children to care their environment. To instill a more permanent behavior, it needs to be done repeatedly. Thus this EGUT game should be played routinely in study groups to get more optimal results.

The assistance from parents is very important, so that parents and children can interact by learning the same thing. Parents can continue the learning process by showing examples that match the features in the game. It is intended for escort both teachers and parents.

Based on observations of children's behavior after playing EGUT and respondents' answers from questionnaires distributed, it can be seen that EGUT is very effective for teaching early childhood to

care about their environment. In addition, EGUT games can improve the cognitive and psychomotor aspects of children.

## **CONCLUSION**

Educational props of the ladder snake game (EGUT) can help improve children's cognitive and psychomotor abilities. Children will learn to analyze colors, recognize letters, socialize, jump, throw, all of which are positive things in children's development. The material and features provided can help children to love the environment.

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