



Increasing The Knowledge of Traffic Safety for Early Childhood Through The Game of Traffic Dragon Snake

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Abstract

This study aims to determine whether there are differences and increased knowledge about road safety for early childhood by implementing the game of traffic snake in the Panti Puruhita Krapyak Kindergarten, West Semarang, Semarang. This research uses quantitative research in the form of Pre-Experimental Design (non-design) is a one-group pretest-posttest design. The population in this study was Group B students with a total of 44 students at the Panti Puruhita Krapyak Kindergarten. The instrument in this study was a scale of knowledge about road safety for early childhood. The sampling technique in this study uses random sampling. The data collection techniques used in this study were interviews, observation, and documentation. The data analysis used is the paired sample t-test. Based on the results of the statistical calculation of the t-test using paired sample t-test obtained sig (2-tailed) 0,000 < 0.05 and the calculated t value of -28.421, so that the value of t-count (-28.421) < t table (-2.045). It means that there are significant differences in knowledge about road safety for early childhood between before and after being treated. While the result of the percentage of the increase in knowledge about road safety is 81.09%, with a mean value of pre-test at 76.17 and post-test at 131.17, so the difference obtained is 55. It means that knowledge about road safety for early childhood experiences significant improvement after being given treatment through the game of Traffic Dragon Snake. Knowledge of traffic safety after being treated is higher than before being treated. It can be concluded that the game of the traffic snake is effective to increase knowledge about road safety for young childhood in Panti Puruhita Krapyak kindergarten, West Semarang, Semarang.

How to Cite

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INTRODUCTION

Traffic accident cases in Indonesia are still relatively high as evidenced by the increase in the number of accidents every year by the World Health Organization (WHO), it is recorded that 1.35 million people died due to traffic accidents with an age range of 5-29 years. Problems in increasing road safety knowledge are not only faced on a national scale but also become a global problem. If there is no immediate and effective treatment, it is estimated that accident victims will double every year. Based on information from Liputan 6, Central Java was ranked 2nd in the highest accident in Indonesia. Traffic accidents are one of the problems that are always faced in big cities, one of them is in Semarang. According to the Directorate General of Land Transportation (in Sugiyanto, 2016), 90% of the main factors in traffic accidents are humans. Human factors are caused by bad behavior from pedestrians and bad behavior from drivers.

Based on information from Liputan 6, the World Health Organization (WHO) noted that more than 186 thousand children worldwide die from traffic accidents every year. It shows that children are one of the groups that are vulnerable to the threat of traffic accidents. It shows that children are one of the groups that are vulnerable to the threat of traffic accidents. The Acting official of The Director of Land Transportation Safety Guidance at the Ministry of Transportation Pandu Yunianto also believes that safety education and socialization must be carried out continuously to change people's perceptions and views about the importance of behaving safely on the road. The inculcation of road safety values must start at an early age to foster a spirit of traffic discipline so that these values can become life values.

Ikhwan Hakim as The Director of Transportation of the National Development Planning Agency (within the Ministry of National Development Planning / Bappenas) stated that every hour there are 3 to 4 people who die from traffic accidents. If more detailed, victims of traffic accidents in the age of 0-14 years by 12%, aged 15-64 years by 77%, and elderly people aged 65 years and over reached 11%. This figure is called seven times more than fatalities due to natural disasters.

Pratiwi (2015) believes that discipline is essentially a self-training to foster self-control, character or order, and efficiency. Practicing discipline is something that requires not instant time. It includes establishing traffic discipline. The attitude in traffic is a manifestation of the

understanding of road users to implement traffic laws and regulations as well as norms of courtesy between fellow road users. The implantation in safety knowledge in early on is needed to be done to form a generation that has an ethical and culture in orderly traffic. From this, it is expected that in the future the number of traffic accidents can be reduced.

Culture is an activity that is often done and repeatedly. Similarly, about the culture of traffic which means the activities carried out every drive on the road which is reflected in behavior when driving. One example of behavior that shows that safety is still said to be low is wrong behavior from parents regarding the lack of traffic discipline such as not using a helmet, allowing to ride more than 2 (two) people, crossing not on a zebra crossing, running a red light and park in any place. Those things will precipitate the wrong habits and examples also have an impact on instilling a culture of poor traffic discipline. Therefore, the habit of traffic discipline behavior needs to be instilled early on that can be done in educational activities.

Early childhood education is education carried out for children from birth to the age of six, with extensive examples of practices suitable for infants/toddlers, pre-schoolers, kindergartens, and primary school level (Copple, et al (in Waluyo, et al 2018)). Various types of early childhood education in Indonesia rests on 5 (five) main services, namely kindergarten which organizes programs for children aged 4-6 years, Play Group which organizes programs for children aged 2-4 years and Childcare which organizes education and care for children aged 3 months to 6 years.

In Indonesia, early childhood is children aged 0-6 years, whereas, in the book *Basic Principles of Kindergarten Education* (2014), the National Association for Education of Young Children (NAEYC) is an association of child educators based in America, dividing early childhood into 0-3 years, 3-5 years, and 6-8 years. In line with the opinion of Harditya, et al (2018) states that early childhood is an age that has a critical period of growth and development of children because at this time the child is in optimal development both for intelligence and physical.

Safety education for early childhood (aged 0-6 years) is very important because the child is in the golden age; children easily absorb anything in themselves and following the characteristics of early childhood who have a strong curiosity and enthusiasm for many things. So it will be easy to

teach children to increase knowledge about road safety and is applied to start from the introduction of simple traffic signs to the rules of walking, crossing the road, and driving. Although it is still necessary to provide a good example and continual habituation and is done through the guidance of adults or parents.

Panti Puruhita kindergarten in Krapyak is an early childhood institution located in West Semarang. That area is a dense area of vehicles and frequent traffic accidents. Around the Panti Puruhita kindergarten, there are many traffic signs. Based on observations and interviews with some kindergarten teachers in Semarang, one of them was in the Panti Puruhita Kindergarten, which had never received any information or information about traffic safety from related parties because there was no cooperation from the Transportation Department Semarang and Police Resort Semarang with Papita Puruhita Kindergarten in Krapyak. Teachers' understanding of the Papita Puruhita Kindergarten about traffic safety is still low. Strengthened by the results of interviews conducted by researchers that the teacher only mastered in the academic field and the teacher believes that in the introduction of road safety is more appropriate for parents because parents are directly involved in children's daily lives.

Children learn from their closest subjects, parents, and teachers. In this case, the teacher should contribute to the introduction of road safety to children because the teacher is indirectly involved in the development of children in school. However, in applying traffic safety material to learning in schools, teachers find it difficult to choose learning methods that can be adjusted to increase traffic safety knowledge in early childhood.

The number of learning media in kindergarten Papita Puruhita Kindergarten that is rarely used, one of which is traffic signs that should be used for media in learning. The teaching and learning process is more likely in the classroom, children will quickly feel bored and do not have much time to explore on their own, develop their imagination and complete their knowledge. From the results of interviews with several teachers in Kindergarten in Semarang, media and introduction activities on suitable road safety are urgently needed so that the introduction of road safety can be done at any time and does not have to wait from the relevant institutions to provide socialization activities and traffic safety education.

There are various methods of early childhood learning including storytelling, play, in-

tegrated learning, field trips, and singing. This Early Childhood Education can be effectively applied in the concept of learning while playing. Sudono (in Astuti, et al 2016) states that play is an activity carried out with or without using tools that produce understanding or provide information, give pleasure and develop imagination in children. Play is a process of preparing to enter the next world. Play is a way for children to gain knowledge about everything. In line with the opinion of Na'im (in Wardani, et al 2018), play is one of the main tools that become exercises for children's growth. Play is a medium, where the child tries himself, not only in his fantasy but also actively real.

The stimulation provided to early childhood certainly must be following their development. This stage of development can be reviewed from various aspects such as cognitive, physical, language, social, emotional. The delivery process must also be following the world of children, namely by playing because playing is a learning tool for them. Learning activities while playing will have a positive impact on children's development because basically, the world of children is a world of play, especially at an early age.

Play is a way for children to gain knowledge about everything. Play will grow children to explore, train physical growth and imagination, providing broad opportunities to interact with adults and other friends. In playing, children can develop language skills and add vocabulary, as well as make learning done as very enjoyable learning. Play activities undertaken by children have stimulated the emergence of various games intended for them. Following the activities and interests of children that are happy playing outside and involving physical activity and choosing to play with friends rather than playing alone, the researchers tried to make a game of traffic dragon snake in introducing road safety in early childhood

According to Musfiroh (in Mulyani, 2018) stated that the dragon snake is a game that is very popular with children. This game can be done individually although it will eventually become a group. This game does not need a game tool but requires a fairly wide place. This game also has a lot of movement activity and is accompanied by a song so that children feel happy and not bored.

Mulyani (2018) stated that the dragon snake is one of the traditional games in Indonesia. In this game, children line up holding on to the "tail" which is the edge of the shirt or waist of the child in front of him. The biggest child plays as the chief and in the foremost in the line. Be-

sides, two children act as gates by standing facing each other and holding each other above their heads.

The Megawangi's opinion (in Putri, et al 2019), the dragon snake game is full of benefits and teaches a lot about values such as cooperation, cohesiveness, togetherness, sharpening the brain and many other positive benefits. One game that has many benefits and meanings is the dragon snake game which has now begun to be abandoned by children in today's generation.

Improving the behavior of road users who are safe in accordance with The National General Plan for Traffic and Road Transportation Safety 2011-2035 on the 4th pillar, the researcher has a thought to try to make a traffic dragon snake game to prevent accidents by increasing road safety knowledge and introduction of traffic signs since early stage. The introduction of signs requires learning media in the form of media that functions to make it easier for someone to convey a safety message to children. With the introduction of road safety with a variety of supporting media that have been designed following the development and potential of children, the child will develop properly. So that the game of traffic dragons that are designed can facilitate the learning of road traffic safety to early childhood.

Treatment conducted by researchers is a traffic dragon snake game. The aim is to find out whether the traffic dragon snake game can increase road safety knowledge of early childhood. Besides that, in the traffic dragon snake game, children can know about the traffic signs and children can also know the safety on the road that is good and right. By getting to know traffic signs and knowledge about road safety, children will have a disciplined and orderly attitude in traffic. Remember that the attitude of discipline and orderly in traffic must be owned by every human being and must be applied early on.

METHODS

The approach in this study is a quantitati-

ve approach to the type of experimental research approach. This study uses a one group pre-test post-test design. The independent variable in this study is the traffic dragon snake game, while the dependent variable in this study is the road safety of early childhood. The population in this study is 44 children. The sampling technique in this study uses a simple random technique, which is a random sampling technique without regard to strata in the population (Sugiyono, 2016). There are 30 samples in this study.

This research was conducted at Panti Puhita kindergarten in Krapyak from September to October 2019. Data collection techniques in this study using a scale is a scale of knowledge about road safety of children with a total of 37 valid items that have been tested so that it can be used in research, while data analysis techniques are used is the normality test, hypothesis testing with paired sample t-test, and percentage techniques.

RESULTS AND DISCUSSION

This section is an explanation of the results of research relating to the application of the traffic dragon snake game in increasing knowledge about road safety in early childhood. Based on the pre-test data results can be seen as Table 1.

The data Table 1 shows that the class interval for early childhood road safety knowledge is divided into five categories, namely very low, low, medium, high and very high. The very low class has a range of grades 36-57 with a frequency of respondents as many as 0 children or by 0% of the total respondents. There is a low-level class with a range of grades from 58 to 79; there are 20 respondents with a frequency of respondents or 66.7%. Then in the medium category with a range of values 80-101, the frequency of respondents was 10 children or 33.3% of the total respondents. Furthermore, in the high category which has a range of values 102-123 with a frequency of respondents as much as 0 or as much as 0% of the total respondents, and a range of

Table 1. Pretest Results Data

Interval score	Category	Frequency	Percentage
36-57	Very Low	0	0%
58-79	Low	20	66,7%
80-101	Medium	10	33,3%
102-123	High	0	0%
124-145	Very High	0	0%
Total		30	100%

Table 2. Post-test Results Data

Interval score	Category	Frequency	Percentage
36-57	Very Low	0	0%
58-79	Low	0	0%
80-101	Medium	0	0%
102-122	High	4	13,4%
123-144	Very High	26	86,6%
Total		30	100%

values between 124-145 with a very high category has a frequency of respondents as much as 0%.

The data Table 2 shows that the interval classes for early childhood road safety knowledge are divided into five categories, namely very low, low, medium, high and very high. The very low class has a range of grades 36-57 with a frequency of respondents as many as 0 children or by 0% of the total respondents. There is a low-level class with a range of grades 58-79, there is the frequency of respondents as many as 0 children or by 0%. Then in the medium category with a range of values from 80 to 101, the frequency of respondents was 0 children or 0% of the total respondents. Furthermore, in the high category which has a range of values 102-122 with a frequency of 4 respondents or as much as 13.4% of the total respondents, and a range of values between 123-144 with a very high category has a frequency of 26 respondents or as much as 86.6%.

From the above data, it can be concluded that the results of the study of the game of the traffic dragon snake can increase the knowledge of road safety for early childhood at the Panti Puruhita kindergarten in Kranyak. Evidenced by the results of the calculation of the Paired Sample t-Test are as Table 3.

Table 3. Results of Paired Sample t Test Hypothesis Test

Paired Samples Test			
	T	Df	Sig. (2-tailed)
Pair 1 pretest posttest	-28,421	29	.000

Based on the calculated Paired Sample t-Test formula above, there are several character-

istics. Data is stated to have increased if sig (2 tailed) <0.05. If sig (2 tailed)> 0.05 then the hypothesis is rejected. Conversely, if sig (2 tailed) <0.05, the hypothesis is accepted. The table value used is -2,045. The hypothesis is accepted if tcount <ttable.

From the data above, t -28.421 was obtained with a sig (2-tailed) value of 0,000 <0.05. Because of -test <-table (-28.421 <-2.045) and significance (0.000 <0.05), Ho is rejected, meaning that there is an increase in knowledge of road safety for young children before and after being treated. Besides that, it can be seen from the average obtained before and after the implementation of the traffic dragon snake game. While based on the results of the percentage value can be seen as Table 4.

Based on the Table 4, it can be seen that the mean value (mean) from the pre-test results to the post-test results has changed, namely for the mean value (mean) pre-test is worth 76.17 and post-test is worth 131.17. So that the difference obtained is 55. Then from the results of these calculations, it can be seen an increase with the percentage formula as follows:

$$\text{Increase\%} = (\text{Posttest Score} - \text{Pretest Score}) / (\text{Maximum Score} - \text{Pretest Score}) \times 100\%$$

The traffic dragon game was chosen by the researcher because the traffic dragon game was an easy, safe and fun game for children. Also in this game children can learn discipline and orderly in traffic. With discipline and orderly in traffic, children will have a lot of knowledge about road safety, such as knowing good and correct traffic procedures, knowing the meaning and names of traffic signs, knowing how to walk and cross the road safety. This is one of the aspects of road safety knowledge.

Table 4. Paired Sample Statistics Data

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest	76,17	30	9,033	1,649
	posttest	131,17	30	8,171	1,492

Several previous studies have been carried out, namely Building Learning Media in Traffic Signs with Animation as a Learning Method Since Early Childhood Case Study Aisyah Brebes Kindergarten by Purwanto (2017). This matter can help teachers in conveying learning materials for traffic signs to students.

The same research was also conducted by Tjahjono (2016) regarding efforts to improve road safety in a case study conducted on the coast of Java, Subang and Indramayu, West Java, by conducting a road safety audit based on traffic accident data obtained from Integrated Road Safety Management System owned by Traffic Corps and understand the anatomy of accidents that exist and community behavior factors on the road. The results of the study concluded that the accident rate in the area was reduced.

Furthermore, research conducted by Shaari, et al (2015) regarding the inculcation of road safety awareness in children using interactive web applications. The results showed that the inculcation of knowledge about safety awareness of children increased. It was carried out through the stages in an interactive web application specifically designed for children. Based on the description of the relevant research results it can be concluded that the knowledge of traffic safety increases after being given the activities of the traffic dragon snake game.

CONCLUSION

The conclusion in this study is the knowledge of road safety in early childhood after being given treatment using the traffic dragon snake game activity is higher than the knowledge of road safety for early childhood before treatment using the traffic dragon snake game activity. With an average value (mean) the value of the pre-test results of 76.17 and post-test of 131.17 so that the difference in value is obtained 55. Then it can be concluded that the dragon snake game is effective to increase road safety knowledge of early childhood.

There is an increase in knowledge of road safety for early childhood viewed from the activities of the traffic dragon snake game after being given the treatment of the activities of the traffic dragon snake game is 81.09%. Thus, it can be said that the application of the traffic dragon snake game activity is effective to increase road safety knowledge of early childhood.

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