



The Effectiveness of Rope Ladder Physical Activity Media on Physical Motor Activity in Early Childhood

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Abstract. A pleasant environment is needed to increase student motivation in learning physical education, especially in the early elementary classes. The pleasant atmosphere can be created through the use of Rope Ladder (Rolade) Physical Activity learning media. The current study aims are to identify and analyze the effectiveness of Rope Ladder (Rolade) Learning Media for increasing learning motivation of early grade elementary school students in Karawang Regency. This research was done using the one group pretest-posttest experimental design with 19 students aged 7-8 years. The experimental was carried out in 12 times. The collected data were analyzed using paired T-Test Technique. The results showed that Rope Ladder (Rolade) Physical Activity learning media has a significant effect on improving early grade elementary school student's motivation. This is evidenced by the increased ability of students in achievement motivation, motivation to foster social relations, and motivation in mastering physical education learning materials. Rope Ladder (Rolade) Physical Activity learning media is an appropriate tool for improving learning motivation in early grade elementary school students.

Keywords: Early Childhood, Learning Motivation, Rope Ladder Physical Activity, Physical Motor Activity

1 Introduction

At the beginning of 2020, the world situation was on alert because there was a dangerous virus, namely Coronavirus Disease (Covid-19). The World Health Organization has legally declared COVID-19 a pandemic outbreak [1]. Therefore, the heads of various countries have taken various steps to limit the spread of COVID-19. therefore, the state government implements "at home" rules, forcing students at school to work, worship, and carry out learning in their respective homes. Based on the Appeal from the Head of State of the Republic of Indonesia in a Letter decided by the Minister of Education and Culture, it requires the implementation of learning in a situation where the COVID-19 disease is spreading so that it is not carried out directly in schools, but carried out in their respective homes[2]. [3] The implementation of learning that is carried

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out at home in physical education learning implementation classes is recognized as the right strategy to continue learning in a situation of the spread of the COVID-19 disease. The Importance of Challenges Learning sports to do at home during the Covid-19 crisis is very urgent. The implementation of learning that is carried out at home in the implementation of Physical Education, Sports and Health learning for elementary school-aged children is definitely different when compared to the implementation of learning in schools. Implementation of Sports and Health Physical Education Learning in elementary schools, especially in grade one (age 7-8), is prioritized in a fun atmosphere. Utilization of the learning environment in learning Physical Education, Sports and Health, namely efforts made by teachers, one of which is to develop the learning motivation of elementary school students, because it does not rule out the possibility that during the teaching and learning process a teacher encounters students who are less motivated or lazy and boring [4].

Some of the results of previous research related to this study show that related to anxiety increases during homeschooling and there is an increase in depression during a pandemic outbreak situation [5]. [6] This study examines the impact of studying at home during a pandemic which did not produce a solution to solve it. Other studies have indicated that specific information technology is a quite appropriate solution for implementing learning activities during the COVID-19 [7]. Next, recent research specifically focuses on organizing teaching and learning processes in the context of a pandemic which fails to discuss the situation of students involved in the online teaching and learning process at home. [8] On this occasion, the researcher felt interested in overcoming a problem in order to complete a solution for students to participate in the implementation of Health and Recreation Physical Education learning during the COVID-19 pandemic. One novelty in the learning environment that can increase elementary school children's learning motivation from home is called Rope Ladder (Rolade) Physical Activity [9].

Rope Ladder (Rolade) Physical Activity is a game-based learning innovation designed to solve problems in increasing student motivation. Definition of Rope Ladder (Rolade) Physical Activity is a game-based learning environment that uses pictures of ladders and ropes, which are based on games resembling snakes and ladders. The novelty in the Rolade game when compared to the usual snakes and ladders game is the Rolade game in that each box contains exercise commands whose movements can be adjusted to aspects of the development of physical motoric movements of children aged 7-8 years. Model or the Rolade game method, which is able to increase and develop elementary school children's learning motivation to get to know the center of motion. Learning that is done at home does not prevent students from being less active when conveying their wishes and thoughts so that it can lead to learning boredom. Therefore, it is necessary to motivate students to increase their learning enthusiasm in order to achieve learning success [10]. Learning can strengthen the enthusiasm for learning by increasing and developing learning motivation.

The main objective of the results of this research is to develop the Rolade innovation to increase motivation in learning for elementary school children. Furthermore, the innovation from this research is the effectiveness of Rolade in increasing motivation in

learning elementary school students. Motivation is a form of power in motivating someone in carrying out an activity to achieve a goal. At the Power it is stimulated by various needs, such as (a) the hope to be fulfilled; b) ethics; (c) purpose; and (d) feedback [11]. The concept of motivation includes three important things, namely goals, knowledge and metacognitive processes [12]. Motivation is a factor for implementing optimal learning, along with general health and intelligence, abilities and interests. Motivation in learning is a non-intellectual psychological factor that plays a special role in developing enthusiasm, emotion in learning. Therefore, motivation has a very strategic role in learning and at the end of learning, motivational principles must be introduced into the learning process so that it is more optimal. The use of interesting media can increase motivation in studying at home and generate a desire to learn. A teacher can create audiovisual media to support learning at home.

2 Method

This research uses quantitative research methods. This study examines the effectiveness of increasing learning innovations for elementary school students through media innovation in learning Physical Education, Sports and Health in an effort to increase motivation in learning for students who take part in Physical Education, Sports and Health lessons at the elementary school education level which are carried out at home. Collection of information about the motivation level of elementary school children varies between 7 and 8 years through a questionnaire. Implementing the Rolade innovation in the field of physical education learning media in the implementation of learning at home, namely in the Covid-19 pandemic situation. The innovative application of the Rolade learning media is integrated into the Physical Education Sport and Health learning application which is carried out at home, and is provided to the experimental group 12 times over a three-month period.

The location in this study is at SDIT Lampu Iman in Karawang Regency. The researcher determines this location, which is in accordance with the mission of the Universitas Singaperbangsa karawang, namely: (1) Preparing resources that are conducive and have noble character; (2) creating, applying and enhancing quality knowledge, technology and art; and (3) To be actively involved in devoting oneself to society in increasing one's potential. So, to optimize the efforts of Universitas Singaperbangsa Karawang in fulfilling its mission, efforts in developing innovative Rolade learning media are carried out to overcome the implementation challenges of managing something. Learning that is carried out from home in Physical Education, Sports and Health for students at the elementary school level is seen as an optimal effort to continue learning activities carried out at home during the Covid-19 pandemic.

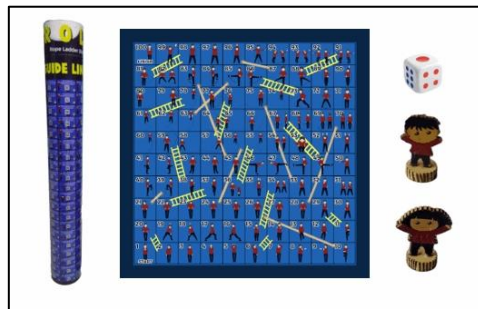
The variables selected in this study were: (a) the independent variable, namely the effectiveness of using the Rolade media innovation in the Physical Education Sport and Health class, and (2) the dependent variable, namely the learning motivation of students at the elementary school level in the Karawang administration. The research design used in this study is the one group pretest and posttest design [13]. The cluster random sampling technique was used to determine the subjects, where the samples were taken

from groups not individuals or regions, then called clusters. Therefore, SDIT Lampu Iman was chosen as a school in the experimental group for first grade students with 25 students aged 7-8 years. There is no comparison class with pre-test, treatment and post-test used in this study, so the extent to which the effect of Rolade has on the effectiveness of using innovative learning devices can be known with certainty.

The instrument that was made and prepared in this study was an instrument for testing motivation in student learning at the elementary school level in the form of a motivational questionnaire in learning which was developed based on the instrument compiled by McClelland [14]. To collect the necessary data, the following data collection methods were used in this study: (1) Pretest; (2) implementation of treatment up to 12 sessions; and (3) Posttest implementation. In addition, the collected data were analyzed using the paired t-test technique ($p. 0.05$) to determine the gain from the pre-test to the post-test in the following way: (1) test mean and standard deviation; (2) normality test; (3) homogeneity test; and (4) hypothesis testing.

3 Result And Discussion

The results of this study are a game-based learning environment that increases students' motivation to study at home during the COVID-19 pandemic. The rope ladder exercise is an innovative game learning environment for physical education designed to solve the problem of increasing student motivation. Rolade physical activity is a video-designed learning tool used by elementary school students individually or in groups in the Physical Education Sport and Health class. Fig 1 is an innovation using the Rolade media innovation.



Source: Personal Documentation

Fig. 1. Rope Ladder (Rolade) Physical Activity instructional media

Rolade is an innovation in game learning media in Sports and Health Physical Education, and is also a type of physical activity game that is inspired by the snake and ladder game which is also known to the general public. Rolade in Sports and Health Education Learning is a game-based learning innovation in the form of a game similar to the Snakes and Ladders game, but new rules are added to the game rules so that the game is more interesting and not so boring. The innovation and uniqueness of the

Rolade compared to snakes and ladders is reflected in the physical appearance of the Rolade. Each figure in the toy box contains training instructions which are adjusted through motion commands adapted to the motion aspects of children's movement development at elementary school age [15].

The implementation of the learning process through the learning media Rolade during learning at home in Physical Education Sports and Health for children at the elementary school level cannot be separated from the supervision/support of parents who represent the teacher at home, so this game requires the participation supervisor or parent representing the teacher [16]. The following is a method for implementing the Rolade game learning program, including: (a) Students are prepared to wear full sports clothing and shoes; (b) teaching students the habit of praying first before starting learning Sports and Health Physical Education at home; (c) making the Rolade learning media device which contains 100 number boxes representing movement orders, dice and student miniatures; (d) The game begins by first rolling the dice, then when the student's thumbnail arrives at the number field, the student performs the action command shown in the image (eg jump 10 steps), etc. e) implementing a systematic tracking game, following the instructions from the Rolade; (f) When the doll arrives at the box with the picture of the rope, the command is for the doll to go down the rope, but when the doll arrives at the box with the picture of a ladder, it leaves or goes up to the next higher level. (g) When the student's thumbnail reaches box 100, the Rolade game is declared complete. (h) Familiarize students to stop studying or playing by praying. Fig 2 is a guide or ladder for the Guide line Rolade.

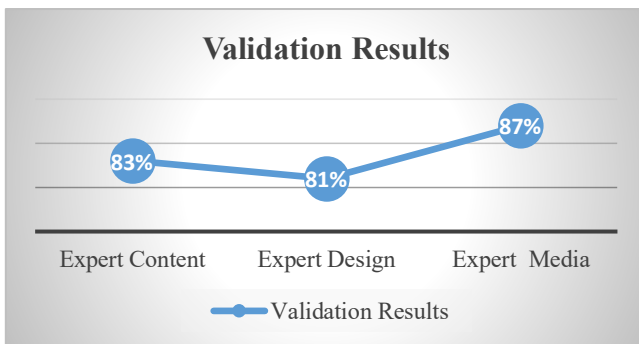


Source: Personal Documentation

Fig. 2. Guide line Rope Ladder (Rolade) Physical Activity

Based on the application of the findings stated above, it can be assumed that the benefits of Rolade Physical Activity in the implementation of physical education carried out at home are as follows: (a) Make it easier for Physical Education teachers to carry out learning conducted by elementary school students in House; (b) can increase and develop students' interest and motivation to carry out teaching and learning processes carried out at home and (c) develop and improve patient, persistent and disciplined attitudes according to guidelines for implementing the game (Cho et al., 2013). So that at the end of the game, variations in the movements carried out by Rolade can increase learning motivation for elementary school children.

Game-based Rolade learning media before being tested, was previously validated by a group of expert teams. The expert team consists of movement content experts, image design and audio-visual media. Regarding the feasibility test of the learning media, it was developed by three experts based on the results of the validation analysis which can show or prove that the innovation product of the Rolade learning media can be used as part of the implementation of game-based Physical Education, Health and Recreation learning in increasing motivation in student learning. During the implementation of Jamani Sports and Health Education lessons which were carried out at home during the COVID-19 pandemic. However, the three experts have several proposed changes to improve the learning media products developed. The advice from the expert group is to harmonize the color composition, the presentation design must be appropriate and the shape and size must be adjusted for children aged 7-8 years.



Source: Personal Documentation

Fig. 3. Expert Team Validation Result

Based on the results of an average score of 83.67% from the three experts, it means that the product to be developed and implemented can be used and can be tested in practice (Fig 3).

Next The purpose of the field test is to verify the effectiveness of the Rolade to achieve the learning process objectives that have been determined. In addition, this also applies to the acquisition of information about the components of the Physical Education Sport and Health learning process, the components of learning materials, and the components of skills. Field trials were conducted on 19 children aged 7-8 years adjusted

for the number of children at SDIT Lampu Iman Karawang. Children aged 7-8 are given the opportunity to use a fun learning environment. This happens because the goals and outcomes of education encourage students studying at home to recognize the shortcomings of media and make it material. Developing a learning environment to encourage students to study at home during the COVID-19 pandemic, in line with the main objective. Prior to the learning media session, the participants completed a pre-test to assess their initial skills and after the learning media session, a post-test was followed at the end of the activity. Comparison of the results of the initial and final field tests is shown in Table 1.

Table 1. Pre-Test And Post-Test Field Test Results

	Pre-test	Post-test
N Valid	19	19
Mean	79.47	93.63
Median	79.00	94.00
Mode	79	97
Std. Deviation	2.503	6.020
Difference	6.263	36.246
Range	10	19
Minimum	74	85
Maximum	84	104
Total	1510	1779

Based on Table 1. This can be illustrated with a diagram like Fig. 4.

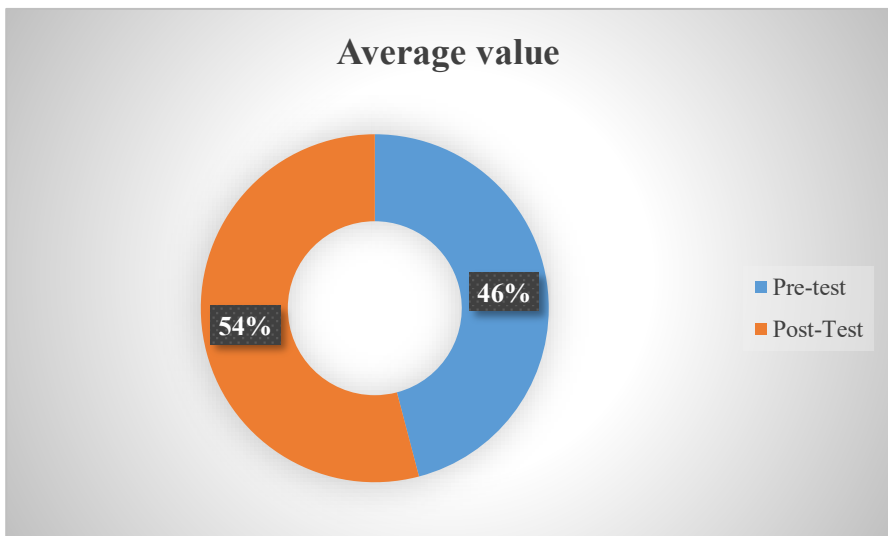


Fig. 4. Preliminary Test Results and Posttest

Based on Table 1, the results of the Paired T-Test with SPSS 24.0 are presented in Table 2.

Table 2. Paired Statistical Results

	Statistic	T (table)
Mean	-14.158	
Std. Deviation	6.414	
T	9.621	1.734
Df	18	
Sig. (2-tailed)	0.000	

Based on Table 2 above, the value of $T = 9622$ can be obtained when compared with the t table on df 18 of 1.734. Because the t -statistic is $9.621 > t(\text{table})$ 1.734, it can be interpreted as significant that the first test is different from the last test. You can also see the Sig. (2 sides) or a p -value of 0.000. This means that there is a difference between before and after treatment with a p -value of $0.000 < 0.05$. The mean -14.158 has a negative value that increases after the procedure. An average increase of 14,158 indicates that game-based learning media is effective in motivating students to study at home during the COVID-19 pandemic. The results of this study were the treatment of 12 meetings with Rolade game-based learning for children aged 7-8 years which in turn could increase students' motivation to learn. Next, based on the results of field testing, a learning environment based on the Rolade game can encourage students to have fun while studying at home during the COVID-19 pandemic.

4 Conclusion

In some sense, motivation is expressed as a need, will, cue, instinct, and desire that encourages humans to act for. This strength is supported by various needs, such as (a) the desire to be obtained; b) ethics; (c) purpose; and (d) reciprocity [17]. The concept of motivation includes three important concepts, namely goals, knowledge and meta-cognitive processes [18]. Motivation is an element for optimal learning, along with general health and intelligence, skills and interests [19]. Meanwhile, learning motivation is a non-intellectual psychological factor that plays a special role in developing passion, emotion and enthusiasm for learning [20]. Therefore, motivation plays a strategic role in learning [21] and at the end of the learning process, motivational principles must be applied in the learning process so that it is more optimal [22]. The use of interesting media can increase motivation to study at home and generate a desire to learn. On this occasion the teacher can take advantage of tools to support learning carried out at home.

Theory or learning material through an innovative learning environment is constructivism that sees child development carried out through the teaching and learning process [23]. The process of constructivism is a process of building knowledge that emerges from within the learner. Materials, media, tools, environment and other facilities can support the learning process. A teacher creates a very pleasant learning atmosphere. In carrying out effective learning, teachers can use learning media based on the Rolade game. In addition to the entertainment atmosphere, the learning environment is

also important, namely the understanding of real experience for the development of personal and social skills [24].

Digital-based game-based learning media that allows learning effectiveness to be created individually and effectively and can increase maximum learning outcomes [25]. Learning is an activity carried out by the teacher in achieving a teaching and learning process goal by improving the quality of learning carried out by students [26]. The teaching and learning process is an effort to study students, so that situations become fun in learning events, namely efforts to change student behavior. [27] Interactions carried out by students with their environment can lead to changes in behavior. The occurrence of a change in behavior depends on several factors, namely: internal factors and external factors [28]. Teaching is an effort made to provide a stimulus, guidance, direction and motivation by the teacher to students so that the teaching and learning process can occur [29]. Furthermore, learning is a process of changing behavior (in a broad sense) that can be caused or modified by practice or practice. Learning is a set of physical activities aimed at encouraging behavior change as a result of individual experiences in interacting with their environment, including cognitive, affective, and psychomotor aspects [30]. The teaching and learning process can play an important role in learning because the teaching and learning process includes learning events and teaching activities. Learning is an activity in the form of psychophysics resulting from learning.

During the process of developing educational media based on the Rolade game which has implications for product implementation to be developed as a resource that facilitates the teaching and learning process for children aged 7-8 years. This learning media product can help a teacher and students aged 7-8 years as a learning resource and encourage students to carry out learning at home during the COVID-19 pandemic. Through media development it is hoped that it will be effective in fulfilling some of the urgency of children aged 7-8 years when carrying out learning at home.

To support the widespread use of game-based Rolade learning media, teachers and parents at home must be able to guide students, because Rolade is a learning tool that encourages children to do learning at home. Furthermore, based on the conclusions and implications presented, there are several recommendations, namely: (1) A teacher through limited efforts to facilitate learning needs to implement an effective learning environment to support teaching and learning processes that are innovative, effective, efficient as well as fun. Therefore, it is suggested that teachers can develop in the development of learning and not just trainers. Therefore, understanding related to developmental research is very important to support the teaching and learning process.

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