Development of the Snake and Leader Game Model to Improve Physical Motor in Early Childhood

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Abstract

It is very important to pay attention to motor development in early childhood, this will affect the child's motor skills as an adult. Improving movement abilities in early childhood can be done with game models that suit the characteristics of early childhood. The game model that will be developed in this research is a movement game using snake and ladder. The method used in this research is research development from Borg and Gall (1989). The research will go through ten stages from the researcher collecting problems that will become research topics to large-scale production. This research also went through the stages of testing the game model and was given validation. During the trial, the effectiveness of this snake and ladder game model will also be seen. After being developed, this snake and ladder game model includes jumping movements with one leg or two legs. This research was carried out at Alphabet Kindergarten in Tasikmalaya City. After going through the stages in this development research, it can be concluded that the snake and ladder game model can improve gross motor and fine motor physical abilities in young children.

Keywords: Games, Snake and Ladder, Physical Motor, Early Childhood

INTRODUCTION

Before children grow up there is a process of gaining knowledge, both at school and at home. The best age for children to develop basic abilities can be provided in early childhood education (Nurzaman et al., 2017). Early childhood education is also a place to prepare the nation's future candidates to become strong adults in the future (Formen, 2022). Children can be seen as individuals who are new to the world (Aryani, 2015). Early age is a very important period for the development of children's potential (Sulastri & Tarmizi, 2017), groups of children who are in a unique growth and development process (Ariyanti, 2016), the concept of early
treatment for children who are in pre-school or at school age in the classroom 1 to class 3 (Sudarsana, 2017). Further confirm the experiences that children gain in early childhood education institutions are mostly formed through interactions between teachers and children. Therefore, teachers must try various interactions with children and support their learning and development. To do this, teachers need to observe children's interests and environments and respond sensitively to them (Choi & Park, 2023).

The ice aims to provide education to children up to six years old. This education includes spiritual and physical matters that are provided to prepare children for higher education. This is because this age is a crucial time for the formation of personality and character in early childhood. Early childhood education is the basis for children's growth and development in terms of religion, physical abilities, motor skills, cognitive abilities, language, arts and emotional intelligence (Partami & Sujana, 2021). Early childhood children have unique characteristics, namely different characters even though the children are born as twins, whether in their learning abilities or background. Many people call the age of early childhood the golden age, this is because this age is the period with the most potential for development and learning (Hikmah & Alam, 2022).

Early Childhood Education is a form of education for children, up to 6 years old, which is provided in the form of optimizing growth and development to prepare children to enter further education. Suyadi (2015) stated that educational services for children aged 0-8 are a forum for developing various aspects of child development. Maria Montessori (2022), she believes that early childhood is experiencing a sensitive period.

Children's physical and psychological functions begin to mature and respond well to all the stimulation around their lives (Marwan, 2018). All potential traits that children have will develop very rapidly and will be very influential in optimizing the stimulation of various aspects of children's physical and spiritual development.
Early childhood children are also active, that is, they always want to move and play. Playing is the best way to develop children's abilities (Putro, 2016), and is a mandatory activity for children to get to know their surroundings. Playing is also often done by adults to relieve boredom and relieve stress (Widodo & Lumintuarso, 2017).

Being active in early childhood has an effect on the growth and development of physical motor skills because every human being will normatively experience development and growth (Marwan & Rohayati, 2021). Growth means experiencing a quantitative increase that can be seen with the naked eye, such as increasing height and weight. Meanwhile, experiencing development means there is a qualitative improvement which includes increasing psychological abilities such as becoming smarter and increasing knowledge.

Motoric is something related to movement. Physical development is closely related to children's motoric development. Motor physical condition is very important (Farida, 2016), and every child will go through stages of growth and development flexibly and continuously (Ariyana & Rini, 2009).

Motor skills are divided into two, namely gross motor skills and fine motor skills. Gross motor development is a development of control (Riah et al., 2021). Gross motor skills are the ability to move various parts of the body at the behest of the brain and regulate body movements against various external and internal influences (Marwan et al., 2021). Gross motor development in children is an important aspect that teachers and parents must pay attention to (Mahmud, 2019). The formation of a strong and effective partnership between students and parents plays an important role in achieving goals (Lutviatiani et al., 2023). Children who have good gross motor skills will also have good mental development (Hidayanti, 2013).

Physical It is very important for someone to master gross motor skills because they can carry out daily activities, without having good movements they will be left behind by other people, such as: running, jumping, pushing, throwing, catching and kicking, these activities require and use large muscles on a person's body (Ananditha, 2017). Meanwhile, fine motor skills
are movements that use small muscles and require careful coordination (Marwan & Rohayati, 2022) so that you can do various creative things, such as cutting paper with straight cuts, drawing and coloring well, using clips to join two pieces together, sheet of paper and sharpen a pencil.

This research aims to determine the physical development of children's gross motor skills and fine motor skills through the snake and ladder game for children knows more and can master every movement that involves gross and fine motor skills using the snake and ladder game model. It is very important for a child to master physical motor skills at an early age because it can make it easier for children to carry out daily activities or activities, snake and ladder games are also very helpful in children's growth and development, for example: running, jumping, pushing, throwing, catching and kicking, because the snake and ladder game uses large muscles in the body.

The snake and ladder game can practice improving aspects of motor development and motor coordination in children. The snake and ladder game is also useful in developing the abilities of the nervous system and related muscles. If this game is played continuous it can increase the child's physical endurance. For young children, it is enough to practice basic movements first that do not involve too much physical effort. Because of the many benefits of playing snake and ladder that a person will get if they can master it well, proper and regular practice is also needed to hone their skills in playing snake and ladder. The training method is success in the snake and ladder game itself and is the main factor that is very influential in the progress of the training.

Children will understand more deeply and gain new knowledge through the game model (Fauziddin & Mufarizuddin, 2018). The snake and ladder game is a game that uses sports equipment used by coaches in sports which aims to improve athletes' agility, flexibility, coordination and speed. The snake and ladder game can also be called a dexterity ladder. To practice improving aspects of movement, balance, muscle endurance,
and coordination of other body parts, you can use an agility ladder or agility snake and ladder. How to do the agility snake and ladder can be done by running zigzag at speed through obstacles by crossing your legs and returning them to their original shape and repeating the movement several times in one area.

The aim of this research is to create a snake and ladder game model to improve gross motor physical abilities in young children. A game model that can improve children's body movement coordination with exercises or games using the snake and ladder game for children's development which can improve children's self-quality in the scope of life at school, at home, in everyday community environments to have a good effect on the general public. The benefit of this research is that it can provide new references regarding games to improve children's gross motor skills in early childhood.

**METHOD**

Research carried out by researchers uses development research methods or what is usually called research and development (R&D) from Borg and Gall (1989). The research conducted by researchers used 10 steps from borg and gall. This research was conducted at Bintang Harapan Early Childhood Education with a total of 20 research subjects. The characteristics of the research subjects were early childhood children aged 5-6 years, male and female. This step starts from determining the problem topic until the final step is large production.

Pestler research is illustrated with a chart in figure 1.

![Figure 1. R&D (Development Research) Flow Chart](Bennett et al., 1984)
Determining Research Topics/Potential and Problems

There is a stage of determining the research topic/potential and problem. Researchers begin to look for problems that will later be used as topics for this development research. The steps taken by the researchers at this initial stage were a needs analysis by going to the Tasikmalaya City Alphabet Kindergarten which provides early childhood education to make observations. The process of searching for this data goes directly to teachers and physical motor development experts.

After passing the initial stage, the next process is to collect data as information which will later become the basis for developing the snake and ladder game model. At this stage the researcher also collects information from various literature that is related to the research topic and the model to be developed. The characteristics of the model to be developed must refer to the results of the needs analysis.

The third stage in this development research is to create a concept for the game model that will be developed, namely the snake and ladder game model. The model concept developed by researchers is more than one model. Experts in the field of sports are involved in this process, providing input and suggestions regarding the concept of the snake and ladder game model that will be developed.

The purpose of validating the snake and ladder game model concept is to find out whether the model concept developed meets the desired characteristics by involving 2 (two) expert judgments who are experts in their fields. This expert judgment provides an assessment of the snake and ladder game model developed by researchers. The snake and ladder game model that has received assessment from expert judgment is then improved by researchers in accordance with the assessment and input provided by experts. The aim of improving the snake and ladder game model is to make the model better than the previous model.

The researcher conducted a trial involving 10 children, this trial is also usually called a small trial. In this small trial, 10 children tried 10 snake and
ladder game models that were developed and had passed assessments from experts. This small trial also involves teachers being able to provide input on the models being tested in order to get a good game model for the children.

After the researchers conducted a small-scale trial, the researchers made improvements again based on input from the teachers involved in the small trial. The teachers' input was in the form of a questionnaire that had been filled in during the small trial. The small trial became a reference so that researchers could get a good snake and ladder game model.

Researchers who had improved the snake and ladder game model after receiving input from a small trial carried out the trial again. This time the trial was carried out involving more participants than before, namely 20 children. This trial is also usually called a large-scale trial. At this stage the teacher is still involved to help assess the model used.

If the large-scale trials carried out still receive input from the teachers and experts involved, this improvement stage needs to be carried out. However, if there is no improvement in the large-scale trial process, then this research is ready to move to the next stage.

The final stage in this research and development is mass production, namely provide information regarding the snake and ladder game model that has been developed to the wider community through training for kindergarten teachers. Scientific publications in journals are also carried out to provide information to the public.

RESULTS

Based on the results of assessments by all experts, both physical experts, growth and development experts, the results are as follows: This final assessment was obtained by averaging the overall results of assessments from physical motor experts, growth and development experts, as well as the results of small-scale product trials by teacher, shows that the final product of the Snake and Snake and Ladder Game Model received an "A" grade in the "Very Good" category, thus it can be stated that the Snake and Snake and Ladder Game Model game is very suitable as a
game model for improving gross motor and physical motor skills. smooth early childhood. The results of this research are in line with research from (Mahfud & Fahrizqi, 2020), the values obtained through distributing questionnaires were declared valid and suitable for use. The results of the snake and snake and ladder game model from the experts are presented in table 1 and examples of development results are presented in figure 2.

Table 1. Results of the snake and ladder playing model from experts

<table>
<thead>
<tr>
<th>Design Validation</th>
<th>Teacher</th>
<th>Expert Growth &amp; Development</th>
<th>Expert Physical</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>46%</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Teacher</td>
<td>65%</td>
<td>70%</td>
<td>70%</td>
</tr>
<tr>
<td>Trial Use</td>
<td>86%</td>
<td>85%</td>
<td>85%</td>
</tr>
</tbody>
</table>
Figure 2. Example of the results of developing the snake and ladder game model

Image Description: Size 2 meters wide and 2.5 meters long

The conclusion that can be drawn from this research and development is that the snake and ladder game model that has been developed can be a game model for young children to improve the gross motor and fine motor physical skills of young children. The resulting model has several variations using several types of movement. This game model is packaged more attractively so that children can be interested and happy when doing it. This is so that it can provide stimulants to aspects of children's development, namely physical motor skills through coordinated activities (Fauziddin, 2018). Increase children's movement experience through the snake and ladder game model.

DISCUSSION

This development research was inspired by research conducted by previous researchers who modified games for elementary school students. The results of this study showed positive results on children's physical motor skills with quantitative data of more than 70%. Other research conducted by (Widodo & Lumintuarso, 2017) involved experts in the field of child
There are many varieties of snake and ladder games and are made for various purposes and situations, developed from traditional sports and can be used for learning aimed at improving motor skills. Other research was conducted by (Saleh et al., 2017) who used traditional sports as a model used to improve motor skills and development in children. Research by (Hidayanti, 2013) obtained positive results when using clog games to improve motor skills in children. Furthermore, research by (Ramdani & Azizah, 2019) states that gross motor physical abilities can also be improved with outbound game models. Another game activity that can improve physical gross motor skills is the relay game for young children (Tangse & Dimyati, 2021).

There are so many game models that can be used during learning with the aim of improving physical motor skills. Game models can also be developed in the form of circuits which include elements of gross motor development aspects (Riswandi, 2021). The development of game models for early childhood has been widely carried out and can be a reference for educators. Another game model that can strengthen the results of this research is developing a modified basketball game that is successful in improving gross motor skills in children (Reswari, 2021). Similar research uses the game of basketball which has been proven to be effective for young children (Nugroho et al., 2021).

Increasing gross motor and fine motor physical abilities in early childhood is an important thing to do because this is a fundamental thing that will influence children's physical motor abilities (Marwan, 2022). The results of this research have a positive impact on children's gross motor physical abilities. Another game modification that has been proven to be effective in improving physical gross motor skills is the game of imitating animal movements (Nuridayu et al., 2020). Traditional game models have also proven effective for improving gross motor skills in children, namely
jumping rope. If the jump rope game is played regularly in early childhood, it will have a positive impact on motor development (Mu'mala & Nadlifah, 2019).

Another traditional game that can also improve gross motor skills is the traditional game of clogs, from the results of this research it is said that there are supporting factors for the success of the game provided, namely planning by the teacher, motivation for children to play, and supporting facilities (Nurkholishoh & Da'warul, 2022). Providing basic movement modifications in the form of games does have an effect on children's motor development if they are adapted to the child's characteristics and needs (Mashuri et al., 2022).

Children's physical and psychological functions begin to mature and respond well to all the stimulation around their lives. The potential that children have will die, and will not even appear again if this period is ignored and not utilized as well as possible by ignoring the opportunity for space for children to develop, at the right time. Prior research on resilience has explored the relationship between resilience and work environment, job stress, job satisfaction, as well as classroom instruction (Kim & Moon, 2016; Park & Lee, 2016), further Smith (2000) studied teachers' stress and resilience during this period and found that when educational institutions provided appropriate emotional support, teachers were able to maintain happiness in their work.

CONCLUSION

The snake and ladder game model that researchers have developed can be used by children and can improve gross motor and fine motor physical abilities in early childhood. This has gone through a process of small scale trials and large scale trials, this snake and ladder game model has also received an assessment from experts and was declared suitable for use in early childhood. The physical components achieved are balance and coordination.

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