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Improving Gross Motor Skills in 4–5-Year-Old Children Using the Traditional Game of Engklek

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Abstract
Gross motor development is an important part of early childhood development because it is related to children's ability to use large muscle groups for walking, running, jumping, maintaining balance, and coordinating body movements. At the age of 4–5 years, motor stimulation needs to be provided through activities that match children's characteristics, including enjoyable play activities. This study aimed to describe the use of the traditional engklek game in stimulating gross motor skills among children aged 4–5 years in Group A3 at TK Harapan Kelayu. The study employed a qualitative descriptive approach involving 19 children and the classroom teacher as an informant. Data were collected through observation, interviews, and documentation. Data were analyzed through data reduction, data presentation, and conclusion drawing, supported by source triangulation. The findings show that before repeated activities were implemented, several children had difficulty jumping on one foot, maintaining balance when landing, coordinating eye and foot movements, following the game pattern, and consistently following the rules. After engklek activities were conducted through demonstration, repeated practice, encouragement, and teacher guidance, the children demonstrated better performance in jumping, balance, coordination, agility, leg strength, confidence, and independence. The game also provided opportunities for children to practice taking turns, following rules, and interacting with peers. Therefore, the traditional engklek game can be used as a simple, enjoyable, and contextual learning activity to stimulate gross motor development in children aged 4–5 years.

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1. INTRODUCTION

Early childhood education is a stage of education that provides the foundation for various aspects of a child's development. During this period, children learn through direct experience, interaction with their environment, and play. Therefore, early childhood education requires more than just verbal explanations; it also requires providing opportunities for children to move, experiment, observe, imitate, and repeat experiences according to their abilities (Sumantri, 2005).

Physical-motor development is one aspect that requires planned stimulation. Gross motor skills relate to the use of the body's large muscles and basic movement skills. Children need opportunities to perform various movements such as walking, running, jumping, moving around, maintaining balance, and coordinating limb movements. A recent

literature review on physical activity in early childhood shows that both structured and free-form physical activities can support balance, strength, agility, and body coordination. Physical play played in groups can also provide social and emotional experiences for children (Sumantri, 2005; Purwanti, 2025).

Gross motor stimulation should be provided through activities appropriate to the child's world, namely play. Through play, children can perform repetitive movements without feeling like they are undergoing physical exercise. Play activities also allow teachers to adjust the level of difficulty based on each child's abilities. Thus, motor activities are not only directed at the result, but also at the process of children trying, making mistakes, refining movements, and gaining self-confidence (Purwanti, 2025; Sumantri, 2005).

One form of play that can be used is traditional games. Traditional games have pedagogical value because they involve body movement, simple rules, social interaction, and the use of the surrounding environment. Research on traditional games generally shows that physical play based on local wisdom can foster coordination, balance, and the ability to follow rules, while also introducing children to the values of cooperation and culture (Darmawati et al., 2022; Indriyani et al., 2021; Rozana and Bantali, 2020).

Engklek is a traditional game whose main activity involves jumping in a specific pattern on one or two feet according to the rules of the game. From a motor perspective, these movements require the ability to maintain balance, control body position, regulate leg strength, and coordinate gaze with foot movements. Research shows that playing engklek is associated with physical growth, body balance, flexibility, speed, agility, eye-hand-foot coordination, and the ability to jump on one foot. Research also shows that engklek benefits gross motor skills and provides children with opportunities to learn discipline, responsibility, and cooperation.

Research findings show that hopscotch can be used as an activity to improve gross motor skills through a qualitative approach using observation, interviews, and documentation. The study also shows that the design and implementation of hopscotch learning can support the gross motor development of early childhood. The study emphasizes the importance of engaging game settings, easy-to-understand rules, teacher guidance, and opportunities for children to play together. Meanwhile, the study shows that hopscotch activities can be developed to gradually train balance and agility through directed and repetitive movement experiences.

Although there is considerable research on hopscotch, children's developmental outcomes still need to be assessed within the school context and the characteristics of the group being studied. Initial observations in Group A3 at Harapan Kelayu Kindergarten, consisting of 19 children aged 4–5, showed that gross motor skills were not yet fully developed. Some children still had difficulty jumping on one foot, maintaining balance upon landing, and following game patterns. Some children also still needed teacher guidance and were not yet consistent in following game rules.

These issues indicate that children need activities that provide opportunities for direct movement, are gradual, and can be repeated. Engklek was chosen because its gameplay is simple, can be created with chalk in the schoolyard, does not require expensive equipment, and allows children to practice taking turns. The game can also be modified to suit the child's abilities, including the size of the box, the number of steps, the distance of the jumps, and the rules.

Based on these conditions, this study aims to describe in more depth how the traditional game of engklek is used to stimulate gross motor skills in children aged 4–5 years old, group A3, at Harapan Kelayu Kindergarten. The focus of the study is not only

on jumping ability, but also on balance, eye-foot coordination, agility, leg strength, courage, independence, and the ability to follow game rules.

2. METHOD

This study employed a qualitative method with a descriptive approach. This approach was used because the study sought to describe the process of hopscotch playing and the changes in children's abilities seen in natural learning situations.

The research was conducted at Harapan Kelayu Kindergarten in group A3. The subjects consisted of 19 children aged 4–5 years. Class teachers served as informants to obtain additional information about the children's abilities before and after activities and games in the classroom.

Data collection was conducted using three techniques. First, observation which directly observe the children's abilities while playing hopscotch. Aspects observed included the ability to jump on one leg, balance, following game patterns, eye-foot coordination, agility, leg strength, courage, and independence. Second, interviews with teachers were conducted to obtain information about the children's condition and their experiences during the activity. Third, documentation was collected in the form of photos of the activity, teacher notes, and documentation of the learning process.

The game is implemented in stages. The teacher first introduces the game and demonstrates a simple hopscotch pattern. The teacher then demonstrates how to stand, place your feet, jump, maintain balance, and move from one square to the next. Children are allowed to play in turns. Children who are still unsure are given motivation and support gradually. The game pattern and rules are adapted to the child's abilities so that the activity does not become a burden.

Data were analyzed through data reduction, data presentation, and conclusion drawing. In the reduction stage, researchers selected information related to gross motor development. In the presentation stage, observation and interview findings were compiled into a description that showed the initial conditions, activity processes, and visible changes. Next, conclusions were drawn based on the emerging patterns of findings. Data validity was strengthened through source triangulation by comparing observation results with information from teachers.

3. RESULTS AND DISCUSSION

Research result

1. Background of Harapan Kelayu Kindergarten
   Harapan Kelayu Kindergarten is a private kindergarten school located in the Kelayu Selatan sub-district, Selong district. East Lombok, West Nusa Tenggara. Harapan Kelayu Kindergarten was established on January 1, 1970, under the auspices of the Ministry of Education and Culture. The current principal of Harapan Kelayu Kindergarten is Hilyati, and the responsible operator is Multi Sabriyani.
   Harapan Kelayu Kindergarten is one of the kindergarten-level schools in East Lombok Regency that offers Kindergarten Education. A quality school with B accreditation and ISO 9001:2008 certification. The presence of Harapan Kelayu Kindergarten is expected to contribute to educating the nation's children in Selong District, East Lombok Regency.
2. Vision and mission
   Vision: To form a generation that is faithful, pious, and has noble morals; is healthy, intelligent, creative, independent, and collaborative.
   Mission:

1. Prepare a learning environment that can foster faith and devotion to God and noble character.
2. Preparing a learning environment that fosters physically and mentally healthy behavior
3. Creating a learning environment that shapes children to be intelligent, creative, and independent.
4. Preparing a learning environment that can foster a sense of togetherness and collaboration.

3. Educator and Education Personnel Data
Harapan Kelayu Kindergarten has a team of educators and staff who are crucial in creating a safe, comfortable, and developmentally appropriate learning environment for young children. Currently, the school is supported by four class teachers.1 accompanying teacher, 1 principal, 1 school operator/administrative staff, and 1 office cleanliness officer.
The data on educators and educational staff at Harapan Kelayu Kindergarten can be seen in the table below:

No	Number	Education/ Major	Department
1	Hilyati, S.Pd	S1/ BK	Headmaster
2	Baiq Endayani, S.Pd.I	S1/PAI	Classroom teacher
3	Linda Indrastuti, S.Pd	S1/ PG PAUD	Class Teacher/ Treasurer
4	Ema Supiani	S1/ PG PAUD	Classroom teacher
5	Tohriatul Ummi, S.Pd.	S1/ PG PAUD	Classroom teacher
6	Nurhafiza, S.Pd.	S1/PAI	Classroom teacher
7	Multi Sabriani, S.Pd	S1/ PGSD	Operator
8	Apipatu Zahro	Junior High School	Clean Energy

Secondary Data: processed

4. Student Data
Harapan Kelayu Kindergarten provides early childhood education for children aged 4–6. This school year, there are 69 students enrolled, comprising 49 in Kindergarten A

and 20 in Kindergarten B. The children come from diverse socioeconomic, educational, and cultural backgrounds, reflecting the character of the South Kelayu community.
The following is the student data for Harapan Kelayu Kindergarten for the 2026/2027 academic year.

No	Classroom	Number of Students	L	P
1	A1	14	6	8
2	A2	16	9	7
3	A3	19	8	11
4	B	20	8	12
Amount		**69**	**31**	**38**

Secondary Data: processed

5. Initial Condition of Children Before Implementing the Game
   Initial observations indicate that the gross motor skills of children in group A3 vary. Some children are already able to jump quite well, but others still require stimulation and guidance. This difference is particularly evident when children must use one leg, maintain body position, and land on a designated box.
   Some children still use both feet when they should be jumping on one. Some lose their balance after landing and have to switch feet. Others appear hesitant before jumping, waiting for the teacher's example or assistance. This demonstrates that motor skills are not solely related to leg strength, but also to coordination, body control, courage, and understanding of the rules.
   In the early stages, eye-foot coordination is also not optimal. Children need to observe the game pattern while determining the next foot position. When a child's attention isn't focused on the pattern, movements become slower or imprecise. Furthermore, some children are unable to consistently follow the game rules, so teachers need to remind them and provide further examples.
6. The Process of Implementing the Traditional Engklek Game
   The activity begins with the teacher drawing a hopscotch pattern using chalk in the schoolyard. The pattern is kept simple so that it can be easily understood by children aged 4–5. Before the children play, the teacher provides a demonstration. The children are encouraged to observe foot position, jumping technique, balance, and how to move from one square to another.
   After the demonstration, the children take turns playing. This rotational pattern allows children to experiment without having to compete for space. Children can also observe their peers and learn examples of movement from their social environment. If a child experiences difficulty, the teacher provides gradual guidance, such as slowing down the movement, repeating the demonstration, or helping the child maintain body position.
   Teachers don't force children to perform movements they haven't yet mastered. This approach is important because some children show hesitation at the beginning of an activity. Motivation is provided to encourage children to try. Repeating activities allows children to gradually build movement experience.
7. Changes in Gross Motor Skills After Activities
   After repeated play, improvements were observed in several aspects. These findings are not expressed as percentages because the available research data consists of qualitative observations. The observed changes can be summarized as follows:

Observed Aspects	Initial Conditions	Visible Developments

Jumping on one leg	Some children still use two feet or are hesitant to jump.	Children begin to become more daring and more capable of jumping on one leg.
Balance	Some children lose their balance when landing or changing feet.	Body balance starts to improve when moving from one box to the next.
Eye and foot coordination	Children still need guidance to adjust their gaze to the position of their feet.	Eye and foot movements appear more coordinated when following a pattern.
Agility	Some children's movements are still slow and hesitant.	Movements become smoother, and children are more confident in moving from one box to the next.
Leg strength	The ability to jump is not evenly distributed.	Children demonstrate the ability to perform jumps more confidently.
Courage	Some children are afraid or hesitant to try.	Children are more confident in trying and repeating movements.
Follow the rules	Children still often need reminders.	Children begin to understand

		and follow the rules of the game better.
Social interaction	Children still need to be guided in taking turns.	Children gain experience waiting their turn, playing together, and participating in group activities.

Discussion

Research findings indicate that hopscotch can be understood as a learning activity that combines movement, rules, repetition, and social interaction. Jumping on one leg requires children to control their body position. When they land, their bodies must quickly adjust to avoid losing balance. Simultaneously, children need to observe the game's pattern and determine their next move. Thus, a single sequence of play involves several motor components simultaneously.

Balance development is a key finding. Children who initially shifted their feet easily or lost their balance began to demonstrate improved abilities after repeated play. This can be explained by the nature of hopscotch, which places balance as part of the movement demands. Research by Noviarti and Ismet (2021) identified balance, flexibility, speed, agility, coordination, and jumping ability as aspects that can be stimulated through hopscotch. Research findings at Harapan Kelayu Kindergarten show a pattern consistent with this study.

Eye-foot coordination also plays a crucial role. Children need more than just the leg strength to jump; they must know where to place their feet. When children observe the square pattern, determine the direction of movement, and then place their feet accordingly, vision and body movement are integrated. Indriyani et al. (2021) also identified visual-motor coordination as a relevant aspect of hopscotch.

Agility develops through children's need to move quickly but remain controlled. Children need to shift their body position from one square to another without straying from the pattern. In the context of early childhood learning, these movements are more easily understood when packaged in a game. A study by Purwanti (2025) shows that physical activities involving large movements such as running and jumping contribute to balance, strength, agility, and coordination. Therefore, hopscotch can be considered a simple and contextual form of physical activity.

The aspect of courage was also evident in this study. Some children were initially hesitant to jump, but then gained courage after the teacher provided an example and allowed them to try. This change demonstrates the importance of the teacher's role as a mentor, not just an instructor. Children need a safe environment to make mistakes and try again. In Sriyanti and Zanki's (2023) study, an engaging game setting, easy-to-understand rules, teacher direction, and opportunities to play together are essential components of implementing hopscotch as gross motor stimulation.

Playing hopscotch also provides social experiences. Children learn that games have rules and take turns. They need to wait while their friends play, observe their movements, and try again when it's their turn. Research has found that playing hopscotch can also provide a space for children to learn discipline, responsibility, and cooperation. Thus, the benefits of play extend beyond the physical aspects.

The results of this study align with research that used a qualitative approach through interviews, observation, and documentation to examine the role of hopscotch in improving children's gross motor skills. The similarities in the approaches and data collection techniques demonstrate that direct observation of children's activities can provide a rich picture of motor development. The research also shows that the design and implementation of hopscotch learning can support gross motor development through directed activities.

Previous research using quantitative designs also provides supporting evidence. Nopilayanti, Oka Negara, and Made Suara reported an increase in gross motor skills after implementing hopscotch games in group A at Raisma Putra Kindergarten, Denpasar. Novianti, Oka Negara, and Made Suara also reported an increase after the demonstration method was implemented through hopscotch games in group B2 at Widya Santhi Kindergarten. Because the design of these studies differs from this study, the increase figures are not used as research results at Harapan Kelayu Kindergarten, but can serve as comparative evidence that hopscotch games have been studied using various approaches.

Safety and difficulty adjustments are crucial. The playing surface should be flat and non-slip. The size of the box should be appropriate for the child's abilities. Teachers should also ensure that the jump distance is not too difficult. If a child is not yet able to jump a certain distance on one leg, teachers can start with simpler patterns. Essentially, activities should be challenging but still within the child's abilities.

From a learning perspective, hopscotch can be developed into a more planned activity. Teachers can determine motor skills objectives before playing, select indicators to observe, conduct demonstrations, provide opportunities for practice, and then record any visible changes. In this way, traditional games become more than just a pastime, but also part of a learning process with clear developmental goals.

Engklek also holds cultural value. Amid the increasing use of digital devices and sedentary lifestyles, traditional games can be an alternative way to provide simple and interactive physical activity. However, preserving traditional games should not be done solely for their cultural value, but also by considering their suitability for children's developmental needs.

Overall, the research at Harapan Kelayu Kindergarten showed that the use of hopscotch provided meaningful movement experiences for children in group A3. These findings corroborate previous research but also highlight the importance of local context, child characteristics, teacher support, repetition of activities, and environmental safety. Because this research is qualitative and descriptive, the findings primarily describe observed processes and changes, rather than statistically demonstrating the magnitude of the effect.

5. CONCLUSION

The traditional game of hopscotch can be used as an alternative learning activity to stimulate the gross motor development of children aged 4-5 years in group A3 at Harapan Kelayu Kindergarten. This activity provides an opportunity for children to perform jumping movements using one leg, maintain balance, coordinate eyes and feet, move more agilely, and use leg strength in a directed manner. Based on observations, several children who at the beginning of the activity, were still hesitant, easily lost their balance, and needed

direction showed better development after the activity was repeated with demonstrations, motivation, and teacher guidance.

The benefits of play are also evident in non-motor skills. Children learn to wait their turn, follow rules, try again when they encounter difficulties, interact with friends, and build courage. Thus, hopscotch can be viewed as a play activity that integrates physical stimulation, social experiences, and rule learning.

However, the conclusions of this study must be placed in accordance with the research design. Because the study used a descriptive qualitative approach and the available data consisted of observations, interviews, and documentation, the results describe the development observed in the context of the A3 group at Harapan Kelayu Kindergarten and are not intended as statistical measures for all children aged 4–5 years.

6. SUGGESTION

1. For teachers, hopscotch games can be incorporated into planned motor learning activities with clear objectives and indicators. Teachers should provide a demonstration first, then gradually give children the opportunity to try.
2. The game pattern needs to be modified to suit the child's abilities. The size of the squares, the number of squares, the jumping distance, and the rules can be simplified for children who are still having difficulty.
3. Teachers need to provide positive reinforcement and avoid coercion. Children who are still afraid or unable to jump can be given the opportunity to observe, try with assistance, and then try independently.
4. Schools need to provide a safe play environment, particularly a flat, non-slippery, and sufficiently spacious playing surface. Teacher supervision is essential during activities.
5. Traditional games can be developed as part of a school's cultural preservation program and as a means of stimulating child development. This way, cultural and pedagogical values can go hand in hand.
6. Further researchers can develop research with a larger number of subjects, a longer observation period, a more structured development instrument, or a quantitative research design/PTK if they want to measure changes more measurably.

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