



Improving Children's Gross Motor Skills Through Traditional Games in Group B of Ululjadi Kalora Kindergarten

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ABSTRACT

Gross motor development is an important aspect in early childhood growth because it plays a role in training balance, coordination, agility, and muscle strength that supports daily activities, so that targeted stimulation through fun play activities is needed. One relevant game is hopscotch, which requires children to jump, maintain balance, and coordinate body movements so that it can stimulate gross motor skills optimally. This study uses the Classroom Action Research (CAR) design model of Kemmis and McTaggart with the stages of planning, implementation, observation, and reflection, and combines qualitative analysis through reduction, presentation, and drawing conclusions, and quantitative analysis by calculating the percentage of children's development in the categories of Not Yet Developing (BB), Starting to Develop (MB), Developing According to Expectations (BSH), and Developing Very Well (BSB). The results of the study showed a significant increase in children's gross motor skills from pre-cycle to cycle II in the aspects of balance, coordination, agility, and muscle strength, so it can be concluded that hopscotch games are effective as an active, fun, and contextual learning strategy in supporting the optimal development of early childhood gross motor skills.

INTRODUCTION

Gross motor development is an important aspect in early childhood growth because it plays a major role in improving balance, coordination and muscle strength (Yuliani et al, 2025). Essentially, gross motor development encompasses basic movement skills involving the body's large muscles, such as running, jumping, throwing, or kicking. These skills not only support daily physical activities but also support other aspects of development, such as cognitive, social, and emotional development. Children who have optimal gross motor skill development are typically more active, confident, and able to participate in various physical and social activities that support their health and growth. Therefore, appropriate stimulation of gross motor skills from an early age is a crucial and urgent need in a child's education. Early childhood is considered a crucial initial stage in the overall process of human growth and development. This period is marked by various important phases that lay the foundation for a child's physical, cognitive, social, and emotional development, which continues into subsequent growth periods (Santrock, 2021).

One of the most effective ways to provide this stimulation is through play. Play naturally forms a central part of early childhood life, often spending a significant portion of their time there. This activity serves not only as entertainment but also as an essential

learning tool to support child development. Through play, children can develop physical motor skills, social-emotional skills, cognitive skills, language skills, moral skills, and even spiritual skills (Zalukhu et al, 2023). This view is in line with the opinion of the American Academy of Pediatrics, which emphasizes that play has a central role in stimulating creativity, imagination, physical development such as agility and coordination, and executive functions such as emotional control and problem-solving abilities (Yogman et al., 2018). In addition, research by Wulandari et al. (2024) shows that play-based learning has been proven to increase creativity, critical thinking skills, and social-emotional and motor skills in early childhood. This research is supported by Sitorus et al. (2025). Thus, play plays a vital role in the early childhood education system because it facilitates learning that is appropriate to the child's developmental characteristics while providing a fun learning experience.

Directed play activities can stimulate optimal brain development, form social skills through interactions with peers, and at the same time instill moral values that will be useful throughout their lives (Schlesinger et al., 2020). However, the reality on the ground shows that not all young children have optimal gross motor development. Several contributing factors include limited play facilities, a lack of varied, physically stimulating activities, and learning patterns that are more academically oriented (Yuliani et al, 2024). This situation indicates the need for creative and contextual learning strategies to stimulate children's gross motor development through enjoyable activities, one of which is active, exploration-based play. This situation deprives children of the opportunity to hone their gross motor skills to their full potential.

However, underdeveloped gross motor skills can lead to a child's reduced ability to participate in learning activities that require concentration, coordination, and physical endurance. Therefore, more creative, contextual, and enjoyable learning strategies are needed to optimally stimulate children's gross motor development. Outdoor-based learning designs (outbound kids) have also been proven to be effective in increasing physical activity and gross motor stimulation in children, as demonstrated in the community service program conducted with Kelompok Bermain and RA Miftahussudur, where outdoor activities provided a more varied and meaningful space for physical exploration in early childhood (Nurul Novitasari, Chilyatul Azkiyya, Khoirotul Ummah, Fita Hidayatul Habibah, 2024).

One strategy that can be implemented is through traditional games. Traditional games have several advantages, including being active, fun, close to children's daily lives, and embodying local cultural values. Among the many types of traditional games, hopscotch is one that can be used to stimulate gross motor skills. Hopscotch requires children to jump, maintain balance, and coordinate hand and foot movements. This activity trains aspects of body balance, agility, and muscle strength, all of which are included in gross motor skills. Previous research supports the effectiveness of traditional games in developing gross motor skills Nada et al. (2024) found that developing or modifying the hopscotch game was able to significantly improve the locomotor skills of early childhood, particularly in terms of balance and body coordination. Similar findings were also expressed by Sitepu et al., (2025) which confirms that traditional outdoor learning-based games, including hopscotch, are effective in optimizing children's gross motor development in the digital age. This suggests that

hopscotch can be used as a relevant learning strategy to stimulate gross motor development in early childhood.

However, previous research still has limitations. Most studies emphasize the effectiveness of traditional games in general, without delving deeply into the implementation of engklek in early childhood education contexts that face limited play resources and media. Furthermore, few studies have specifically examined engklek as a learning strategy that can be integrated into early childhood education curricula, taking into account real-world school conditions. This creates a research gap and opens up opportunities for further study on the application of engklek as a means of stimulating children's gross motor skills.

Initial observations at Ulujadi Kalora Kindergarten indicated similar issues. In group B, many children still lacked optimal gross motor development. This was evident in limitations in balance, agility, jumping ability, coordination while walking, and leg strength. This condition was partly due to the limited availability of play media capable of maximizing children's physical activity. However, appropriate gross motor stimulation through active play is essential to support children's physical and social-emotional growth. This fact further emphasizes the need to seek creative and enjoyable learning alternatives, one of which is through the implementation of the traditional game of engklek (Nada et al., 2024; Sitepu et al., 2025).

Furthermore, this study contributes to the growing body of literature on the effectiveness of traditional games, particularly hopscotch, in the context of early childhood education. By utilizing hopscotch as a learning strategy, teachers are expected to create a fun learning environment while simultaneously providing targeted gross motor development. Therefore, this study aims to identify and demonstrate the influence of the traditional hopscotch game on the gross motor development of early childhood, specifically in Group B of Ulujadi Kalora Kindergarten.

METHOD

This research approach uses a Classroom Action Research (CAR) model with mixed methods. The CAR model applied refers to the concept of Stephen Kemmis and McTaggart, which includes four stages: planning, action, observation, and reflection, which occur continuously (Sunny et al, 2023). The mixed methods approach was chosen to obtain more comprehensive research results because it combines qualitative and quantitative data in one study, resulting in stronger and more holistic inferences Oranga et al., (2025).

The subjects of the study were 16 children in group B of Ulujadi Kalora Kindergarten, West Marawola District, Sigi Regency, in the 2024/2025 academic year (8 boys and 8 girls), with the class teacher and some children as informants. Data were collected through observation to assess gross motor skills, interviews with teachers and children to explore learning experiences and obstacles, and documentation in the form of attendance lists, field notes, and activity photos. Data analysis was carried out descriptively by combining a qualitative approach through reduction, presentation, and drawing conclusions and a quantitative approach by calculating the percentage of children's gross motor development in each category according to Permendikbud No. 137 of 2014. Data validity was strengthened

by triangulation techniques, namely comparing the results of observations, interviews, and documentation to ensure the accuracy of research findings.

RESULTS

The research was conducted in two cycles, each encompassing four systematic action stages. Observations were made throughout each cycle. The research findings indicate that the traditional game of hopscotch has significant educational value, particularly as a means of developing children's gross motor skills. Each action included planning, implementation, observation, and reflection, beginning with pre-action as a basis for improvement in the next cycle.

1.1 Pre Cycle

Observations during the pre-cycle phase revealed that children's gross motor skills were still relatively low, particularly in balance, agility, and leg muscle strength. Children tended to have difficulty jumping steadily and easily lost concentration during physical activities. To address this, researchers implemented the traditional game of hopscotch as a learning tool. Consistent with previous research findings, traditional physical play activities have been shown to support motor skill development in early childhood through both fun and structured activities (Santrock, 2021). The results of observations during the pre-cycle phase are presented in the following table.

Table 1. Pre-Action Recapitulation

Development Category	Body Balance (%)	Agility (%)	Leg Strength (%)	Average (%)
Very Well Developed (BSB)	0	0	0	0
Developing as Expected (BSH)	13	13	13	13
Starting to Grow (MB)	31	56	37	37
Not Yet Developed (BB)	56	31	50	50

The results of pre-action observations showBased on the analysis results, of the 16 children involved in the study, none (0%) reached the BSB category. 13% were included in the BSH category, 41% were in the MB category, while 46% were in the BB category. This indicates that the majority of students are still at a low level in the gross motor aspects developed through traditional games. Based on these pre-action findings, the researcher and colleagues discussed designing actions in the first cycle with a focus on the implementation of the traditional engklek game. The main objective of this action was to examine the role of the engklek game in supporting children's gross motor development. The research activity was planned to last for two weeks, so that a comparison of conditions before and after the implementation of the game could be observed more clearly. In line with this, Putra & Dewi (2022) emphasized that physical activity carried out repeatedly in games has a significant

contribution to muscle strengthening, improving balance, and developing children's natural motor coordination.

1.2 Cycle I

In cycle I, the researcher acted as a teacher presenting the learning material, while colleagues acted as observers. The learning process took place in the classroom. Based on the compiled RKH, this activity is designed to stimulate and improve children's gross motor skills through the implementation of traditional games. Similarly, Baan et al. (2020) explain that playing hopscotch is beneficial for children's physical health because it can train dexterity, agility, speed, balance, and strength. Observations were made of the teacher's and children's activities during the activity to assess the effectiveness of the action. A summary of the pre-action observation results can be seen in the table below.

Table 2. Recapitulation of Cycle I Actions

Development Category	Body Balance (%)	Agility (%)	Leg Strength (%)	Average (%)
Very Well Developed (BSB)	20	13	13	15
Developing as Expected (BSH)	37	43	43	41
Starting to Grow (MB)	37	31	25	31
Not Yet Developed (BB)	6	13	19	13

Observation result The results illustrate positive developments in children's gross motor skills compared to pre-treatment conditions. Based on data obtained from 16 children, it was found that 15% achieved the Very Well Developed category, 41% Developed as Expected, 31% Started to Develop, and 13% were still in the Not Yet Developed category. These findings indicate a positive shift in children's abilities. However, the results achieved still do not meet the expected indicators.

Before proceeding to cycle II, the researcher and colleagues conducted a reflection activity to examine weaknesses that emerged during the implementation of cycle I. This reflection aimed to identify obstacles and formulate corrective measures for the next cycle. The discussion results indicated that several factors contributed to the suboptimal improvement of children's gross motor skills. Therefore, alternative solutions and proposed improvements were developed to be implemented in cycle II to achieve the desired results. learning that takes place more optimally.

In this regard, the researcher and colleagues agreed on the need to make improvements in cycle II. The planned improvements include: (1) modifying and adding variations to traditional games to make them more interesting and appropriate to children's ability levels, (2) improving the quality of teacher instruction and observation during learning activities, (3) utilizing game aids or media to strengthen motor stimulation, and (4) integrating reinforcement of rules and social values into games. These improvement steps are expected to

optimize the learning process in cycle II, thereby contributing significantly to improving children's gross motor skills.

In general, The results of cycle I indicated progress in gross motor skills compared to pre-treatment, although some children still had suboptimal development. This improvement was influenced by the varied play methods that were able to capture children's attention and interest. However, several obstacles were also encountered, such as the use of media that was not entirely appropriate and children's shyness at the beginning of the activity. Therefore, the researchers attempted to encourage children to be more enthusiastic and have the courage to participate in the game so that their gross motor skills could continue to develop. This indicates that playing hopscotch is not only physically beneficial but also has a supportive effect on improving children's social and emotional aspects (Hidayat & Widiastuti, 2022).

1.3 Cycle II

Based on observations The results of the first and second actions in the second cycle showed that children's gross motor skills developed significantly. This achievement is inseparable from various improvements made by teachers in accordance with field findings and established assessment categories. This success is also supported by the implementation of the hopscotch game which requires children to perform various physical activities, such as jumping, practicing the ability to balance the body when jumping using one leg while moving from one box to the next. These movements directly train children's coordination, strength, and agility, thus contributing to the improvement of their gross motor skills (Yuliani et al, 2025).

Table 3. Recapitulation of Cycle II Actions

Development Category	Body Balance (%)	Agility (%)	Leg Strength (%)	Average (%)
Very Well Developed (BSB)	20	13	13	15
Developing as Expected (BSH)	37	43	43	41
Starting to Grow (MB)	37	31	25	31
Not Yet Developed (BB)	6	13	19	13

Observation result in cycle II indicates that children's gross motor skills have progressed compared to the previous cycle. This is inseparable from various improvements made by teachers based on the findings in cycle I. Based on the recapitulation, Based on observations of 16 children, it was found that 15% were already in the Very Well Developed (BSB) category, 41% in the Developing According to Expectations (BSH) category, 31% in the Starting to Develop (MB) category, while 13% were still in the Not Yet Developed (BB) category. This data confirms that there has been progress in gross motor skills, although not all children have reached the optimal category.

After implementing cycle II, the researcher and colleagues conducted a reflection to assess the effectiveness of the improvements made. The reflection results showed positive changes, such as the children no longer feeling afraid when playing hopscotch, being able to maintain balance while jumping, and learning patience through waiting their turn. These conditions indicate significant developments, not only in skills, but also in the learning process. This study found that this activity not only supports children's gross motor development but also makes a positive contribution to their social development, including aspects of discipline, cooperation, and self-confidence. Although a small number of children have not shown optimal development, especially those who are shy, spoiled, and lack curiosity, this does not mean they are unable to participate in the game. In general, this classroom action research can be considered successful, because the implementation of the hopscotch game has been proven to improve children's gross motor skills, both in balance, agility, muscle strength, and courage. (Srikandi, 2020) stated that the implementation of traditional games is expected to contribute in an effort to internalize character values in early childhood.

In addition to contributing to physical development, traditional games are also effective in increasing children's active participation in the learning process (Nissa et al., 2019) and even contribute to the development of cognitive abilities (Desvarosa, 2016). Thus, the traditional game of engklek can be seen as a comprehensive learning medium, as it has a positive impact on children's physical, social, emotional, and cognitive development. However, the results of the reflection also indicate the need for further improvements in learning methods and media utilization, so that the process of gross motor stimulation is more effective. Teachers are advised to continue improving basic teaching skills, optimizing variations of traditional games, and overcoming obstacles that arise during the learning process. Thus, the learning process can be more effective and efficient in accordance with the set objectives.

After the implementation of Cycle II, the researcher and the teacher conducted a reflection. The results of the discussion showed that in Cycle I there were still children in the low category, while in Cycle II all observed aspects had reached the good category, so that the success criteria were met, as expressed by Tanto and Sufyana (2020), the hopscotch game plays a crucial role in stimulating and improving gross motor skills in children.

DISCUSSION

Based on the research results, the implementation of the traditional game of hopscotch has been proven to be effective in stimulating children's gross motor development, especially in aspects of balance, agility, and leg strength. Data shows significant progress from pre-cycle conditions to cycle II, confirming the research hypothesis that traditional culture-based play activities can stimulate children's physical development holistically. This fact supports the findings obtained in the study. Darmawati and Widayarsi (2022) which states that playing hopscotch has a positive impact on balance, strength, and agility through enjoyable physical activity. Similarly, Nurdiyanti et al. (2025) In his experimental research, he also found an increase in the average balance ability of children after two cycles of hopscotch game intervention.

Another study conducted by Oviani et al. (2023) The results showed that children's gross motor skills significantly increased from 42.28 to 52.35 after the hopscotch game intervention, strengthening evidence that this method is effective in stimulating early childhood physical skills. In line with this, Zalukhu et al. (2023) also reported improvements in children's balance, coordination, and jumping ability through hopscotch, thus confirming that traditional games have educational value in developing gross motor skills. Furthermore, research that modified hopscotch with the ATIK (Activity Implementation Technique Analysis) model proved that a systematic approach can strengthen gross motor skills, including coordination and agility, which ultimately can help achieve optimal child development (Anggrayni et al, 2023).

The results of this study are also strengthened by the findings Gulo et al., (2025) which reveals that hopscotch In addition to developing gross motor skills, this activity also encourages cooperation and social interaction among children. Furthermore, a literature review conducted by other researchers, such as Kumara (2024), shows that playing hopscotch contributes to children's balance, dexterity, physical endurance, and socio-emotional development. These findings demonstrate that traditional games are not limited to entertainment but also have educational value and skill development for children (Ismawati et al, 2025).

From a theoretical perspective, this research reinforces Piaget's view that play is an important means for developing children's physical and cognitive abilities, as well as Vygotsky's ideas about the importance of social interaction in facilitating skill development. Thus, the application of hopscotch can be placed within a holistic early childhood education framework that emphasizes a balance between physical, cognitive, social, and emotional aspects.

The novel contribution of this research lies in the systematic implementation of hopscotch games through two cycles of classroom action using simple outdoor media. This approach demonstrates that local culture-based learning methods can be integrated into learning activities without high costs, while still yielding significant results on children's gross motor development. From the application side, this research provides an opportunity for PAUD teachers to make the hopscotch game a routine learning strategy to stimulate gross motor development while preserving traditional games as a national cultural heritage.

However, this study is limited by the fact that it only focused on one aspect of development, namely gross motor skills, and was conducted in a single school with a limited number of subjects. The generalizability of the results still needs further investigation through a broader context with a variety of children's ages and backgrounds. For future research, it is recommended that the engklek game also be tested for its effects on cognitive, socio-emotional, and language development, so that it can produce a comprehensive traditional culture-based learning model and contribute to the development of early childhood education theory.

CONCLUSION

Based on the research results, it can be concluded that playing hopscotch as a traditional game has been proven to improve gross motor skills in early childhood, especially

in the aspects of body coordination, balance, strength, and agility. Significant improvements are seen from the comparison between the pre-cycle and cycle II, thus proving that this game not only provides entertainment, but also suits the needs of children's physical and social development. Scientifically, this research provides an important contribution in the development of traditional game-based learning strategies that can be used as an alternative to stimulate children's gross motor development in early childhood education, while strengthening local cultural values. However, this research has limitations because it was only conducted on a limited scope of subjects and focused on gross motor aspects, so the results cannot be generalized widely and have not examined their relationship with other developmental aspects such as social-emotional or cognitive.

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