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IMPROVING THE GROSS MOTOR SKILLS OF CHILDREN AGED 4–5 YEARS THROUGH JUMP ROPE GAMES AT TK MIFTAHUL ULUM TEGALGIRANG BANGODUA

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Abstrak

Penelitian ini dilatarbelakangi oleh kondisi kemampuan motorik kasar anak usia 4–5 tahun di TK Miftahul Ulum Tegalgirang Bangodua yang masih perlu ditingkatkan. Kemampuan motorik kasar merupakan aspek penting dalam perkembangan anak usia dini karena berperan dalam mendukung kemampuan gerak, keseimbangan, koordinasi tubuh, serta kesiapan anak dalam mengikuti aktivitas pembelajaran. Meskipun berbagai kegiatan fisik telah diterapkan untuk menstimulasi perkembangan motorik anak, pemanfaatan permainan lompat tali sebagai media pembelajaran masih perlu dikaji lebih lanjut. Penelitian ini bertujuan untuk meningkatkan kemampuan motorik kasar anak melalui penerapan permainan lompat tali. Metode yang digunakan adalah Penelitian Tindakan Kelas (PTK) dengan model Stephen Kemmis dan Robin McTaggart yang dilaksanakan dalam dua siklus. Subjek penelitian terdiri dari 10 anak kelompok A. Teknik pengumpulan data dilakukan melalui observasi dan dokumentasi, kemudian dianalisis secara deskriptif kuantitatif dengan persentase. Indikator yang diamati meliputi kemampuan melompat, menjaga keseimbangan tubuh, dan mengoordinasikan gerakan. Kriteria keberhasilan ditetapkan apabila sebagian besar anak mencapai kategori Berkembang Sangat Baik (BSB). Hasil penelitian menunjukkan adanya peningkatan yang signifikan pada setiap siklus. Pada tahap prasiklus, 60% anak berada pada kategori Belum Berkembang (BB). Pada siklus I, 20% anak mencapai kategori Berkembang Sangat Baik (BSB), kemudian meningkat menjadi 80% pada siklus II, sedangkan kategori Belum Berkembang (BB) menurun hingga 0%. Anak juga menunjukkan peningkatan kepercayaan diri selama proses pembelajaran. Kesimpulannya, permainan lompat tali terbukti efektif dalam meningkatkan kemampuan motorik kasar anak usia 4–5 tahun, yang ditunjukkan oleh peningkatan kategori Berkembang Sangat Baik dari 0% menjadi 80%.

Kata Kunci: *Anak Usia Dini, Motorik Kasar, Permainan Lompat Tali*

Abstract

This study was conducted based on the gross motor skill conditions of children aged 4–5 years at TK Miftahul Ulum Tegalgirang Bangodua, which still required improvement. Gross motor skills are an essential aspect of early childhood development as they support movement abilities, balance, body coordination, and children's readiness to participate in learning activities. Although various physical activities have been implemented to stimulate children's motor development, the use of rope skipping game as a learning medium for children aged 4–5 years still needs further investigation. This study aimed to improve children's gross motor skills through the implementation of rope skipping games.

The research employed a Classroom Action Research design using the Stephen Kemmis and Robin McTaggart model, conducted in two cycles involving 10 children in Group A. Data were collected through observation and documentation and analyzed using descriptive quantitative techniques with percentage analysis. The observed indicators included jumping ability, body balance, and movement coordination. The success criterion was achieved when most children reached the "Very Well Developed" category. The results showed a significant improvement across the cycles. In the pre-cycle stage, 60% of children were in the "Not Yet Developed" category. In Cycle I, 20% of children reached the "Very Well Developed" category, increasing to 80% in Cycle II, while the "Not Yet Developed" category decreased to 0%. Children also showed increased confidence during learning activities. In conclusion, rope skipping game was proven effective in improving gross motor skills of children aged 4–5 years, as indicated by the increase in the "Very Well Developed" category from 0% to 80%.

Keywords: *Early Childhood, Gross Motor Skills, Jump Rope Game*

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A. INTRODUCTION

Gross motor skills refer to the ability to utilize the large muscles of the body during physical activities, such as running, walking, maintaining balance, jumping, and coordinating bodily movements. Stimulating the development of these skills is crucial during early childhood, as it significantly impacts physical growth, health conditions, and children's self-confidence when participating in various activities.

Children with optimal gross motor development tend to be more active, capable of performing tasks independently, and more adaptable to their social environment. Aligned with Sujiono's view, gross motor skills can be fostered through continuous movement experiences and play.[1]

Basic motor skills and physical activity have a reciprocal relationship. Children who are given the opportunity to engage in physical activity through regular play tend to experience improvements in basic motor skills, while good motor competence also encourages children to be more physically active.[2] The development of basic motor skills requires structured learning

[1] Yuliani Nurani Sujiono, *Konsep Dasar Pendidikan Anak Usia Dini* (Jakarta: Indeks, 2013), p. 7.

[2] Yu Liu et al., 'The Bidirectional Correlation between Fundamental Motor Skill and Moderate-to-Vigorous Physical Activities: A Systematic Review and Meta-Analysis', *Children*, 10.9 (2023), p. 1504.

opportunities, practice, and play activities from an early age. Therefore, games like jump rope can be an effective form of stimulation for developing children's gross motor skills.[3]

According to Gallahue, motor development in children is a process influenced by the interaction among biological maturation, environment, and movement experiences gained through diverse physical activities. Consequently, children require adequate opportunities to move and play so that their motor skills can develop optimally in accordance with their developmental stages.[4]

Suboptimal gross motor development can restrict children's physical activities, diminish self-confidence, and reduce opportunities to interact with and explore their surroundings. Therefore, appropriate stimulation during early childhood is essential to support holistic development.

However, early childhood education (ECE) centers often prioritize academic skills—such as writing, reading, and arithmetic—over physical activities that foster gross motor skills. This condition restricts children's opportunities to remain actively mobile, causing their gross motor skills to develop suboptimally. Robinson et al. highlighted that low levels of physical activity in early childhood can negatively impact body coordination, balance, and fundamental movement skills.[5] This situation underscores that low gross motor capability is not merely a physical development issue but can also impair children's readiness to participate in learning activities and social interaction within the school environment.

[3] Alexandra Patricia Dobell et al., 'Improving Fundamental Movement Skills during Early Childhood: An Intervention Mapping Approach', *Children*, 10.6 (2023), p. 1004.

[4] David L. Gallahue, John C. Ozmun, and Jacqueline D. Goodway, *Understanding Motor Development: Infants, Children, Adolescents, Adults*, 8th edn (Burlington, MA: Jones & Bartlett Learning, 2019), p. 23.

[5] Leah E. Robinson, David F. Stodden, Lars Barnett, Vítor P. Lopes, Dianne A. Logan, Luis P. Rodrigues, Ennio Cerilli, Stephen M. D'Hondt, and others, 'Motor Competence and Its Effect on Positive Developmental Trajectories of Health', *Sports Medicine*, 45.9 (2015), p. 1275.

Based on preliminary observations conducted in Group A at TK Miftahul Ulum Tegalgirang Bangodua, children aged 4–5 years exhibited gross motor skills that required enhancement. Out of the 10 observed children, 6 (60%) fell into the "Not Yet Developed" (NYD) category. These children struggled to maintain balance when jumping, coordinate body movements, and display confidence during specific physical activities.

Jump rope is a traditional game that can serve as a medium to stimulate early childhood gross motor development. This activity involves repetitive jumping movements, which can train body balance, movement coordination, muscle strength, and confidence in physical actions. Additionally, jump rope games cultivate a more enjoyable learning atmosphere since they are active and tailored to the characteristics of early childhood. Wiyani stated that traditional games are viable media for stimulating children's motor development because they directly involve physical activity through play.[6]

Numerous prior studies have demonstrated that jump rope games exert a positive influence on early childhood gross motor development. Fauziah et al. revealed that jump rope activities significantly improve children's movement coordination and balance.[7]

Similarly, a study by Widianingsih et al. indicated that jump rope games enhance children's gross motor skills through fun and active play.[8] Furthermore, the repetitive actions in this game allow children to refine their balance, agility, and courage when performing specific movements. This

[6] Novan Ardy Wiyani, *Dasar-Dasar Pendidikan Anak Usia Dini* (Yogyakarta: Ar-Ruzz Media, 2020), p. 92.

[7] Nurul Sinta Fauziah, Taopik Rahman, and Heri Yusuf Muslihin, 'Meningkatkan Motorik Kasar Anak Usia Dini Melalui Permainan Tradisional Lompat Tali Karet', *CERIA (Cerdas Energik Responsif Inovatif Adaptif)*, 4.5 (2021), p. 516.

[8] Yuli Tri Andini, M. Anas Syamsudin, and Fita Ulansari, 'Pengaruh Permainan Lompat Tali terhadap Perkembangan Motorik Kasar Anak Usia Dini', *JP2KG AUD: Jurnal Pendidikan, Pengasuhan, Kesehatan dan Gizi Anak Usia Dini*, 3.2 (2022), p. 104.

indirectly fosters more meaningful learning.

A meta-analysis by Logan et al. demonstrated that motor skill interventions positively affect the development of fundamental movement skills in early childhood. This finding reinforces the importance of providing structured motor stimulation through play activities that align with developmental characteristics.[9]

Although studies on jump rope games are widespread, most previous research has focused on gross motor enhancement broadly or targeted older age groups. Studies specifically examining gross motor improvement in children aged 4–5 years with a focus on balance, movement coordination, and confidence in physical activities—particularly within rural kindergarten environments—remain relatively limited. Therefore, this study was conducted to address this research gap.

The novelty of this study lies in using jump rope games as an intervention to improve the gross motor skills of children aged 4–5 years by focusing specifically on three aspects: balance, movement coordination, and confidence at TK Miftahul Ulum Tegalgirang Bangodua. Consequently, this study focused on efforts to enhance the gross motor skills of children aged 4–5 years through the implementation of jump rope games at TK Miftahul Ulum Tegalgirang Bangodua.

B. METHOD

This study was conducted using Classroom Action Research (CAR) based on the Kemmis and McTaggart model, which comprises planning, acting, observing, and reflecting stages. This method was selected due to its suitability for improving the learning process directly through the implementation of jump rope games to develop early childhood gross motor skills. Furthermore, the CAR approach allowed the researchers to evaluate and refine instruction in each cycle, maximizing the monitoring of children's skill development.

[9] Samuel W. Logan, Leah E. Robinson, A. E. Wilson, and W. A. Lucas, 'Getting the Fundamentals of Movement: A Meta-Analysis of the Effectiveness of Motor Skill Interventions in Children', *Child: Care, Health and Development*, 38.3 (2012), p. 311.

The study took place at TK Miftahul Ulum Tegalgirang Bangodua during the even semester of the 2025/2026 academic year. The subjects consisted of 10 children in Group A aged 4 to 5 years, comprising 6 boys and 4 girls. The selection of these subjects was driven by initial observation findings showing poor gross motor development, particularly regarding body balance, movement coordination, and confidence in physical activities. During implementation, the researcher acted as the practitioner executing the actions, collaborating with the classroom teacher who served as the observer.

This study was carried out in two cycles, with each cycle consisting of two meetings. In the planning phase, the researcher prepared the lesson modules, jump rope game media, research instruments, and observation indicators for gross motor assessment. In Cycle I, the jump rope game focused on introducing game rules, practicing low-height jumps, and habituating children to maintaining body balance while jumping. The observation results from this cycle served as the basis for reflection to refine the implementation in the subsequent cycle.

In Cycle II, the jump rope activities were developed by gradually increasing movement variations and difficulty levels based on the children's abilities. The teacher provided more intensive guidance to ensure children could perform jumps with improved coordination, balance, and confidence compared to the previous cycle.

The action phase was executed through jump rope game activities adapted to the developmental capabilities of children aged 4–5 years. Following this, the observation phase was conducted to monitor the children's gross motor development during instruction. The reflection phase involved evaluating constraints and successes in each cycle, which then informed enhancements for the next cycle.

Data collection relied on observation and documentation. Observation captured children's gross motor development during the jump rope games, while documentation provided supporting evidence such as activity photos, child progress reports,

and learning archives. The collected data encompassed children's abilities to maintain balance, coordinate body movements, and exhibit confidence during jump rope activities.

The research instrument consisted of an observation sheet to assess gross motor development in children aged 4 to 5 years. The instrument was structured around developmental achievement indicators using four assessment categories: "Not Yet Developed" (NYD), "Starting to Develop" (SD), "Developing as Expected" (DAE), and "Very Well Developed" (VWD).

Table 1. Gross Motor Skill Indicators

No	Assessed Aspect	Observation Indicator
1	Body Balance	The child can maintain body position when jumping without falling.
2	Movement Coordination	The child can coordinate leg and body movements when jumping over the rope.
3	Confidence	The child confidently tries and completes the jump rope activity without hesitation.

Prior to its application, the instrument was validated using expert judgment involving two validators: the thesis advisor and the classroom teacher. Validation covered the alignment of indicators with research objectives, the clarity of observation items, and the measurability of early childhood gross motor development indicators. The validation results indicated that all indicators were viable for data collection after minor revisions based on the validators' feedback.

The study utilized a rubber band rope assembled into a continuous chain as the jump rope medium. The rope spanned approximately 3 meters, adjusted to the jumping capabilities of children aged 4 to 5 years. In addition to the game media, this study utilized observation sheets, mobile phone cameras for activity documentation, and field notes to support data collection.

Data validity was established through technical triangulation by comparing data from observations, documentation, field notes, and

reflective discussions with the collaborating teacher after each cycle. Observations were also repeated across meetings to secure accurate, consistent, and authentic data.

Data analysis employed both descriptive qualitative and descriptive quantitative approaches. Quantitative data derived from the percentage scores of children's gross motor development in each cycle. Qualitative data were gathered from observations of children's behaviors during learning.

The percentage of children's gross motor development was calculated using the following formula:

$$P = (f/N) \times 100\%$$

Where:

P =Achievement percentage;

f = Number of children in a specific category;

N = Total number of children.

Qualitative data were analyzed through data reduction, data display, and conclusion drawing to describe behavioral changes and gross motor progression during the intervention. Before conducting the study, the researcher obtained permission from the principal of TK Miftahul Ulum Tegalgirang Bangodua and consent from the parents or guardians of the pupils. All data collected were used solely for research purposes, and the children's identities were kept confidential to protect participant privacy. Data were analyzed by comparing results across the pre-cycle, first cycle, and second cycle to determine the improvements after implementing the jump rope games. The workflow of the classroom action research implementation is presented in Figure 1.

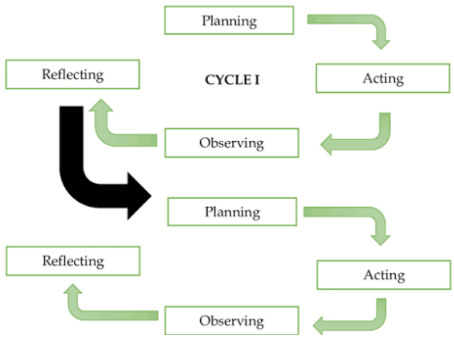


Figure 1. CAR Model of Kemmis and McTaggart Flowchart

As illustrated in Figure 1, the classroom action research followed four cyclical stages: planning, acting, observing, and reflecting. The planning stage involved identifying problems, preparing learning activities,

developing observation instruments, and organizing materials. The planned intervention was then implemented, while children's participation and gross motor performance were systematically observed. The observation results were analyzed during the reflection stage to evaluate the intervention and identify improvements for the next cycle. The reflection from each cycle informed revisions to subsequent planning and implementation, ensuring continuous improvement until the expected learning outcomes were achieved.

C. RESULTS AND DISCUSSION

1. Pre-Cycle Results

The gross motor skills of children aged 4 to 5 years at TK Miftahul Ulum Tegalgirang Bangodua demonstrated improvement following the implementation of jump rope games in learning. This development was visible in children's ability to maintain body balance, coordinate movements, and exhibit confidence during physical activities. Data collection was performed through observations across the pre-cycle, first cycle, and second cycle stages.

In the pre-cycle phase, children's gross motor skills fell into the "low" category. Most children could not execute jumping movements maximally and struggled to regulate their bodily coordination. Additionally, they lacked confidence and hesitated during jumping activities. Pre-cycle observations revealed that out of 10 children, 6 (60%) were in the "Not Yet Developed" (NYD) category, 3 (30%) were in the "Starting to Develop" (SD) category, and only 1 (10%) reached the "Developing as Expected" (DAE) category. These outcomes indicated that children's gross motor skills required stimulation through more engaging, hands-on physical movement activities.

2. Cycle I Results

After jump rope games were implemented in Cycle I, children's gross motor skills began to progress. The children appeared more active and enthusiastic. In the first meeting of Cycle I, the percentage of children in the "Not Yet Developed" category dropped to 40%, while the "Very Well Developed" (VWD) category reached 10%. By the second meeting of Cycle I,

gross motor competence advanced further. The percentage for the "Not Yet Developed" category decreased to 20%, "Starting to Develop" stood at 30%, "Developing as Expected" reached 30%, and the "Very Well Developed" category increased to 20%.

3. Cycle II Results

Gross motor progression reached its optimal level in Cycle II. The children began to jump with better balance, improved body coordination, and heightened confidence during the jump rope games. In the first meeting, the "Very Well Developed" category rose to 50%. Subsequently, in the second meeting of Cycle II, a significant increase occurred: 8 children (80%) achieved the "Very Well Developed" category, 1 child (10%) was in the "Developing as Expected" category, and 1 child (10%) was in the "Starting to Develop" category. Notably, no children remained in the "Not Yet Developed" category (0%).

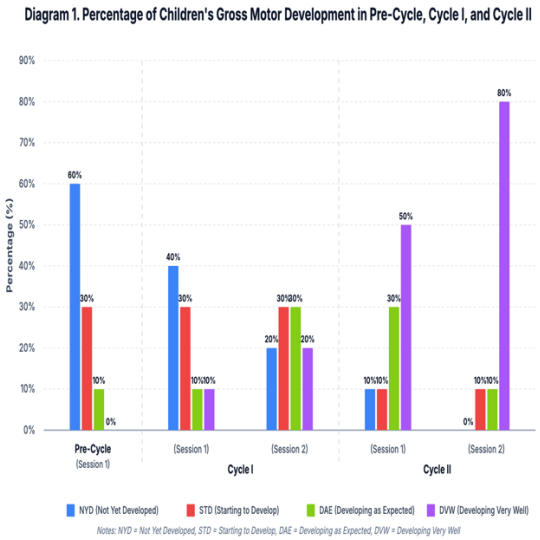
Table 4.1 Recapitulation of Children's Gross Motor Skill Development

Stage	NYD	SD	DAE	VWD
Pre-cycle	60%	30%	10%	0%
Cycle I Meeting 1	40%	40%	10%	10%
Cycle I Meeting 2	20%	30%	30%	20%
Cycle II Meeting 1	0%	20%	30%	50%
Cycle II Meeting 2	0%	10%	10%	80%

Note:
NYD = Not Yet Developed
SD = Starting to Develop
DAE = Developing as Expected
VWD = Very Well Developed)

To provide a clearer overview of the changes in children's gross motor development throughout the intervention, the percentage distribution of children's achievement levels in the pre-cycle, Cycle I, and Cycle II is presented in Diagram 1. The diagram illustrates the progression of children's gross motor skills across four developmental categories—Not Yet Developed (NYD), Starting to Develop (STD), Developing as Expected (DAE), and Developing Very Well (DVW)—showing the effectiveness of the jump rope game intervention implemented through two cycles of classroom action research.

Diagram 1. Percentage of Gross Motor Skill Development in Pre-Cycle, Cycle I, and Cycle I



Based on Diagram 1, the implemented jump rope games gradually advanced children's gross motor skills in each cycle. The decline in the "Not Yet Developed" percentage alongside the growth in the "Very Well Developed" category indicates that play activities involving active movement effectively stimulate early childhood physical-motor development. Repetitive jumping actions helped children train body balance, movement coordination, and muscle strength, optimizing their gross motor progression.

The results of this study are in line with previous findings, which revealed that the traditional game of jumping rope plays a role in developing gross motor skills in early childhood through locomotor movements that involve body coordination, balance, and jumping skills.[10] Widianingsih et al. also reported that jump rope games enhance children's gross motor skills through fun and interactive play.[11]

In addition, a sports game intervention was found to significantly improve children's fundamental motor skills. The structured game program, implemented over approximately twelve weeks, had a positive impact on the development of children's motor skills.[12] This finding is also supported

[10] Yuli Tri Andini, M. Anas Syamsudin, and Fita Ulansari, 'Pengaruh Permainan Lompat Tali terhadap Perkembangan Motorik Kasar Anak Usia Dini', *JP2KG AUD (Jurnal Pendidikan, Pengasuhan, Kesehatan dan Gizi Anak Usia Dini)*, 3.2 (2022), pp. 101, 106.

[11] Sri Widianingsih, Dadan Suryana, and Yeni Solfiah, 'Pembelajaran Daring dalam Mengembangkan Keterampilan Motorik Kasar Anak Usia Dini melalui Permainan Lompat Tali', *CERIA (Cerdas Energik Responsif Inovatif Adaptif)*, 5.4 (2022), p. 379.

[12] Shengchuan Sun and Changzhou Chen, 'The Effect of Sports Game Intervention on Children's Fundamental Motor Skills: A

by Fitria and Chikmah's research which shows that the traditional game of jumping rope has been proven to be able to optimize the gross motor development of children aged 4-5 years, with an increase in motor skills which can be seen from the percentage increasing from 7% in the initial condition to 25% in cycle I and 80% in cycle II. [13] The findings of this study are further supported by literature indicating that active play fosters physical-motor capabilities through enjoyable learning experiences aligned with early childhood developmental traits.[14] Another study published in *Bunayya: Jurnal Pendidikan Anak* also noted that motor stimulation via traditional games positively impacts movement coordination and children's self-confidence.[15]

The application of jump rope games in this study provided learning experiences involving direct physical actions, rendering children more active, brave, and confident. The repetitive jumping movements trained coordination between leg and hand actions while maintaining balance. This shows that traditional games serve not only as entertainment but can also be leveraged as an effective instructional method to develop early childhood gross motor skills.

Based on the results and discussion, implementing jump rope games effectively improved the gross motor skills of children aged 4–5 years at TK Miftahul Ulum Tegalgirang Bangodua. These findings parallel Cucu Sopiah's argument that early childhood motor development requires active

Systematic Review and Meta-Analysis', *Children*, 11.2 (2024), p. 254.

[13] Fadilatul Fitria and Amidanal Chikmah, 'Pengembangan Kemampuan Motorik Kasar Berbasis Permainan Tradisional Lompat Tali pada Usia 4–5 Tahun', *Journal Ashil: Jurnal Pendidikan Anak Usia Dini*, 4.1 (2024), p. 46.

[14] Meylani Eka Putri and Prima Aulia, 'Efektivitas Permainan Lari Estafet Modifikasi untuk Meningkatkan Motorik Kasar pada Anak di Taman Kanak-Kanak', *Bunayya: Jurnal Pendidikan Anak*, 6.1 (2020), p. 24.

[15] Munawarah Daud, 'Melatih Perkembangan Motorik Kasar Anak Usia Dini melalui Permainan Tradisional Gayo "Men Tin"', *Bunayya: Jurnal Pendidikan Anak*, 9.1 (2023), p. 76.

stimulation that brings joy and fits children's developmental stages.[16]

Additionally, Cucu Sopiah and her research team noted in an international journal that children's motor development is influenced by movement experiences, learning environments, and repetitive, consistent play. This indicates that a higher frequency of varied physical activities leads to more optimal motor development.[17] This matches the present study, where jump rope games provided active movement stimulation, leading to gross motor improvements across the instructional cycles. The growth was prominent in balance, body coordination, and physical confidence.

D. CONCLUSION

The findings of this study demonstrate that jump rope games contribute positively to enhancing the gross motor skills of children aged 4–5 years at TK Miftahul Ulum Tegalgirang Bangodua. This improvement was evident in body balance, movement coordination, and physical confidence. A significant increase occurred from the pre-cycle stage to the end of Cycle II, marked by the percentage of children in the "Very Well Developed" (VWD) category rising from 0% to 80%, and the "Not Yet Developed" (NYD) category dropping from 60% to 0%.

Furthermore, learning packaged through active and enjoyable play boosted children's self-confidence and enthusiasm. Consequently, jump rope games not only advanced gross motor skills but also supported active engagement in learning.

Implications from this study suggest that early childhood educators can utilize jump rope games as an effective alternative activity to stimulate gross motor growth, especially regarding balance, coordination, and confidence. Incorporating traditional games also

[16] Panggung Sutapa and Suharjana, 'Improving Gross Motor Skills by Gross Kinesthetic-and Contemporary-Based Physical Activity in Early Childhood', *Jurnal Cakrawala Pendidikan*, 38.3 (2019), p. 545.

[17] Novitasari, N., and others, 'Physical Motor Development of 5–6 Year-Old Children in Javanese and Sundanese Cultures', *Al Hikmah: Indonesian Journal of Early Childhood Islamic Education*, 7.2 (2023), p. 160.

fosters a more engaging and fun learning environment suited to early childhood traits.

Future research is recommended to examine the effectiveness of other traditional games in developing early childhood motor skills or to apply jump rope games across different age groups with larger sample sizes to ensure better generalizability.

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