IHYA ULUM
Early Childhood Education Journal
Fakultas Keguruan dan Ilmu Pendidikan Universitas Islam Makassar
E-ISSN 2962-8504

The Application of the Tingko' Tingko' Traditional Game to Improve the Gross Motor Skills of Young Children

Ina Munawaroh Saepuddin[1*], Riskal Fitri[1], Mulyadi[1]

[1]Universitas Islam Makassar, Makassar, INDONESIA

Abstract

This study aimed to improve the gross motor skills of children aged 5–6 years through the traditional game tingko' tingko', a local Makassar variant of hide-and-seek. Preliminary observations showed that the children still had difficulty following movement rules, changing running direction with agility, and maintaining dynamic balance while moving. Classroom action research based on the Kemmis and McTaggart model was conducted in two cycles, each consisting of planning, acting, observing, and reflecting. The participants were ten children in Group B of a kindergarten in Makassar, South Sulawesi, Indonesia. Data were collected using a structured observation sheet based on the national Standard of Child Development Achievement (STPPA), performance assessment, interviews with the class teacher, and documentation, and were analysed using descriptive quantitative and qualitative techniques. The classical gross motor achievement was 43.13% before the action (Starting to Develop), increased to 60.63% in Cycle I (Developing as Expected), and reached 78.13% in Cycle II (Developing Very Well), exceeding the 75% success criterion. The improvement in Cycle II followed changes in the learning design, namely clearer boundaries for the play area, step-by-step demonstrations of turning movements, more balanced play groups, and encouragement for passive children. The findings suggest that integrating local traditional games into early childhood learning offers an enjoyable, low-cost, and culturally responsive way to stimulate children's gross motor development, although the results are limited to one group of ten children.

Keywords: gross motor skills; early childhood; traditional games; tingko' tingko'; classroom action research.

[*] Corresponding author. *E-mail address*: inalwaris140212131117@gmail.com

Saepuddin, I.M., Fitri, R., Mulyadi, M. (2026). The Application of the Tingko' Tingko' Traditional Game to Improve the Gross Motor Skills of Young Children. *Ihya Ulum: Early Childhood Education Journal. Vol. 4*(1), 865-879. https://doi.org/10.59638/ihyaulum.v4i1.990

Received January 11, 2026; Revised February 25, 2026; Accepted February 26, 2026; Available online March 30, 2026.

INTRODUCTION

Early childhood education lays the foundation for children's holistic development, which includes cognitive, social-emotional, language, moral, and physical-motor aspects (Candra et al., 2023; Karmila, 2024). In Indonesia, early childhood education is defined as an effort to nurture children from birth to six years of age through educational stimulation that supports their physical and mental growth and prepares them for further education (Republic of Indonesia, 2003). During this period, all developmental domains grow rapidly and are highly sensitive to environmental stimulation. Gross motor skills are particularly important because they underlie children's physical capacity to interact with their surroundings. These skills involve the coordination of large muscle groups in locomotor, non-locomotor, and manipulative activities such as walking, running, jumping, balancing, and changing direction (Candra et al., 2023). Well-developed gross motor skills are not only an indicator of physical health; they also support children's confidence, independence, and participation in group activities (Karmila, 2024). Learning environments for young children therefore need to provide systematic and varied physical-motor stimulation.

Motor development in early childhood follows a broad sequence. Gallahue et al. (2012) describe the years between about two and seven as the fundamental movement phase, in which children acquire and refine basic locomotor skills such as running, galloping, and hopping, stability skills such as balancing, turning, and stopping, and manipulative skills such as throwing and catching. Within this phase, children move from an initial stage, in which movements are poorly coordinated, through an emerging stage, to a proficient stage, in which movements become efficient and controlled. Progress through these stages is not determined by age alone; it depends largely on opportunities for practice, encouragement, and instruction. Children who seldom play actively may therefore remain at an immature level of movement even when they are old enough to perform more mature patterns, which makes the role of kindergarten in providing structured movement experiences especially important.

Physical activity is also important for children's health. The World Health Organization (2019) recommends that children aged three to four years spend at least 180 minutes a day in a variety of physical activities, including at least 60 minutes of moderate- to vigorous-intensity activity, and that sedentary screen time be limited to no more than one hour. Although these recommendations concern the whole day, kindergarten is one of the main settings in which young children can be active with peers under adult supervision. Learning activities that require children to run, stop, and change direction therefore contribute both to motor development and to healthy patterns of daily activity.

The daily lives of many children have changed with the spread of digital devices. Screen-based entertainment can reduce the time children spend in active outdoor play, and studies have reported that traditional games such as hide-and-seek are played less often as gadget use increases (Lorenza & Prasetiya, 2024; Muharrahman et al., 2023). In some kindergartens, this tendency is reinforced by learning practices that emphasise academic activities in the classroom, such as completing worksheets and following verbal instructions while seated (Saepuddin, 2026). According to the national standard of child development achievement, children aged 5–6 years are expected to run with agility, turn smoothly, and maintain body

balance while moving (Ministry of Education and Culture, 2014). Preliminary observations in Group B of the participating kindergarten, however, showed that many children had difficulty regulating their balance, changing running direction without falling, and following simple movement rules in group games.

Teachers in the participating kindergarten also reported that some children were reluctant to join outdoor games, preferred to watch from the side, or stopped playing after a short time because they felt tired or were afraid of falling. Such reluctance may become a cycle: children who move less have fewer chances to practise, and children who are less skilled may avoid activities in which their difficulties are visible to peers. Breaking this cycle requires activities that are enjoyable enough to draw children in, that allow different levels of skill to take part, and that give children many repetitions of the target movements without making the practice feel like a drill.

From a developmental perspective, Piaget (1962) argued that young children construct knowledge through direct, active exploration of their environment, and Vygotsky (1978) emphasised social interaction and shared activity as the basis for developing reasoning and self-regulation. Play is therefore not an activity separate from learning but a central means through which children understand the world and their own bodies. When opportunities for active play are reduced in favour of narrow academic targets, children may have fewer chances to practise the movements that build strength, agility, and balance.

Traditional games offer a promising alternative because they combine physical activity, simple rules, and social interaction (Lorenza & Prasetiya, 2024; Yulianto et al., 2025). A systematic review of Indonesian traditional games concluded that they can support both gross and fine motor development in preschool children (Yulianto et al., 2025). One traditional game that has received little attention in early childhood education is tingko' tingko', a variant of hide-and-seek played by children in Makassar communities in South Sulawesi (Saepuddin, 2026). The game begins with *mayang-mayang sipompa*, a hand-based draw used to choose the guard. The guard then counts with eyes closed while facing a wall that serves as the base, and the other players hide and try to reach the base without being caught.

The structure of tingko' tingko' provides varied gross motor stimulation. When children run to find a hiding place or when the guard chases other players, the large muscles of the legs are used for speed and agility. Sudden turns to avoid the guard require children to change direction quickly while keeping control of their bodies, and hiding in a still or crouched position trains balance and postural control. The game also requires children to understand and remember its rules, such as not peeking while counting, taking turns honestly as the guard, and staying within the play area.

Chasing and hiding games belong to what Pellegrini and Smith (1998) called physical activity play, a form of play that is common in the preschool and early school years and is characterised by vigorous movements such as running, chasing, and fleeing. They argued that this kind of play may serve immediate developmental functions, including the training of muscle strength, endurance, and economy of movement. Tingko' tingko' provides such play within a set of rules that children already partly know from their community. Using a familiar local game in kindergarten also connects school learning with children's cultural background, so that children experience their own culture as valuable and the teacher can draw on games that parents and grandparents still remember.

Previous studies have reported that traditional games can improve young children's gross motor skills, including rope jumping (Bendriyanti & Haryono, 2021),

engklek (Baharta et al., 2026), cat-and-mouse games (Larasati & Sit, 2025), and other traditional games developed into learning modules (Karmila, 2024). Studies of hide-and-seek have reported gains in gross motor skills through classroom action research in kindergarten (Ashar & Inrawulan, 2021; Muhajirin & Andriana, 2022), while other work has focused on the moral and social value of the game (Lorenza & Prasetiya, 2024). However, the local Makassar variant tingko' tingko' has not been documented as a structured learning activity with clearly defined gross motor indicators. This study addresses that gap by integrating tingko' tingko' into the daily lesson plans (RPPH) of Group B and by observing four aspects of gross motor performance: compliance with movement rules, agility in changing direction, postural stability, and active physical engagement.

The study aimed to describe how the tingko' tingko' traditional game was applied to improve the gross motor skills of children aged 5–6 years in Group B and to examine changes in their gross motor performance across two cycles of classroom action research. Practically, it is intended to provide early childhood teachers with an example of how a local game can be planned and implemented as outdoor learning, and to support the preservation of local culture through early childhood education.

METHOD

Research Design and Participants

This study used classroom action research based on the spiral model of Kemmis and McTaggart, in which each cycle consists of planning, acting, observing, and reflecting (Kemmis et al., 2014). Two cycles were conducted, and each cycle consisted of two learning sessions. Classroom action research was chosen because the aim was to improve a practical problem in the classroom, namely the children's low gross motor skills, while improving the learning process at the same time.

The participants were all ten children in Group B of a kindergarten in Makassar, South Sulawesi, Indonesia, in the 2025/2026 academic year. The group consisted of six girls and four boys aged 5–6 years. To protect the children's privacy, they are identified by codes A1 to A10 in this article. The researcher acted as the class teacher who carried out the action, while the principal, another class teacher, and an assistant teacher acted as collaborators in the observation and reflection stages to support the objectivity of the data.

Action Procedures

In the planning stage, the researcher prepared daily lesson plans (RPPH) on the theme "I Love Indonesia" with the subtheme "The Traditional Game Tingko' Tingko'". The researcher also prepared the observation sheet, documentation, and interview guide, and arranged a safe play area with a wall as the base and clear outer boundaries. In the acting stage, the game was implemented as outdoor learning. Each session began with an explanation of the rules and a demonstration by the teacher, followed by the *mayang-mayang sipompa* draw to choose the guard. The children then played the game, which required them to run, hide, change direction, and keep their balance.

Each session followed a consistent sequence. In the opening activity, the children gathered in a circle, greeted each other, and prayed together, and the teacher introduced the purpose of the game in simple language. This was followed by a short warm-up consisting of walking, jogging, and stretching movements to prepare the children's muscles and reduce the risk of injury. In the core activity, the

teacher explained and demonstrated the rules, the children took part in the *mayang-mayang sipompa* draw, and several rounds of tingko' tingko' were played so that different children had the chance to become the guard. In the closing activity, the children cooled down with slow movements, drank water, and sat together to talk about what they had done, what had been difficult, and how they had helped their friends.

Safety was considered in every session. The play area was checked for sharp objects, slippery surfaces, and obstacles before the game started, and hiding places that were too narrow or too high were not allowed. At least two adults were present while the children played, so that one could supervise the guard and the base while the other watched the hiding areas. Children who looked tired were allowed to rest and to rejoin the game when they were ready.

In the observing stage, the researcher and the collaborators observed the children directly with the observation sheet. The observation focused on the children's compliance with the rules, coordination when changing running direction, postural stability, and active engagement. In the reflecting stage, the researcher and the collaborators analysed the observation results. If the classical achievement had not reached the success criterion, the learning strategy was revised for the next cycle, for example by explaining the rules more concretely and providing more intensive support.

The observers recorded each child's score for the four aspects at the end of the session, based on the child's typical performance during the game rather than on a single attempt. Field notes were written during and immediately after the session to describe notable events, such as a child who fell while turning, a child who repeatedly left the play area, or a child who encouraged a friend to run to the base. The scores and notes from the last session of each cycle were used to describe the results of that cycle, while the notes from all sessions were used in the reflection.

Instrument

The main instrument was a structured observation sheet. The indicators of gross motor skills for children aged 5–6 years were based on the Standard of Child Development Achievement in Regulation of the Minister of Education and Culture Number 137 of 2014 (Ministry of Education and Culture, 2014). Four aspects were observed, as shown in Table 1.

Table 1. Observation grid for the gross motor skills of children aged 5–6 years.

No.	*Aspect*	*Descriptor*	*Score*
1	Compliance with movement rules	The child plays physical group games while consistently following simple rules (closing the eyes while guarding, counting as agreed, staying inside the play area).	1 / 2 / 3 / 4
2	Agility	The child runs and changes running direction quickly with good coordination and without losing body control (turning suddenly to avoid or chase).	1 / 2 / 3 / 4
3	Postural stability	The child maintains body balance during various dynamic movements (stopping suddenly in a stable way, hiding in a balanced position).	1 / 2 / 3 / 4
4	Active engagement	The child takes part physically and mentally in the game involving large-muscle movements without being forced (enthusiastically running and looking for a hiding place).	1 / 2 / 3 / 4

Each aspect was rated on the four-level scale commonly used in Indonesian kindergartens. A score of 1, Not Yet Developed (*Belum Berkembang*, BB), was given when the child could not yet perform the indicator and needed full guidance from the teacher. A score of 2, Starting to Develop (*Mulai Berkembang*, MB), was given when the child had begun to perform the indicator but still needed reminders or help. A score of 3, Developing as Expected (*Berkembang Sesuai Harapan*, BSH), was given when the child performed the indicator independently and consistently. A score of 4, Developing Very Well (*Berkembang Sangat Baik*, BSB), was given when the child performed the indicator independently and could also help or set an example for peers. Interviews with the class teacher were used to understand the children's initial condition, and photographs of the children's activities were used as documentation.

Data Analysis

Qualitative data from interviews, field notes, and photographs were analysed descriptively to describe changes in the children's behaviour, enthusiasm, physical difficulties, and the atmosphere of the learning process. Quantitative data from the observation sheet were converted into percentages. The classical percentage was calculated as P = (Σ actual score of all children / maximum score) × 100%, where the maximum score is the maximum score per indicator (4) multiplied by the number of indicators (4) and the number of children (10), giving 160. Individual percentages were calculated in the same way with a maximum score of 16. Percentages were interpreted as BB (0–25%), MB (26–50%), BSH (51–75%), and BSB (76–100%).

The individual percentages were used to determine each child's category, the indicator percentages were used to identify which aspects improved most and which needed further attention, and the classical percentage was used to decide whether the success criterion had been reached. The qualitative data were used to explain the quantitative results, for example by identifying why some children remained in the MB category in Cycle I, and to describe the effects of the revisions made in Cycle II.

Success Criterion

The action was considered successful, and the cycles were ended, when the classical gross motor achievement of the children reached at least 75%. A percentage of 75% or more indicates that most children in the group are in the BSH or BSB categories.

RESULTS

Pre-action Condition

Before the action, baseline data were collected through structured observation on Monday, 8 September 2025. Most children still had marked difficulties in following movement rules, changing running direction, and maintaining postural stability while moving quickly. The individual scores are presented in Table 2.

Table 2. Gross motor scores of the children before the action.

Child	*Rule compliance*	*Agility*	*Postural stability*	*Active engagement*	*Total score*	*%*	*Category*
A1	BB (1)	MB (2)	MB (2)	MB (2)	7	43.75	MB
A2	BB (1)	MB (2)	MB (2)	MB (2)	7	43.75	MB
A3	MB (2)	BSH (3)	BSH (3)	BB (1)	9	56.25	BSH
A4	MB (2)	MB (2)	BSH (3)	BSH (3)	10	62.50	BSH
A5	BB (1)	BB (1)	MB (2)	BB (1)	5	31.25	MB
A6	MB (2)	BB (1)	BSH (3)	BB (1)	7	43.75	MB
A7	BB (1)	BB (1)	MB (2)	BB (1)	5	31.25	MB
A8	BB (1)	MB (2)	MB (2)	BB (1)	6	37.50	MB
A9	BB (1)	MB (2)	BSH (3)	MB (2)	8	50.00	MB
A10	BB (1)	BB (1)	MB (2)	BB (1)	5	31.25	MB
Total	13	17	24	15	69	43.13	MB

Note. BB = Not Yet Developed; MB = Starting to Develop; BSH = Developing as Expected; BSB = Developing Very Well. Children are identified by codes. Column totals were recalculated from the individual scores.

On the rule-compliance indicator, seven children (70%) were still in the BB category. On active engagement, six children (60%) were passive or hesitant to move. On agility, four children were in the BB category and five in the MB category. Postural stability was relatively better: four children had reached the BSH category, while the other six were in the MB category. The total score of all children was 69 out of a maximum of 160, giving a classical achievement of 43.13%, which falls in the MB category. This result, which was well below the 75% criterion, formed the basis for the action.

Cycle I

Cycle I was carried out in two sessions. The teacher focused on introducing the rules of tingko' tingko', the base, and the *mayang-mayang sipompa* draw, and on encouraging passive children to move and look for hiding places. The results at the end of Cycle I are presented in Table 3.

In the first session of Cycle I, many children were enthusiastic but confused about the rules. Some children left the play area to hide in places that were not allowed, some guards opened their eyes before finishing the count, and several children ran directly to the base without hiding. In the second session, the children followed the sequence of the game more smoothly, and more children dared to run and look for hiding places. However, several children still slipped or stopped abruptly when they had to turn quickly to avoid the guard, and a few children chose to stay near the teacher instead of joining the game.

Table 3. Gross motor scores of the children at the end of Cycle I.

Child	*Rule compliance*	*Agility*	*Postural stability*	*Active engagement*	*Total score*	*%*	*Category*
A1	MB (2)	BSH (3)	BSH (3)	BSH (3)	11	68.75	BSH
A2	MB (2)	BSH (3)	BSH (3)	BSH (3)	11	68.75	BSH
A3	BSH (3)	BSH (3)	BSH (3)	MB (2)	11	68.75	BSH
A4	MB (2)	BSH (3)	BSH (3)	BSH (3)	11	68.75	BSH
A5	MB (2)	MB (2)	MB (2)	MB (2)	8	50.00	MB
A6	BSH (3)	MB (2)	BSH (3)	MB (2)	10	62.50	BSH
A7	MB (2)	MB (2)	MB (2)	MB (2)	8	50.00	MB
A8	MB (2)	MB (2)	MB (2)	MB (2)	8	50.00	MB
A9	MB (2)	BSH (3)	BSH (3)	BSH (3)	11	68.75	BSH
A10	MB (2)	MB (2)	MB (2)	MB (2)	8	50.00	MB
Total	22	25	26	24	97	60.63	BSH

Note. Column totals were recalculated from the individual scores.

At the end of Cycle I, six children (60%) had reached the BSH category, while four children (A5, A7, A8, and A10) remained in the MB category with an individual achievement of 50.00%. The total score increased to 97 out of 160, giving a classical achievement of 60.63% (BSH). This result did not yet meet the 75% criterion. In the collaborative reflection, the main problems identified were that the children still needed repeated reminders about the safe boundaries of the play area and that several girls were still hesitant to run and turn quickly when chased by the guard. These problems became the basis for revising the action in Cycle II.

Cycle II

In Cycle II, the action was revised by marking the play route and the boundaries more clearly, demonstrating turning movements step by step, forming more balanced play groups to encourage motivation, and giving more intensive encouragement to passive children. The results at the end of Cycle II are presented in Table 4.

The changes were implemented concretely. The boundaries of the play area were marked with coloured lines and cones, and the route between the hiding places and the base was shown to the children before the game started. Turning movements were demonstrated in steps: the teacher first showed how to slow down, lower the body slightly, place one foot to the side, and push off in the new direction, and the children practised the movement slowly before using it in the game. Groups were arranged so that children with stronger and weaker gross motor skills played together, and children who had been passive were given roles such as leading the count or being the first to run to the base, with praise for every attempt.

During Cycle II, the game proceeded more smoothly. Fewer reminders about the boundaries were needed, because the children could see where the play area ended. The children who had been hesitant to run, including several girls, began to take part more actively once they had practised the turning movement slowly and had been given roles in the group. Children also began to cheer for friends who reached the base and to remind each other not to peek while counting. Some children still slowed down too much when turning or hid in the same place repeatedly, but these difficulties no longer prevented them from taking part in the game.

Table 4. Gross motor scores of the children at the end of Cycle II.

Child	*Rule compliance*	*Agility*	*Postural stability*	*Active engagement*	*Total score*	*%*	*Category*
A1	BSH (3)	BSB (4)	BSH (3)	BSH (3)	13	81.25	BSB
A2	BSH (3)	BSH (3)	BSB (4)	BSB (4)	14	87.50	BSB
A3	BSB (4)	BSB (4)	BSH (3)	BSH (3)	14	87.50	BSB
A4	BSH (3)	BSH (3)	BSH (3)	BSB (4)	13	81.25	BSB
A5	BSH (3)	BSH (3)	BSH (3)	MB (2)	11	68.75	BSH
A6	BSB (4)	BSH (3)	BSH (3)	BSH (3)	13	81.25	BSB
A7	BSH (3)	BSH (3)	BSH (3)	BSH (3)	12	75.00	BSH
A8	BSH (3)	BSH (3)	BSH (3)	BSH (3)	12	75.00	BSH
A9	MB (2)	BSB (4)	BSH (3)	BSH (3)	12	75.00	BSH
A10	MB (2)	BSH (3)	BSH (3)	BSH (3)	11	68.75	BSH
Total	30	33	31	31	125	78.13	BSB

Note. Column totals were recalculated from the individual scores.

In Cycle II, five children (A1, A2, A3, A4, and A6) reached the BSB category with individual achievements between 81.25% and 87.50%, and the other five children were in the BSH category with achievements between 68.75% and 75.00%. No child remained in the BB or MB category. The total score increased to 125 out of 160, giving a classical achievement of 78.13% (BSB). Because this result exceeded the 75% criterion, the action was considered successful and the cycles were ended after Cycle II.

Table 5 summarises the achievement of each indicator across the three stages. All four indicators increased from the pre-action stage to Cycle II. The largest gain occurred in rule compliance, which rose from 32.5% to 75.0%, followed by agility (from 42.5% to 82.5%) and active engagement (from 37.5% to 77.5%).

Comparison of the individual scores before the action and at the end of Cycle II shows that every child improved. The total scores increased by three to seven points, which corresponds to gains of 18.75 to 43.75 percentage points. The largest gains were made by A2 and A7, whose totals increased by seven points each, while the smallest gain was made by A4, who already had one of the highest scores before the action. The three children with the lowest pre-action scores (A5, A7, and A10, each at 31.25%) all reached the BSH category by the end of Cycle II, with achievements between 68.75% and 75.00%. Thus, the action benefited not only children who were already relatively skilled but also those who had the greatest difficulty at the beginning.

The indicator results also show different patterns of change. Postural stability was the strongest aspect before the action (60.0%) but increased the least, reaching 77.5% in Cycle II. Rule compliance, which was the weakest aspect at the beginning (32.5%), increased the most, but at 75.0% it remained one of the lower indicators in Cycle II, mainly because A9 and A10 still needed reminders about the rules. Agility reached the highest level in Cycle II (82.5%), which is consistent with the step-by-step demonstration of turning movements introduced in that cycle.

Table 5. Achievement of each gross motor indicator before the action, in Cycle I, and in Cycle II.

Indicator	*Pre-action (%)*	*Cycle I (%)*	*Cycle II (%)*
Rule compliance	32.5	55.0	75.0
Agility	42.5	62.5	82.5
Postural stability	60.0	65.0	77.5
Active engagement	37.5	60.0	77.5
Classical achievement	43.13	60.63	78.13

Note. Indicator achievement = total score of ten children / 40 × 100%.

DISCUSSION

Changes Across the Cycles

The results show an observed improvement in the gross motor skills of the ten children in Group B, from 43.13% before the action to 60.63% in Cycle I and 78.13% in Cycle II. Because the study used descriptive percentages within a classroom action research design, without a control group or inferential testing, the improvement should be understood as a substantial change in the observed performance of this group rather than as a statistically significant or generalisable effect. The changes made in Cycle II, namely clearer boundaries, step-by-step demonstrations, balanced groups, and encouragement for passive children, were part of the learning package, so the gains cannot be attributed to the game alone.

The changes between the cycles show that the game alone was not sufficient to produce the expected improvement. In Cycle I, the children were enthusiastic, but the rules and boundaries were still unclear to many of them, and several children were not yet confident enough to run and turn quickly. The classical achievement increased by 17.50 percentage points, but four children remained in the MB category. In Cycle II, the same game was combined with clearer visual boundaries, step-by-step demonstrations, balanced groups, and encouragement for passive children, and the classical achievement increased by a further 17.50 points. This pattern suggests that the effect of a traditional game depends on how the teacher organises and supports it.

Gross Motor Demands of Tingko' Tingko'

The structure of tingko' tingko' combines several gross motor movements in one activity. When children run to reach the base or to avoid the guard, they repeatedly use the large muscles of the legs, which trains strength and endurance. This is consistent with the view that gross motor development in early childhood is characterised by the increasing use of large muscles in dynamic locomotor activities (Sumarni, 2005). The game also requires sudden changes of direction and abrupt stops in narrow spaces when hiding, which exercise agility and postural control. Hurlock (1978) described motor development as the maturation of control over body movements through the coordinated activity of the nervous system and muscles, developed by repeated practice and experience. Tingko' tingko' provides this kind of repeated practice in an enjoyable way, so that children move without feeling forced.

Agility, which showed the highest achievement in Cycle II, is a complex ability that involves speed, balance, coordination, and quick decision-making. In tingko' tingko', children do not change direction according to a fixed pattern but in response to the movements of the guard, so they must perceive a situation, decide, and move at the same time. This kind of open, game-based practice resembles the conditions

in which agility is used in daily life and in sport. In the fundamental movement phase, repeated practice of this kind helps children progress from immature to more mature movement patterns (Gallahue et al., 2012). The step-by-step demonstration in Cycle II gave children a clear model of the movement, while the game gave them many opportunities to apply it.

Enjoyment also appears to have played an important role. Children often perceive structured exercises as tiring or boring, especially when they are repeated many times, whereas a game provides a reason to move that comes from the situation itself: a child runs because the guard is approaching, not because the teacher has asked for another repetition. In this study, children repeated running, stopping, crouching, and turning many times in each session without being asked to do so. The enjoyment of the game therefore increased the amount of practice, which is one of the main conditions for motor learning in early childhood (Gallahue et al., 2012; Pellegrini & Smith, 1998).

Rules, Self-regulation, and Teacher Support

The improvement in rule compliance can be explained by the cognitive and social demands of the game. Piaget (1962) argued that young children build their understanding through active exploration, while Vygotsky (1978) emphasised that social interaction in play helps children internalise rules and develop self-control. The rules of tingko' tingko', such as not peeking while counting, counting in order, and staying within the play area, require children to regulate their impulses. When children learn to follow these rules together with their group, they practise self-regulation as well as movement skills.

The teacher's support in Cycle II can be understood through Vygotsky's (1978) idea that children can perform beyond their independent level when they receive appropriate assistance from adults or more capable peers. The step-by-step demonstrations, reminders about the boundaries, and pairing of less skilled children with more skilled ones functioned as scaffolding that allowed children to attempt movements and rules they could not yet manage alone. As the children became more competent, the reminders were reduced, and several children began to remind their friends of the rules themselves, which is one of the behaviours described in the BSB criterion. Clear visual boundaries also reduced the amount of information that children had to remember while running, so that they could concentrate on moving and following the game.

Comparison with Previous Studies

These results are consistent with previous classroom action research on traditional games. Muhajirin and Andriana (2022) reported that the mean gross motor score of children who played hide-and-seek increased from 47.5 at the initial observation to 73.6 in the second cycle, and Ashar and Inrawulan (2021) reported that hide-and-seek helped kindergarten children reach the very well developed category in the second cycle. Larasati and Sit (2025) found that a traditional cat-and-mouse game increased children's gross motor performance from 44% before the intervention to 66% in the first cycle and 88% in the second cycle. Similar improvements have been reported for rope jumping (Bendriyanti & Haryono, 2021) and engklek (Baharta et al., 2026), and studies with older children have shown that practising traditional game skills can support the acquisition of gross motor skills

(Hussain & Cheong, 2022). Together, these studies indicate that traditional games are a practical medium for gross motor stimulation in early childhood.

The classical achievement in this study (78.13% in Cycle II) is within the range reported by these studies, although direct comparison is limited because each study used different indicators, scales, and success criteria. What these studies share is that traditional games are introduced gradually, are revised after reflection, and are combined with teacher guidance, which suggests that the cycle of action and reflection is itself an important part of the improvement. The present study adds to this literature by documenting a local Makassar game with clearly defined indicators and by showing which aspects of gross motor performance changed most.

The four observed aspects were also aligned with the national standard of child development achievement for children aged 5–6 years, which expects children to perform coordinated movements for agility, balance, and following rules in group games (Ministry of Education and Culture, 2014). Linking a traditional game to these standards helps teachers to show that play-based activities contribute to the official learning goals of kindergarten, rather than being separate from them. This alignment is important in settings where parents or teachers may regard outdoor play as less valuable than academic activities in the classroom (Saepuddin, 2026).

Islamic Values in Physical Learning

The integration of Islamic values gives this physical learning a further dimension, in line with the identity of Ihya Ulum. The Qur'an describes human beings as born without knowledge and then given hearing, sight, and hearts so that they may be grateful (Qur'an 16:78). In this study, the verse was understood as a reminder that children's senses and bodies are abilities that need to be stimulated through appropriate education. Tingko' tingko' engages children's seeing, hearing, and physical movement at the same time and in a way that suits their age.

The principle that "Allah does not charge a soul except with that within its capacity" (Qur'an 2:286, Saheeh International translation) is also relevant to early childhood pedagogy. Teachers are responsible for designing learning that does not burden children with rigid academic targets. Tingko' tingko' allows children to run, hide, and explore their physical abilities naturally within their own capacity, without intimidation or pressure. Playing in groups also provides opportunities to practise honesty, sportsmanship, and kindness towards peers, in line with the command in Surah Al-Qasas (28:77) to do good to others as Allah has done good to human beings. In this way, the study connects motor development, local Makassar culture, and Qur'anic values in early childhood learning.

Islamic teaching also gives attention to physical strength and health. A well-known hadith narrated by Muslim states that the strong believer is better and more beloved to Allah than the weak believer, while there is good in both. In early childhood education, this teaching can be understood as encouragement to care for children's physical development and health through enjoyable activity, not through competition or pressure. Brief reminders before play, such as praying together, playing honestly, and helping a friend who falls, allowed the teacher to connect physical activity with good character in a natural way.

Implications and Limitations

For practice, the findings suggest that teachers who use traditional games for gross motor learning should prepare a safe area with clear visual boundaries, explain

and demonstrate the rules and the target movements before the game, organise groups so that children with different levels of skill play together, and give passive children specific roles and praise. Teachers can also record children's performance with simple observation sheets so that the game becomes part of planned assessment rather than only free play. Because tingko' tingko' requires no special equipment, it can be used in kindergartens with limited facilities, and other local games with similar movement demands can be introduced in the same way. Parents can also be encouraged to play such games with their children at home as an alternative to screen-based entertainment.

This study has several limitations. It involved only ten children in one kindergarten, and each cycle consisted of only two sessions. The observations were carried out by the researcher and colleagues who were also involved in the action, and inter-observer agreement was not reported. In addition, several changes were made at the same time in Cycle II, so the contribution of each change cannot be separated. Future studies could involve more children and institutions, use standardised gross motor tests, and compare tingko' tingko' with other forms of outdoor play.

CONCLUSION

The application of the traditional Makassar game tingko' tingko' in two cycles of classroom action research was accompanied by an improvement in the gross motor skills of children aged 5–6 years in Group B. The improvement was seen in all four observed aspects: compliance with movement rules, agility in changing running direction, postural stability during dynamic and static movements, and active engagement in outdoor physical activity. The classical achievement increased from 43.13% before the action (MB) to 60.63% in Cycle I (BSH) and 78.13% in Cycle II (BSB), exceeding the 75% success criterion. The revisions made after Cycle I, namely clearer visual boundaries of the play area, step-by-step demonstrations of turning movements, balanced groups, and intensive encouragement for passive children, were important parts of this improvement.

Early childhood teachers may use tingko' tingko' and other local traditional games as contextual and low-cost activities for physical-motor learning. Future research should involve larger samples, use standardised measures and, where possible, comparison groups to examine the effect of traditional games on other areas of early childhood development.

REFERENCES

Ashar, A., & Inrawulan, I. (2021). Peningkatan motorik kasar anak melalui permainan tradisional petak umpet di taman kanak-kanak. *TEMATIK: Jurnal Pemikiran dan Penelitian Pendidikan Anak Usia Dini,* *7*(1), 8. https://doi.org/10.26858/tematik.v7i1.20701

Baharta, M. M., Murtono, T., Rejeki, H. S., & Liloi, D. K. (2026). The influence of the traditional game engklek on gross motor development of children aged 5–6 years. *COMPETITOR: Jurnal Pendidikan Kepelatihan Olahraga, 18*(1), 122–131. https://doi.org/10.26858/cpjok.v18i1.488

Bendriyanti, R. P., & Haryono, M. (2021). Improving gross motor skill by traditional games at PAUD Gemilang in Bengkulu. *Journal of Education Technology, 5*(2). https://doi.org/10.23887/jet.v5i2.34449

Candra, O., Pranoto, N. W., Ropitasari, R., Cahyono, D., Sukmawati, E., & CS, A. (2023). Peran pendidikan jasmani dalam pengembangan motorik kasar pada anak usia dini. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini, 7*(2), 2538–2546. https://doi.org/10.31004/obsesi.v7i2.4506

Gallahue, D. L., Ozmun, J. C., & Goodway, J. D. (2012). *Understanding motor development: Infants, children, adolescents, adults* (7th ed.). McGraw-Hill.

Hurlock, E. B. (1978). *Child development* (6th ed.). McGraw-Hill.

Hussain, B., & Cheong, J. P. G. (2022). Improving gross motor skills of children through traditional games skills practiced along the contextual interference continuum. *Frontiers in Psychology, 13*, Article 986403. https://doi.org/10.3389/fpsyg.2022.986403

Karmila, D. (2024). Pengembangan modul pembelajaran permainan tradisional dalam meningkatkan kemampuan motorik kasar di TK. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini, 8*(6), 1577–1590. https://doi.org/10.31004/obsesi.v8i6.6068

Kemmis, S., McTaggart, R., & Nixon, R. (2014). *The action research planner: Doing critical participatory action research*. Springer. https://doi.org/10.1007/978-981-4560-67-2

Larasati, S. A., & Sit, M. (2025). Managing traditional 'cat and mouse' play to optimize gross motor development in early childhood. *Journal of Educational Management Research, 4*(5), 1900–1912. https://doi.org/10.61987/jemr.v4i5.1195

Lorenza, D. D., & Prasetiya, B. (2024). Pengembangan moral anak usia dini melalui permainan tradisional petak umpet. *Al-Athfal: Jurnal Pendidikan Anak, 5*(1), 142–156. https://doi.org/10.46773/alathfal.v5i1.987

Ministry of Education and Culture. (2014). *Peraturan Menteri Pendidikan dan Kebudayaan Republik Indonesia Nomor 137 Tahun 2014 tentang Standar Nasional Pendidikan Anak Usia Dini*. https://repositori.kemendikbud.go.id/12860/

Muhajirin, M., & Andriana, Y. (2022). Implementasi permainan tradisional petak umpet untuk meningkatkan keterampilan motorik kasar pada anak usia dini. *ALINEA: Jurnal Bahasa, Sastra dan Pengajarannya, 2*(2), 131–138. https://doi.org/10.58218/alinea.v2i2.195

Muharrahman, M., Loka, N., Syarfina, A., Kibtiyah, M., & Sari, N. (2023). Implementasi permainan tradisional petak umpet pada anak usia dini di era Society 5.0. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini, 7*(2), 1368–1380. https://doi.org/10.31004/obsesi.v7i2.3425

Pellegrini, A. D., & Smith, P. K. (1998). Physical activity play: The nature and function of a neglected aspect of play. *Child Development, 69*(3), 577–598. https://doi.org/10.1111/j.1467-8624.1998.tb06226.x

Piaget, J. (1962). *Play, dreams and imitation in childhood*. W. W. Norton & Company.

Republic of Indonesia. (2003). *Undang-Undang Republik Indonesia Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional*. Sekretariat Negara.

Saepuddin, I. M. (2026). *Penerapan permainan tradisional tingko' tingko' untuk meningkatkan keterampilan motorik kasar anak usia dini di TK Asiana* [Undergraduate thesis, Universitas Islam Makassar].

Sumarni. (2005). *Model pengembangan keterampilan motorik anak usia dini*. Departemen Pendidikan Nasional.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.

World Health Organization. (2019). *Guidelines on physical activity, sedentary behaviour and sleep for children under 5 years of age*. World Health Organization. https://iris.who.int/handle/10665/311664

Yulianto, A. G., Saputra, Y. M., Satria, T., & Risyanto, A. (2025). Traditional Indonesian games as a medium for enhancing gross and fine motor skills in preschool children: A systematic literature review. *Journal of Physical Education, Health and Sport, 12*(2), 273–279. https://doi.org/10.15294/jpehs.v12i2.36811