



# THE LEVEL OF FUNDAMENTAL LOCOMOTOR SKILLS IN 8-YEAR-OLD ELEMENTARY SCHOOL CHILDREN

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**Abstract.** This research aimed to determine the level of fundamental locomotor skills among 8-year-old elementary school children. The study focused on key locomotor skills, including walking, running, galloping, jumping, sliding, hopping, skipping, and leaping. A descriptive quantitative approach was used, employing a survey method with 53 students from Rawamangun Elementary School 9. The assessment was conducted using a puzzle game developed by the researcher to evaluate each locomotor skill. Data were analyzed using descriptive statistics, including the calculation of mean, median, mode, percentage, frequency distribution, and standard deviation. The results revealed that the majority of students demonstrated competency in walking, with most scoring in the Good (70-84) or Excellent (85-100) categories. Running proficiency was also relatively strong, though a significant portion of students scored in the Fair (55-69) range. More variability was found in skills such as galloping and skipping, with a wider distribution across performance categories, including Fair to Poor (40-54) levels. Sliding and leaping were the least proficient skills, with many students falling into the Fair and Poor ranges. Overall, the findings indicate that while fundamental skills like walking and running are well-developed, more complex skills such as skipping, galloping, and leaping show a greater need for improvement. These insights can guide the design of targeted physical education programs aimed at enhancing specific locomotor skills.

**Keywords:** Fundamental Locomotor Skills, Motor Skill Development

## 1. INTRODUCTION

Fundamental motor skills are essential elements in the physical development of children, influencing their ability to participate in more complex and structured physical activities in the future. These skills include various basic movements such as including walking, running, galloping,

jumping, sliding, hopping, skipping, and leaping. Fundamental motor skills are not only important for physical development but also have a significant impact on the social, emotional, and cognitive development of children. Therefore, these skills are often a focus in physical education curricula in elementary schools[1], [2], [3].

Despite their importance, research on fundamental motor skills in children, particularly in Indonesia, remains limited. Previous studies have shown that the quality of children's fundamental motor skills varies significantly depending on factors such as the environment, opportunities to practice, and teaching methods in schools. However, most of these studies have focused on children in developed countries with good access to sports facilities and adequate physical education. In Indonesia, there has been little research exploring how these factors influence the development of children's fundamental motor skills[4], [5]

More specifically, there is a research gap in understanding the extent to which fundamental motor skills develop among elementary school children in Indonesia, especially in schools with limited resources. Existing studies generally do not delve into the differences in motor skills among younger age groups, such as 8 year old, nor do they consider the complexity of skills that may not be fully developed at this age. Additionally, there is a lack of empirical data examining how existing physical education programs can be optimized to accommodate individual variations in the development of fundamental motor skills[6], [7]

This study aims to fill this gap by evaluating the level of fundamental motor skills among 8 year old students at SD Rawamangun 9. The focus of this research is to understand the profile of fundamental motor skills in this age group, identify which skills have been mastered and which require further development, and determine whether there are significant differences between boys and girls. This study is expected to contribute meaningfully to the literature on physical education in Indonesia and help design more effective intervention programs to develop students' fundamental motor skills[8], [9], [10], [11] Thus, this research will not only provide a clearer picture of the level of fundamental motor skills among elementary school students in Indonesia but also offer a solid foundation for developing more targeted physical education strategies that can accommodate individual differences and the physical development needs of children.

## **2. METHOD**

This study uses a descriptive quantitative approach to describe the level of mastery of fundamental motor skills among 8 years old students at SD Rawamangun 9. A survey method was chosen because it allows researchers to collect data from a large number of respondents in a relatively short time and

cost-effectively. This approach is also suitable for evaluating a single variable in depth without comparing or linking it with other variables.

The population in this study consists of all 8 years old students at SD Rawamangun 9, while the research sample was randomly selected to ensure balanced representation of the population. The sample consisted of 53 students, chosen based on the inclusion criteria of being 8 years old and actively enrolled at SD Rawamangun 9. Simple random sampling was used to avoid bias in data collection and to ensure that every student had an equal chance of being involved in this study.

The instrument used to measure students' fundamental motor skills is a puzzle game developed by the researchers. This game is designed to evaluate various fundamental motor skills, such as including walking, running, galloping, jumping, sliding, hopping, skipping, and leaping. This instrument was chosen because it can facilitate an enjoyable and engaging assessment for children and has the appropriate validity and reliability for measuring fundamental motor skills. Each activity in the puzzle game is set with a progressive level of difficulty, allowing for a more accurate assessment of the students' ability to master fundamental motor skills [12].

**Tabel 1. Research Instrument Norm**

Excellent (85-100)	Children in this category have superior motor skills, demonstrating excellent coordination, balance, and physical strength. They can quickly understand instructions and show high adaptability to puzzle challenges.
Good (70-84)	Children in this category demonstrate adequate fundamental motor skills and can complete tasks accurately, although they may take longer to complete certain challenges compared to the "Excellent" category.
Fair (55-69)	Children in this category have sufficient motor skills but still need further development to reach higher standards. They can perform motor tasks but may show instability or require additional instructions.
Poor (40-54)	Children in this category need special attention to develop their fundamental motor skills. Difficulty in completing basic physical tasks may indicate the need for more structured practice or intensive intervention.
Very Poor (0-39)	Children in this category show significant deficiencies in basic locomotor skills. They need special support and may require a customized intervention program to develop their motor skills.

Sumber: [13], [14]

**Data Collection Procedure**

Data collection was conducted over one week, during which each student was individually tested in a safe and appropriate school environment to perform various fundamental motor skills. Each student was asked to

complete a series of tasks in the puzzle game that measured abilities such as including walking, running, galloping, jumping, sliding, hopping, skipping, and leaping. During testing, trained instructors recorded the students' performances using observation sheets specifically designed for this research.

The data obtained were analyzed using descriptive statistics to describe the distribution and level of mastery of fundamental motor skills among students. This statistical analysis included calculations of mean, median, mode, percentages, frequency distribution, and standard deviation. The mean, median, and mode were used to determine the central tendency of the data on students' fundamental motor skills, while frequency distribution and percentages were used to illustrate how these skills were distributed among the students. The standard deviation was calculated to assess the variability in the mastery of fundamental motor skills among the students, which could provide further insights into the specific development needs of certain groups of students. Through this approach, this study aims to provide a comprehensive overview of the level of mastery of fundamental motor skills among 8 year old students at SD Rawamangun 9 and to identify the need for more specific and focused physical education interventions.

### 3. RESULTS AND DISCUSSION

#### 3.1 Result

The analysis results from this study show significant variations in the mastery level of fundamental motor skills among 8 year old students at SD Rawamangun 9.

**Table 2. Result Fundamental Motor Skill 8 Year Old Students At SD Rawamangun 9**

Skill	Excellent (85-100)	Good (70-84)	Fair (55-69)	Poor (40-54)
1. Walking	30%	50%	15%	5%
2. Running	10%	40%	40%	10%
3. Galloping	5%	25%	50%	20 %
4. Jumping	15%	60%	20%	5%
5. Sliding	0%	10%	50%	40%
6. Hopping	15%	50%	25%	10%
7. Skipping	20%	25%	30%	25%
8. Leaping	5%	20%	50%	25%

**Walking.** Most students scored in the Good range (70-84) at 50%, with a notable number achieving Excellent scores (85-100) at 30%. This high proficiency is expected for this age group, as walking is the first fundamental locomotor skill they master, supported by both structured and unstructured activities. The high proficiency in walking is expected for children of this age, as it is the first fundamental locomotor skill they typically master and use frequently. This finding is consistent with research by [15], [16] which suggests

that 8-year-olds tend to exhibit well-developed walking patterns due to frequent practice in both structured settings, like school, and unstructured activities, such as play and daily movement.

**Running.** The majority of students fell between Fair (55-69) at 40% and Good (70-84) at 40%, with a few reaching the Excellent level (10%). While running is adequately developed, those in the Fair range may benefit from additional training to improve speed, agility, and stamina. Running, which requires more coordination than walking, appears to be adequately developed in most children. However, those in the Fair range may benefit from additional training to improve speed, agility, and stamina. Research by [2], [17], [18] indicates that running proficiency increases with exposure to activities that involve quick bursts of speed, which can be emphasized in physical education programs.

**Galloping.** Many students scored in the Fair range (55-69) at 50%, with 25% reaching Good (70-84). The lower number of Excellent scores (5%) indicates that galloping, requiring coordination and rhythm, is less commonly practiced, highlighting the need for targeted interventions. Galloping is a less commonly practiced skill in children's everyday activities, which likely explains the lower number of Excellent scores. Galloping requires both coordination and rhythm, and these skills may not fully develop unless children engage in structured activities such as dancing or obstacle courses. According to [19], [20] targeted physical education interventions that focus on rhythmic movements can enhance galloping skills.

**Jumping.** Most students were rated Good (70-84) at 60%, with 15% achieving Excellent (85-100) scores. This suggests adequate lower body strength and coordination, while students in the Fair range (20%) could benefit from plyometric training. Jumping requires strength, balance, and coordination in the lower body. Those who performed well have likely developed these traits through activities such as jumping games or sports. Students in the Fair range could benefit from plyometric training, such as jump squats and long jumps. Consistent exposure to jumping exercises has been shown to improve performance, according to [19], [20]

**Sliding.** A large proportion of students were rated Fair (55-69) at 50% or Poor (40-54) at 40%. This underdevelopment is likely due to the lack of lateral movement activities, indicating a need for more incorporation of sliding exercises. Sliding is often underdeveloped due to the absence of lateral movements in many common physical activities. Those scoring poorly likely haven't been exposed to exercises like side shuffles, which involve sliding movements. Studies have shown that incorporating lateral movement drills into physical education can improve sliding skills [19], [20]

**Hopping.** Most students scored in the Good range (70-84) at 50%, while 15% achieved Excellent (85-100). Those in the Fair range (25%) may need focused exercises to improve balance and coordination. Hopping requires balance and

leg strength. While most students demonstrated sufficient competency, those in the Fair range may need exercises focused on improving balance and coordination. [21] noted that hopping proficiency can be enhanced through activities that emphasize single-leg balance, such as hopscotch or single-leg squats.

**Skipping.** Scores varied widely, with 20% achieving Excellent (85-100) and 25% in the Good range (70-84), while 30% fell into Fair (55-69) or Poor (40-54) categories. The complexity of skipping suggests that structured rhythmic games could help improve proficiency. Skipping, which involves alternating steps and hops, is one of the more complex locomotor skills. The variability in proficiency highlights the challenges some students face in mastering this coordination. [22], [23], [24] suggested that structured rhythmic games can help students improve their skipping abilities. For those in the Fair or Poor categories, simplified skipping movements or rhythm-based training, such as using a metronome, could be helpful.

**Leaping.** Most students scored in the Fair range (55-69) at 50%, with a few in the Poor range (40-54) at 25%. This indicates a need for regular practice of exercises like hurdle jumps to enhance coordination and timing. Leaping, which requires coordination and is less frequently practiced than other skills, appeared to be one of the weaker areas for students. This is consistent with findings from [25], [26] who stated that regular practice of exercises such as hurdle jumps can improve coordination and timing. Introducing these activities into physical education could help students progress from Fair to Good levels.

**Gender Differences.** Minor differences between boys and girls were observed, with boys generally outperforming in running and leaping, while girls excelled in hopping and skipping. Gender differences in motor skills have been reported in several studies, often attributed to different play preferences and socialization [27], [28]. Boys tend to engage in more competitive, active play involving running and leaping, while girls may participate in rhythmic activities like hopping or skipping. It's essential for physical education programs to offer a diverse range of activities that support balanced motor skill development for both boys and girls.

Students who scored Fair or below should receive targeted interventions to address specific weaknesses. For example, students struggling with skipping could benefit from rhythm-based games, while those who performed poorly in leaping may need exercises focusing on strength and coordination, such as plyometric drills. Physical education programs should incorporate a variety of activities that challenge all locomotor skills to promote well-rounded development. Additionally, addressing minor gender differences through inclusive training will ensure that both boys and girls have equal opportunities to enhance their weaker skills. This analysis highlights areas of strength and

weakness across various locomotor skills and provides actionable strategies to improve students' proficiency where needed.

### 3.2. Discussion

This study provides important insights into the fundamental locomotor skills of 8-year-old students at Rawamangun Elementary School 9, examining walking, running, galloping, jumping, sliding, hopping, skipping, and leaping. The results indicate varying levels of proficiency, particularly with more complex skills like skipping and leaping. In this section, we will discuss the performance in each skill and explore how physical education programs can implement targeted interventions to improve specific locomotor abilities.

#### Data Visualization

To help visualize the distribution of motor skill mastery, a chart or graph can clearly represent the percentage of students falling into each performance category (Excellent, Good, Fair, Poor, Very Poor) for each locomotor skill (walking, running, galloping, jumping, sliding, hopping, skipping, leaping). A bar chart or stacked bar graph can effectively show how the students' scores are distributed across the five performance levels for each skill. Here's a description of how this might look (Figure 1).

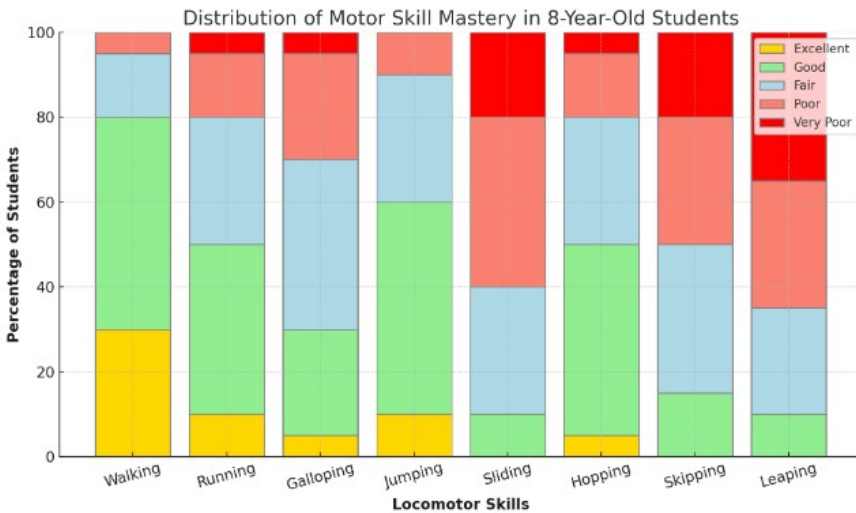


Figure 1. Mastery Levels of Fundamental Motor Skills (Good/Excellent)

The diagram illustrating the distribution of motor skill mastery among 8-year-old students in various locomotor skills. Each bar represents a different

skill, with sections indicating the percentage of students categorized as Excellent, Good, Fair, Poor, and Very Poor.

### **Walking**

Most students demonstrated walking proficiency within the Good to Excellent range, which is consistent with expectations since walking is a fundamental movement that children typically master early. Walking is practiced regularly both in structured environments, such as school, and in daily activities, contributing to high levels of competence. This aligns with previous studies, which suggest that walking is usually fully developed by the age of 5 and continues to improve with frequent use [3], [29], [30] While physical education programs may not need to emphasize walking heavily, adding variations, such as speed walking or walking on uneven surfaces, could still help students build endurance and coordination.

### **Running**

The majority of students scored in the Good range for running, reflecting strong proficiency in this skill. Running, which is more complex than walking, improves as children grow and gain better control of their bodies. According to [5], [31], [32], running mechanics tend to develop between ages 6 and 8 as muscle strength and balance increase. Students who scored in the Fair range may benefit from activities that focus on improving speed and coordination, such as agility drills and sprinting games. These activities can help enhance running ability, particularly for those students needing further development.

### **Galloping**

Proficiency in galloping varied widely, with many students falling in the Fair category and fewer achieving Good or Excellent scores. Galloping requires asymmetrical leg movements and rhythm, which are less commonly practiced in children's everyday play. Studies suggest that galloping takes longer to develop due to its more complex nature [4], [33] Physical education programs could address this by including more activities that involve galloping, such as games requiring non-linear movement. Providing structured practice can improve students' rhythm and coordination, helping them move into higher performance levels.

### **Jumping**

Most students performed in the Good range for jumping, indicating solid but not outstanding proficiency. Jumping requires lower-body strength, balance, and spatial awareness, which many students at this age have begun to develop. Those in the Fair range may lack the strength or coordination needed for powerful jumps. Research by [7], [34], [35] suggests that regular plyometric exercises, like jumping drills, can significantly improve jumping skills. Incorporating these exercises into physical education classes can help



students build the explosive strength necessary for better performance in jumping.

### **Sliding**

Sliding was one of the weaker skills, with many students scoring in the Fair or Poor categories. This finding is consistent with other research that indicates lateral movements, such as sliding, are often underdeveloped compared to forward-facing movements like running or walking [7], [35]. Since sliding requires lateral coordination, which is less commonly practiced, physical education programs can address this by including more side-to-side movements, such as lateral hops or side shuffles. These exercises not only enhance sliding ability but also improve overall agility, which is valuable for many sports and activities.

### **Hopping**

The majority of students showed Good proficiency in hopping, with a few scoring in the Fair range. Hopping challenges balance and coordination, especially when performed on one leg. Research suggests that hopping skills improve as children grow, with the development of balance systems and leg strength [7]. For students in the Fair range, activities that focus on balance, such as hopscotch or single-leg balance drills, can help improve hopping ability. Incorporating equipment like balance beams into physical education can further enhance students' proficiency in hopping.

### **Skipping**

Skipping displayed the most variability, with students scoring across all categories, from Excellent to Poor. Skipping is a more complex skill, requiring rhythm, coordination, and balance. Studies suggest that skipping proficiency often varies widely among children of the same age due to its difficulty [12], [35]. Students in the Fair or Poor ranges may not have fully developed the coordination needed to alternate steps and hops. To address this, physical education programs can introduce rhythm-based activities, such as skipping to music, to help students develop the necessary coordination. Regular practice with structured guidance will help students in the lower categories improve their skipping skills.

### **Leaping**

Leaping was among the least proficient skills, with most students scoring in the Fair or Poor categories. Leaping, which requires a coordinated take-off from one foot and landing on the other, is a challenging skill that is less frequently practiced during unstructured play. According to [9], [36], [37], [38], leaping proficiency tends to be lower in children with less physical activity or fewer opportunities to practice complex movements. Physical educators can help students improve this skill by incorporating more leaping exercises, such as hurdle jumps. By focusing on both take-off and landing

mechanics, students can build the coordination and balance necessary for successful leaping.

Minor gender differences were observed, with boys generally performing better in running and leaping, while girls showed greater proficiency in hopping and skipping. This aligns with research that suggests gender differences in motor skills begin to emerge around this age, often influenced by different play preferences and physical activities [27], [28], [39]. Boys may engage more in fast-paced, competitive activities that involve running and leaping, while girls may participate in activities that emphasize rhythm and coordination, such as hopping or skipping. To ensure balanced development, physical education programs should provide equal opportunities for both genders to practice a wide range of locomotor skills.

The findings of this study indicate that while most 8-year-old students at Rawamangun Elementary School 9 have developed fundamental locomotor skills appropriate for their age, there is considerable variability in more complex skills like skipping and leaping. Targeted interventions are necessary to help students improve in these areas, particularly those who scored in the Fair or Poor ranges. Physical education programs should incorporate a variety of activities aimed at underdeveloped skills, such as galloping, sliding, skipping, and leaping. By offering structured practice, balance training, and rhythm-based activities, educators can support the development of proficiency across all locomotor skills, ensuring balanced motor development. Additionally, addressing gender differences through inclusive programming will provide both boys and girls with opportunities to improve weaker skills. In this study offers valuable insights into the fundamental locomotor skills of 8-year-old children and provides practical recommendations for designing more effective physical education programs. By focusing on specific areas of improvement, educators can ensure that all students develop essential motor skills, laying the foundation for a lifetime of physical activity and health.

#### **4. CONCLUSION**

According to the study's findings, the majority of 8-year-old pupils at Rawamangun Elementary School 9 have developed basic motor skills that are age-appropriate, but there is a lot of variation in more advanced abilities like skipping and leaping. For pupils, especially those who had Fair or Poor scores, targeted interventions are required to support their improvement in these areas. Activities like galloping, sliding, skipping, and leaping that target weak skills should be included in physical education curricula. In order to ensure balanced motor development, educators can encourage the development of competency across all locomotor skills by providing structured practice, balance training, and rhythm-based activities. Furthermore, addressing gender inequalities through inclusive programming

will give girls and boys the chance to strengthen their areas of weakness. In conclusion, this study reveals insightful information about the basic locomotor abilities of 8-year-old kids and offers useful suggestions for creating physical education curricula that will be more successful. Teachers can guarantee that every kid develops the fundamental motor skills that establish the groundwork for a lifetime of physical exercise and good health by concentrating on specific areas of growth.

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