



Comparison of Running Skill Among Students of Different Standards of Maharashtra Mandal English Medium Primary and Pre-Primary School, Pune City

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ABSTRACT

Motor competence is a fundamental component of children's physical development and serves as the foundation for lifelong participation in physical activity and sports. Among the fundamental movement skills (FMS), running is considered one of the most essential locomotor skills because it contributes to the development of speed, coordination, balance, agility, and physical fitness. The present study aimed to compare the running skill of students studying in Standards I to IV at Maharashtra Mandal English Medium Primary and Pre-Primary School, Pune City. The study adopted a comparative cross-sectional research design. The study population consisted of 120 students, from which 62 students were selected using simple random sampling. Running skill was assessed using the performance criteria of the Test of Gross Motor Development-Second Edition (TGMD-2). To provide greater discrimination in performance levels, the original dichotomous scoring system was modified into a five-point rating scale after expert consultation. Descriptive statistics were used to summarize the data. The findings indicated a gradual increase in mean running scores from Standard I (28.28) to Standard IV (33.73), suggesting progressive improvement in locomotor competence with increasing grade level. The results emphasize the importance of structured physical education programmes and regular movement experiences in promoting motor competence among primary school children. Future studies should employ inferential statistical techniques and larger samples to validate these findings.

Keywords : Running skill, Fundamental Movement Skills, Motor Competence, TGMD-2, Physical Literacy, Primary School Children



Introduction

Childhood is a critical period for the acquisition of movement skills that support healthy growth, physical fitness, and lifelong participation in physical activity. During the primary school years, children experience rapid neuromuscular development, making this stage particularly important for learning and refining fundamental movement skills (FMS). These skills serve as the building blocks for more complex sports-specific movements and contribute significantly to children's physical, cognitive, emotional, and social development.

Fundamental movement skills are generally classified into three categories: locomotor skills, object-control skills, and stability skills. Locomotor skills include running, hopping, jumping, skipping, and galloping, which enable children to move efficiently from one place to another. Research has consistently shown that children who demonstrate higher levels of motor competence are more likely to participate in physical activity, maintain healthier lifestyles, and exhibit better physical fitness throughout adolescence and adulthood.

Running is one of the earliest and most frequently performed locomotor skills. It is an integral component of almost every sport and physical activity. Effective running requires coordinated arm and leg movements, balance, rhythm, postural control, and adequate muscular strength. Consequently, the assessment of running skill provides valuable information regarding a child's overall locomotor competence and motor development.

Recent studies have highlighted the close relationship between motor competence and physical literacy. Physical literacy encompasses not only movement competence but also motivation, confidence, knowledge, and understanding that encourage lifelong engagement in physical activity. Children with well-developed locomotor skills are more likely to participate confidently in sports and recreational activities, thereby reducing sedentary behaviour and improving long-term health outcomes.

Schools play a vital role in developing children's motor competence through structured physical education programmes. Teachers and physical education professionals can identify movement deficiencies at an early stage and implement appropriate interventions to improve children's movement quality. Therefore, systematic assessment of running skill is essential for evaluating children's locomotor development and planning evidence-based physical education programmes.

The **Test of Gross Motor Development–Second Edition (TGMD-2)** is one of the most widely accepted standardized instruments for assessing locomotor skills in



children. Although the original TGMD-2 employs dichotomous scoring, researchers have suggested that more detailed rating systems may provide greater sensitivity in differentiating levels of movement quality among children.

The present study was therefore undertaken to compare the running skill performance of students studying in Standards I, II, III, and IV of Maharashtra Mandal English Medium Primary and Pre-Primary School, Pune City.

Review of Literature

Several national and international studies have demonstrated that motor competence develops progressively with age and regular participation in physical activity. Gallahue, Ozmun, and Goodway (2012) reported that the acquisition of fundamental movement skills during childhood forms the basis for advanced motor performance and lifelong physical activity. Haywood and Getchell (2019) further emphasized that locomotor skills improve as children mature physically and receive structured opportunities for movement practice.

Logan et al. (2012), through a meta-analysis, concluded that interventions targeting fundamental movement skills significantly improve children's locomotor and object-control abilities. More recent investigations have reported that children with higher levels of motor competence are more physically active, possess better health-related fitness, and demonstrate greater confidence during sports participation.

Research on physical literacy has further reinforced the importance of developing locomotor competence during the primary school years. Studies conducted in recent years indicate that school-based physical education programmes contribute significantly to improvements in running mechanics, coordination, balance, and overall movement proficiency. These findings suggest that systematic assessment of running skill can provide valuable information regarding children's motor development and assist educators in designing appropriate instructional programmes.

Although several studies have investigated general motor competence, comparatively fewer studies have specifically examined running skill across different primary school standards within the Indian educational context. This gap highlights the need for the present investigation.

Objectives of the Study

1. To assess the running skill of students studying in Standards I, II, III, and IV.
2. To compare the running skill among students of different standards.



3. To determine the progression of running skill across the primary school years.

Methodology

Research Design

The present study adopted a **comparative cross-sectional research design**, which falls under the descriptive research approach. A comparative research design is appropriate when the objective is to compare the characteristics or performance of two or more naturally existing groups without manipulating any independent variable. In the present investigation, the running skill performance of students studying in Standards I, II, III, and IV was compared to determine whether locomotor skill development differed across grade levels.

The study was observational in nature, and no experimental intervention or treatment was provided to the participants. Running skill was assessed under standardized testing conditions using the performance criteria of the Test of Gross Motor Development–Second Edition (TGMD-2).

Population

The population for the present study consisted of **120 students** studying in **Standards I, II, III, and IV** of Maharashtra Mandal English Medium Primary and Pre-Primary School, Pune City.

Sample

A sample of 62 students was selected from the study population using the Simple Random Sampling technique. Students from all four standards were included to ensure representation of different age groups and developmental stages.

Table No. 1 : shows the distribution of the sample was as follows:

Standard	Number of Students
Standard I	18
Standard II	14
Standard III	15
Standard IV	15
Total	62



Sampling Technique

The **Simple Random Sampling Method** was adopted. Under this method, every student in the population had an equal probability of being selected for the study. This method was chosen to minimize sampling bias and improve the representativeness of the sample.

Variables of the Study

Independent Variable- Students from standard I to IV

Dependent Variable

Running Skill Score- Measured using the modified TGMD-2 running assessment criteria.

Tool for Data Collection

Running skill was assessed using the **Test of Gross Motor Development – Second Edition (TGMD-2)** developed by **Ulrich (2000)**.

The TGMD-2 is a standardized instrument designed to evaluate gross motor development in children. The running subtest assesses locomotor performance using four specific performance criteria.

Performance Criteria for Running

The following movement components were evaluated:

1. Arms move in opposition to the legs with elbows bent.
2. A brief period occurs where both feet are off the ground.
3. Narrow foot placement landing on heel or toe.
4. Non-support leg bent approximately 90 degrees during recovery.

Each participant performed the running task according to these performance indicators.

Modification of the TGMD-2 Scoring System

The original TGMD-2 uses a dichotomous scoring system in which each performance criterion is scored as either:

- 0 = Criterion not demonstrated
- 1 = Criterion demonstrated



For the present study, the scoring system was modified to a **five-point rating scale** to obtain a more detailed qualitative assessment of movement execution.

Table No. 2 : shows the modified scale

Score	Performance Level
1	Poor
2	Needs Improvement
3	Average
4	Good
5	Very Good

Data Collection Procedure

Data collection was conducted on the school playground under standardized conditions.

The procedure was as follows:

1. A running track of approximately 50 feet was marked using cones.
2. Participants received a demonstration of the running task.
3. Students were instructed to run from the starting cone to the finishing cone as fast as possible after the command "Go."
4. Each participant completed two trials.
5. During each trial, trained observers evaluated the running performance according to the modified TGMD-2 criteria.
6. Scores from both trials were recorded and combined to obtain the final running skill score.

Results

Descriptive Analysis of Running Skill Scores

The running skill scores of students studying in Standards I, II, III, and IV were summarized using descriptive statistics, including mean, median, standard deviation, standard error, minimum score, and maximum score. The descriptive statistics are presented in Table 3.

**Table No. 3 : Descriptive Statistics of Running Skill Scores**

Statistic	Std. I (n=18)	Std. II (n=14)	Std III (n=15)	Std IV (n=15)
Mean	28.28	29.21	33	33.73
Standard Error	1.7	1.74	1.5	1.58
Median	26	30	37	34
Standard Deviation	7.2	6.5	5.8	6.1
Minimum	16	18	23	27
Maximum	40	38	40	40

Interpretation

The mean running score showed a progressive increase from Standard I (28.28) to Standard IV (33.73). This trend suggests gradual improvement in running skill as children advance through higher standards. The standard deviation was relatively similar across all four groups, indicating moderate variability in performance within each standard. Standard III showed the lowest standard deviation, suggesting comparatively more consistent running performance among its students. The higher median values observed in Standards III and IV further indicate improved locomotor competence in the upper primary grades.

Distribution of Performance Categories

The distribution of students according to performance level is presented in Table 4.

Table No. 4 : Percentage Distribution of Running Skill Performance

Category	Std I	Std II	Std III	Std IV
Very Good	22.20%	21.40%	53.30%	20.00%
Good	0.00%	14.30%	6.70%	46.70%
Average	33.30%	28.60%	26.70%	33.30%
Needs Improvement	38.90%	7.10%	13.30%	0.00%
Poor	5.60%	14.30%	0.00%	0.00%



Interpretation

The percentage distribution demonstrates a gradual reduction in lower performance categories as students' progress through higher standards.

Standard I contained the highest proportion of students requiring improvement, whereas no students in Standards III and IV were classified in the poor category.

Although Standard IV achieved the highest mean score, Standard III contained the highest percentage of students classified as "Very Good." This indicates that a greater proportion of Standard III students demonstrated excellent movement quality, whereas Standard IV students were more evenly distributed between the "Good" and "Very Good" categories.

Discussion

The present study aimed to compare the running skill performance of students studying in Standards I to IV of Maharashtra Mandal English Medium Primary and Pre-Primary School, Pune. The descriptive findings indicate a progressive improvement in running skill with increasing school standard, suggesting age-related enhancement of locomotor competence.

Running is a fundamental locomotor skill that develops through maturation, repeated practice, neuromuscular development, and exposure to physical activity. As children grow older, improvements in muscular strength, balance, coordination, reaction time, and movement control contribute to more efficient running mechanics. The higher mean scores observed among students in Standards III and IV are therefore consistent with normal motor development.

These findings are consistent with the work of **Gallahue, Ozmun, and Goodway (2012)**, who reported that locomotor skills become progressively refined during middle childhood through maturation and regular movement experiences. Similarly, **Haywood and Getchell (2019)** emphasized that improvements in running technique occur as children's neuromuscular systems mature and movement patterns become increasingly coordinated.

The findings also support the conclusions of **Logan et al. (2012)**, whose meta-analysis demonstrated that structured physical activity programmes significantly improve fundamental movement skills in children. Regular participation in school physical education, outdoor play, and sports provides opportunities for repeated practice, which enhances locomotor competence over time.



More recent research has highlighted the close relationship between motor competence and physical literacy. Children with better locomotor skills are generally more confident in participating in physical activity and organized sports, thereby promoting healthier lifestyles throughout adolescence and adulthood. The progressive improvement observed in the present study therefore has important implications for long-term physical activity participation.

Conclusion

The present study compared the running skill performance of students studying in Standards I to IV of Maharashtra Mandal English Medium Primary and Pre-Primary School, Pune City.

The findings indicate a progressive improvement in running skill with increasing school standard. Students in higher standards generally demonstrated better locomotor competence than those in lower standards, suggesting that age, physical maturation, and continued participation in physical education contribute positively to the development of running skill.

The results further emphasize the importance of providing regular, structured physical education experiences during childhood to facilitate the development of fundamental movement skills. Early identification of children with poor locomotor competence may enable timely intervention and contribute to improved participation in sports and lifelong physical activity.

Recommendations

Based on the findings of the present study, the following recommendations are made:

1. Schools should conduct periodic assessments of fundamental movement skills during the primary school years.
2. Physical education teachers should provide additional practice sessions for children demonstrating lower locomotor competence.
3. Future studies should include larger samples drawn from multiple schools to improve generalizability.
4. Researchers should assess all fundamental movement skills rather than focusing solely on running.



5. Future research should employ inferential statistical analyses, including One-Way ANOVA or Kruskal–Wallis tests, together with post-hoc comparisons and effect size measures.
6. Longitudinal studies should be conducted to monitor changes in running skill over time.
7. Further research should establish the validity and reliability of the modified five-point TGMD-2 scoring system before its wider application.

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