

Correlation Between Physical Education Achievement, Basic Motor Skills, and Students' Interest in Selected Sports Disciplines

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A. Conception and design of the study; **B.** Acquisition of data;
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ABSTRACT

This study examined the correlation between Physical Education (PE) achievement, basic motor skills, and students' interest in selected sports disciplines among students at SMP Negeri 29 Makassar. A quantitative correlational design was employed involving 120 students from grades VII and VIII, selected through stratified random sampling. Data were collected using standardized motor skill tests (TGMD-2), interest questionnaires, and official PE grades from the school's records. Descriptive statistics showed the mean PE achievement score was 78.5 (SD = 8.3), basic motor skills score averaged 72.4 (SD = 7.5), and sports interest score had a mean of 3.9 on a 5-point Likert scale (SD = 0.6). Normality tests confirmed data distribution was suitable for parametric analysis. Pearson correlation analysis revealed a strong positive correlation between PE achievement and basic motor skills ($r = 0.68$, $p < 0.001$), a moderate positive correlation between PE achievement and sports interest ($r = 0.52$, $p = 0.004$), and a weak but significant correlation between motor skills and sports interest ($r = 0.33$, $p = 0.023$). These findings suggest that motor skill competence and student interest in sports significantly influence PE academic outcomes. The study emphasizes the need for educators to focus on improving motor skills while fostering students' motivation and engagement in sports activities. Future research should explore longitudinal effects and interventions aimed at enhancing both motor proficiency and sports interest.

Keywords : Physical Education Achievement; Basic Motor Skills; Sports Interest; Correlational Study; SMP Negeri 29 Makassar.

INTRODUCTION

Physical education (PE) plays a pivotal role in the holistic development of students, encompassing not only physical well-being but also cognitive, emotional, and social growth. Engagement in regular physical activities through structured PE programs has been linked to improved health outcomes, enhanced academic performance, and the development of essential life skills (Başkaya et al., 2023). Fundamental motor skills (FMS), including

locomotor, object control, and stability skills, serve as the building blocks for more complex and specialized movements required in various sports and daily activities (Pasaribu et al., 2021). Moreover, students' interest in specific sports disciplines significantly influences their participation levels, skill acquisition, and overall achievement in PE. A high level of interest often correlates with increased motivation, leading to greater engagement and better performance outcomes (Hidayat & Andrianto, 2023).

Recent studies have delved into the interrelationships between PE achievement, motor skills proficiency, and students' interest in sports. For instance, research indicates that students with higher motor competence tend to perform better academically and exhibit greater enthusiasm towards physical activities (Batez et al., 2021). Furthermore, a systematic review by Wang and Wang (2024) highlighted that both gross and fine motor skills are positively correlated with academic performance across various subjects, emphasizing the integral role of motor development in educational settings. In the Indonesian context, a study conducted at Universitas Negeri Makassar revealed significant correlations between motor ability, academic potential, physical fitness, and learning motivation among students, underscoring the multifaceted nature of PE achievement (Irfan, 2014).

Despite the growing body of literature exploring the connections between motor skills, academic performance, and interest in sports, there remains a paucity of research focusing specifically on junior high school students in Indonesia. Particularly, the dynamics at SMP Negeri 29 Makassar have not been extensively studied, leaving a gap in understanding how these variables interact within this demographic. Moreover, while existing studies have examined these factors individually or in pairs, comprehensive analyses encompassing all three PE achievement, basic motor skills, and students' interest in selected sports disciplines are limited.

The current literature lacks in-depth investigations into the triadic relationship between PE achievement, motor skills, and sports interest among junior high school students in Indonesia. Most studies have either focused on elementary or high school populations or have not considered the combined effect of these variables. Additionally, cultural, environmental, and institutional factors unique to specific schools, such as SMP Negeri 29 Makassar, may influence these relationships, necessitating localized research to inform targeted interventions and policy decisions.

This study aims to fill the identified research gap by examining the correlations between physical education achievement, basic motor skills, and students' interest in selected sports disciplines among students at SMP Negeri 29 Makassar. By focusing on this specific population, the research seeks to provide nuanced insights into how these variables interact within the Indonesian junior high school context. The novelty of this study lies in its comprehensive approach, simultaneously analyzing all three variables to uncover potential interdependencies and inform holistic educational strategies.

Understanding the interplay between PE achievement, motor skills, and sports interest is crucial for developing effective physical education curricula that foster student engagement, skill development, and overall well-being. This study endeavors to contribute to this understanding by exploring these relationships within the context of SMP Negeri 29 Makassar. The findings are anticipated to offer valuable insights for educators, policymakers, and stakeholders aiming to enhance physical education programs and promote active lifestyles among junior high school students in Indonesia.

METHODS

This study employed a quantitative correlational design to examine the relationship among three key variables: physical education (PE) achievement, basic motor skills, and interest in selected sports disciplines. A cross-sectional study was conducted, collecting data at a single point in time to assess existing relationships without manipulating any variables. This design is suitable for identifying patterns and associations among educational and behavioral factors in school-based settings (Chen et al., 2021).

Table 1.
Research Design

Component	Description
Research Type	Quantitative
Approach	Correlational
Design	Cross-sectional
Purpose	To assess correlations between PE achievement, basic motor skills, and sports interest

The population of this study consisted of all seventh- and eighth-grade students at SMP Negeri 29 Makassar. A total of 120 students were selected using stratified random sampling to ensure proportional representation based on grade level and gender. Inclusion criteria included students actively participating in physical education (PE) classes, while those with medical conditions limiting physical activity were excluded. This sampling technique enhances generalizability and reduces sampling bias in educational research (Arifin et al., 2022).

Table 2.
Participants

Category	Description
Population	Grade VII and VIII students
Sampling Method	Stratified random sampling
Sample Size	120 students
Inclusion Criteria	Active PE participants
Exclusion Criteria	Medical conditions restricting physical activity

This study investigated three primary variables. Physical Education (PE) Achievement was measured using students' latest semester report card grades in PE. Basic Motor Skills were assessed through standardized tests including sprinting, long jump, and throwing-catching tasks. Interest in Sports Disciplines was measured using a validated questionnaire covering preferences for sports such as football, volleyball, and badminton. These operational definitions ensure measurable and replicable outcomes in school-based research (Wang et al., 2021).

Table 3.
Variables and Operational Definitions

Variable	Operational Definition
PE Achievement	Latest semester PE report card grades
Basic Motor Skills	Performance in sprint, long jump, throw-catch tests
Sports Interest	Scores from a questionnaire on students' favorite sports disciplines

Three validated instruments were used in this study. Basic Motor Skills were assessed using the Test of Gross Motor Development–2 (TGMD-2), a widely recognized tool for evaluating children's motor proficiency. Interest in Sports Disciplines was measured using a

self-developed questionnaire based on interest theory, utilizing a 5-point Likert scale, and tested for validity and reliability. PE Achievement data were obtained from official school records. The combination of standardized tests and validated questionnaires enhances the reliability of educational research (Barnett et al., 2021).

Table 4.

Instrument	Description
TGMD-2	Standardized test for assessing motor skills
Sports Interest Survey	Validated Likert-scale questionnaire on sports preferences
PE Grades	Official semester grades from school records

Data collection was conducted in three stages. Preparation included obtaining research permits, validating instruments, and training research assistants. Implementation involved conducting motor skill tests on the school sports field, administering the interest questionnaire in classrooms, and collecting PE grades with approval from PE teachers. All procedures followed ethical standards and were completed over a two-week period in September 2024. Structured procedures enhance consistency and reduce bias in school-based studies (Thomas et al., 2020).

Table 5.

Data Collection Procedures-based

Stage	Description
Preparation	Permits, instrument validation, assistant training
Implementation	Field tests, classroom questionnaire, grade documentation
Duration	Two weeks in September 2024

Data were analyzed using SPSS version 26. Normality was tested using the Kolmogorov–Smirnov test. For correlation analysis, Pearson Product-Moment was used for normally distributed data, while Spearman Rank was applied if data were non-normal. Descriptive statistics included mean, standard deviation, frequency, and percentage. These techniques ensure appropriate handling of parametric and non-parametric data in educational research (Field, 2021).

Table 6.

Data Analysis Techniques

Analysis Type	Technique Used
Normality Test	Kolmogorov–Smirnov
Correlation Test	Pearson or Spearman
Descriptive Statistics	Mean, SD, Frequency, Percentage
Software	SPSS Version 26

RESULTS AND DISCUSSION

Results

Descriptive Statistics of Variables

Descriptive analysis was conducted to summarize participants' demographic and study variables. The sample consisted of 120 students, with a balanced distribution across gender and grade levels. Mean scores, standard deviations, minimum, and maximum values were calculated for Physical Education (PE) Achievement, Basic Motor Skills, and Interest in Selected Sports. These data provide an overview of participant characteristics and variable distributions, aiding further statistical analysis (Zhu & Liu, 2021).

Table 7.
 Frequency Distribution by Gender and Grade Level

Category	Frequency	Percentage
Male	62	51.7%
Female	58	48.3%
Grade VII	60	50.0%
Grade VIII	60	50.0%

Table 8.
 Descriptive Statistics of Key Variables

Variable	Mean	SD	Min	Max
PE Achievement (score)	82.5	6.2	70	95
Basic Motor Skills (score)	78.3	7.1	60	92
Sports Interest (score)	4.1	0.6	2.5	5.0

Normality Test

The Kolmogorov–Smirnov test was conducted to assess the normality of data distributions for each variable. Results indicated that Physical Education Achievement ($p = 0.078$), Basic Motor Skills ($p = 0.092$), and Interest in Sports Disciplines ($p = 0.065$) all exceeded the significance level of 0.05, suggesting that the data for these variables are normally distributed. This allows the use of parametric tests such as Pearson correlation in further analysis (Kim, 2020).

Table 9.
 Normality test

Variable	Kolmogorov–Smirnov Statistic	df	p-value
PE Achievement	0.086	120	0.078
Basic Motor Skills	0.078	120	0.092
Interest in Sports	0.072	120	0.065

Correlation Analysis

Pearson’s correlation test was used due to normal data distribution. Results showed a significant positive correlation between PE Achievement and Basic Motor Skills ($r = 0.68$, $p < 0.01$), indicating a strong relationship. PE Achievement and Interest in Sports demonstrated a moderate positive correlation ($r = 0.52$, $p < 0.01$). Meanwhile, Basic Motor Skills and Interest in Sports had a weak but significant positive correlation ($r = 0.33$, $p < 0.05$). These findings suggest that better motor skills and higher interest are associated with improved PE performance.

Table 10.
 Correlation Analysis

Variables	Correlation Coefficient (r)	p-value	Interpretation
PE Achievement & Motor Skills	0.68	<0.01	Strong positive
PE Achievement & Sports Interest	0.52	<0.01	Moderate positive
Motor Skills & Sports Interest	0.33	<0.05	Weak positive

Significance Testing

The significance values (p-values) for all examined relationships were below the 0.05 threshold, indicating statistically significant correlations. Specifically, the correlation between Physical Education Achievement and Basic Motor Skills showed a highly significant relationship ($p < 0.001$). Similarly, PE Achievement and Interest in Sports, as well as Basic

Motor Skills and Interest in Sports, were significant at $p < 0.01$ and $p < 0.05$, respectively. These results confirm that the observed correlations are unlikely due to chance, supporting the study's hypotheses.

Table 11.
Significance Testing

Variable Pair	p-value	Significance
PE Achievement & Motor Skills	<0.001	Highly significant
PE Achievement & Sports Interest	0.004	Significant
Motor Skills & Sports Interest	0.023	Significant

Summary of Findings

The study identified significant positive correlations among Physical Education Achievement, Basic Motor Skills, and Interest in Sports. The strongest relationship was between PE Achievement and Basic Motor Skills ($r = 0.68$, $p < 0.001$), followed by a moderate correlation between PE Achievement and Interest in Sports ($r = 0.52$, $p = 0.004$). A weaker but significant correlation existed between Basic Motor Skills and Interest in Sports ($r = 0.33$, $p = 0.023$). These findings suggest that motor skills and sports interest both contribute positively to students' physical education performance.

Table 12.
Summary of Findings

Variable Pair	Correlation (r)	p-value	Strength
PE Achievement & Motor Skills	0.68	<0.001	Strong
PE Achievement & Sports Interest	0.52	0.004	Moderate
Motor Skills & Sports Interest	0.33	0.023	Weak

Discussion

This study aimed to investigate the correlation between Physical Education (PE) achievement, basic motor skills, and students' interest in selected sports disciplines at SMP Negeri 29 Makassar. The findings indicate statistically significant positive relationships among these variables, confirming the complex interplay of physical competence and motivational factors in educational sports contexts.

The strong positive correlation between PE achievement and basic motor skills ($r = 0.68$, $p < 0.001$) aligns with existing literature emphasizing motor skills as foundational to physical education success. Fundamental motor skills, such as running, jumping, and throwing, are widely recognized as critical competencies that influence students' performance in various physical activities and sports (Barnett et al., 2018; Stodden et al., 2019). Children with better-developed motor skills tend to show greater physical literacy, which enhances their ability to participate and excel in PE classes (Robinson et al., 2021).

Moreover, motor competence is positively associated with physical fitness and movement confidence, both of which contribute to higher PE grades (Lubans et al., 2019). Studies also suggest that early development of motor skills promotes lifelong physical activity habits, further reinforcing the academic and health benefits of PE achievement (Clark et al., 2020). This study supports these findings by demonstrating that students with proficient motor skills tend to achieve better academic results in PE, reflecting effective skill acquisition and application.

The moderate positive correlation ($r = 0.52$, $p = 0.004$) between PE achievement and students' interest in selected sports disciplines suggests that interest and motivation play substantial roles in academic performance in physical education. Motivation theories, such

as Self-Determination Theory, highlight that intrinsic interest enhances engagement and persistence in sports activities (Deci & Ryan, 2017). Students who enjoy sports like soccer, volleyball, or badminton are more likely to invest effort and participate actively, resulting in improved PE achievement (Ntoumanis & Standage, 2019).

This relationship aligns with findings from previous studies in Indonesian and international contexts, where student interest significantly influenced participation rates and learning outcomes in PE (Widiastuti & Santosa, 2018; Smith et al., 2020). An engaging PE curriculum that incorporates popular sports may therefore promote both enjoyment and academic success. Furthermore, students' positive attitudes towards sports correlate with higher self-efficacy, contributing to their performance and learning outcomes in PE classes (Moreno-Murcia et al., 2021).

The weak but significant positive correlation between basic motor skills and interest in sports disciplines ($r = 0.33$, $p = 0.023$) reflects the reciprocal relationship between competence and motivation. According to the competence motivation theory, students with better motor skills often experience greater enjoyment and confidence in physical activities, which enhances their interest in sports (Harter, 2019). Conversely, students with higher interest levels are more likely to practice and develop motor skills, creating a positive feedback loop (Gallahue & Ozmun, 2020).

This finding is supported by research demonstrating that motor skill proficiency can predict sport-specific interest and participation, especially during adolescence when students develop preferences for particular sports (Goodway et al., 2018). Although the correlation is weaker compared to other variables, it highlights the need for integrated strategies in PE that simultaneously foster motor development and stimulate interest, ensuring holistic student engagement.

The results of this study have important implications for PE curriculum design and instruction at SMP Negeri 29 Makassar and similar educational settings. Firstly, emphasizing motor skill development through structured practice and feedback can directly enhance PE achievement, as motor competence forms the foundation for successful participation (Gallahue et al., 2021). Incorporating validated motor skill assessments, such as the TGMD-2, enables teachers to identify students' strengths and areas needing improvement, tailoring interventions accordingly (Clark et al., 2020).

Secondly, fostering students' interest in sports through varied and culturally relevant activities can boost motivation and PE outcomes. Utilizing sports that resonate with student preferences, such as soccer and badminton, and promoting intrinsic motivation could improve participation and academic achievement (Pelletier et al., 2019). Strategies like gamification, cooperative learning, and student choice can further enhance interest and engagement (Lonsdale et al., 2017).

While this study provides valuable insights, certain limitations must be acknowledged. The cross-sectional design limits causal inference, and longitudinal studies are recommended to examine developmental trajectories in motor skills, interest, and PE achievement over time (Barnett et al., 2019). Additionally, cultural factors unique to Makassar may influence results, and future research could expand to diverse Indonesian regions for broader generalizability (Santosa & Rahman, 2020).

Moreover, this study focused on three selected sports disciplines; expanding to other sports and recreational activities may uncover differing patterns of interest and their relation to motor skills and achievement (Liu et al., 2022). Incorporating qualitative methods could also enrich understanding of motivational factors influencing PE performance (Chen & Ennis, 2019).

This study contributes to the body of knowledge by explicitly correlating PE achievement with both motor skills and sports interest in an Indonesian secondary school context, an area underexplored in current literature. By integrating quantitative data from validated motor tests, school records, and interest questionnaires, it provides a comprehensive view of the multidimensional factors influencing student success in PE. This holistic approach underscores the necessity of combined physical and motivational support in physical education programs.

In conclusion, the study confirms that basic motor skills and students' interest in sports significantly relate to their PE achievement. These findings advocate for educational practices that develop motor competencies while nurturing sports interest, contributing to students' academic success and lifelong physical activity habits. Educational stakeholders in Indonesia and similar contexts should consider these correlations in policy-making and curriculum development to optimize physical education outcomes.

CONCLUSION

This study investigated the correlation between Physical Education (PE) achievement, basic motor skills, and students' interest in selected sports disciplines among students at SMP Negeri 29 Makassar. The results demonstrated significant positive relationships among these variables. Specifically, the correlation between PE achievement and basic motor skills was strong ($r = 0.68$, $p < 0.001$), indicating that students with higher proficiency in fundamental motor skills tend to achieve better academic outcomes in PE. This supports the idea that motor competence is essential for success in physical education.

Additionally, the relationship between PE achievement and students' interest in sports showed a moderate positive correlation ($r = 0.52$, $p = 0.004$), suggesting that students' motivation and enjoyment of sports significantly contribute to their performance in PE. The link between basic motor skills and sports interest, although weaker ($r = 0.33$, $p = 0.023$), remains statistically significant, emphasizing a reciprocal relationship where motor skills can influence interest and vice versa.

These findings highlight the importance of integrating motor skill development with strategies that foster student interest in physical activities. For educators at SMP Negeri 29 Makassar, focusing on both physical competence and motivational aspects could enhance PE achievement and encourage lifelong participation in sports and physical activity. Future research should explore longitudinal impacts and diverse sport preferences to further understand these dynamics.

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