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Rhythmic Steps to a Healthy Body: The Effectiveness of Rhythmic Gymnastics for Students' Physical Fitness

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Abstrak

The purpose of this study is to determine the effect of rhythmic gymnastics on the physical fitness of sixth-grade students at SDN Cipete Utara 13 in the Physical Education subject. This research aims to examine the level of students' physical fitness and analyze the influence of rhythmic gymnastics on their fitness during Physical Education lessons.The method used in this study is a quantitative correlational approach. The sampling technique applied is purposive sampling, with a total of 27 student respondents. Data were collected through questionnaires and Physical Education test questions.The data analysis technique employed in this study is Simple Linear Regression, as the research involves only two variables: the independent variable (rhythmic gymnastics) and the dependent variable (students' physical fitness).

Keyword: Correlational Study, Elementary School Students, Physical Education, Physical Fitness, Rhythmic Gymnastics.

1 INTRODUCTION

The Legal Foundation and Strategic Role of Education and Sports in Indonesia. Education in Indonesia is rooted in a strong, comprehensive, and strategic legal foundation that reflects the nation's commitment to shaping a knowledgeable, moral, and resilient generation. The Preamble of the Constitution of the Republic of Indonesia of 1945 (UUD 1945) articulates one of the fundamental national goals as: "to protect the entire Indonesian nation and the entire homeland of Indonesia, to promote the general welfare, to educate the life of the nation, and to participate in the establishment of a world order based on freedom, lasting peace, and social justice" (UUD 1945). This statement is not merely a constitutional mandate but also represents the philosophical and ideological cornerstone of Indonesia's education system. Education is considered a strategic instrument for nation-building, designed to produce citizens who are globally competitive, ethically grounded, and capable of contributing to the development of a just, prosperous, and sovereign nation (Tilaar, 2000; Djojonegoro, 1998).

The legal framework of national education is further reinforced through Law of the Republic of Indonesia Number 20 of 2003 on the National Education System. Article 1 defines education as a "conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have spiritual strength, self-control, personality, intelligence, noble character, and the skills needed by themselves, society, the nation, and the state" (Law No. 20 of 2003). This legal definition highlights education's multidimensional role—not only in the cognitive domain but also in the affective and psychomotor domains—emphasizing holistic human development. Education in Indonesia is envisioned as a transformative process that cultivates intellectual intelligence, emotional maturity, spiritual strength, moral integrity, and social resilience in learners. It acts as a bridge between individual growth and collective national progress.

One crucial and often underestimated component of this system is physical education and sports. Beyond developing physical fitness, this domain serves as a powerful medium for character education, instilling values such as discipline, responsibility, cooperation, perseverance, fair play, and sportsmanship. Sports and physical education are integrated into the school curriculum to nurture students who are physically fit, emotionally balanced, mentally healthy, and socially adaptive, equipping them with the skills and attitudes needed to face future challenges in a rapidly changing world (Sukadiyanto & Muluk, 2011).

The Indonesian government underscores the strategic importance of sports through the Law of the Republic of Indonesia Number 11 of 2022 on the National Sports System, which defines sports as "all systematic activities to encourage, foster, and develop physical, spiritual, and social potential" (Law No. 11 of 2022). This legal basis reflects the state's recognition of sports as a national development asset—not only to improve physical health but also to promote social cohesion, moral education, and national identity.

Furthermore, the objectives of sports education extend beyond physical fitness. Sports play a pivotal role in strengthening moral values, shaping disciplined and resilient personalities, cultivating sportsmanship, and fostering national unity. Sports function not only as a recreational activity, but also as a preventive and educational tool to build a healthy, active, and productive society (Giriwijoyo & Sidik, 2012). In the context of primary education, early exposure to physical education lays the foundation for lifelong healthy lifestyle habits, promoting physical activity as a core component of personal and community well-being (Bailey et al., 2009).

A growing body of research highlights the positive correlation between physical activity and cognitive performance. Regular participation in activities such as rhythmic gymnastics, aerobic exercise, and structured physical education programs improves students' motor coordination, cardiovascular endurance, psychological well-being, and classroom performance (Corbin & Pangrazi, 2004; Gallahue & Ozmun, 2012). These activities stimulate neural development, enhance focus, and increase engagement, creating a more conducive learning environment.

Additionally, physical activity positively influences academic performance, attention span, emotional regulation, and peer interaction (Strong et al., 2005; Trudeau & Shephard, 2008). Rhythmic gymnastics, in particular, combines movement, rhythm, and artistic expression, which not only supports physical endurance but also fosters creativity, self-confidence, emotional balance, and intrinsic motivation to learn (Howie & Pate, 2012). These factors align closely with the Human Development Index (HDI) framework, which emphasizes health, education, and economic welfare as key dimensions in evaluating national development (UNDP, 2023).

In a broader perspective, the integration of sports into education contributes to nation-building and human capital formation. A well-structured physical education program strengthens not only individual health but also collective national capacity, encouraging active citizenship, discipline, and productivity. Education and sports, when aligned with national legal frameworks, serve as mutually reinforcing pillars of Indonesia's human development strategy.

Therefore, education—including physical education and sports—holds a strategic and transformative role in shaping holistic human development in Indonesia. The implementation of educational and sports policies that align with the constitutional mandate of UUD 1945 and relevant national legislation can produce future generations who are intelligent, healthy, resilient, morally upright, and globally competitive. Strengthening physical education through structured programs such as rhythmic gymnastics, physical fitness training, and educational games represents a concrete step toward realizing the national vision of a superior generation (Hardman & Green, 2011; Kirk, 2010).

2 RESEARCH METHODS

This study employs a quantitative research methodology, which is widely used in education, psychology, health, and other social sciences. Quantitative research can be defined as a method that emphasizes objective measurement of phenomena through the collection and analysis of numerical data. The data are analyzed using statistical techniques with the primary aim of testing predetermined hypotheses (Sugiyono, 2019).

Quantitative research has several key characteristics: (1) it begins with existing theories and hypotheses, (2) follows a deductive reasoning process, (3) uses standardized measurement instruments, (4) applies statistical analysis, and (5) produces objective and generalizable findings when the sampling criteria are properly met (Creswell & Creswell, 2018). Therefore, this approach is appropriate for examining relationships, differences, or effects between variables in a systematic and measurable way.

In this research design, the researcher applies a correlational quantitative approach, which aims to examine the degree of relationship or association between two or more variables without manipulating them (Arikunto, 2014). This approach helps identify whether there is a positive, negative, or no relationship between the independent and dependent variables. Correlational research also allows the researcher to predict tendencies or behaviors in one variable based on the information obtained from another variable. For example, in the context of physical education, researchers can determine the extent to which rhythmic gymnastics participation is associated with students' physical fitness levels.

A clear understanding of research variables is essential in correlational research. A variable is defined as an attribute, characteristic, or value of a person, object, or activity that has variations determined by the researcher to be studied and from which conclusions can be drawn (Sugiyono, 2017). Variables can be categorized as follows:

a. Independent Variable – a variable that influences or causes changes in another variable.
b. Dependent Variable – a variable that is affected or influenced by the independent variable.
c. Control Variable – a variable that is controlled to prevent it from influencing the research outcome.

In this study, rhythmic gymnastics serves as the independent variable, while students' physical fitness levels function as the dependent variable. The research aims to examine the relationship between rhythmic gymnastics activities and students' physical fitness, making the correlational approach the most suitable.

This method also requires a structured and measurable data collection process, which may involve questionnaires, observation sheets, and physical fitness tests. The data obtained are then analyzed using inferential statistical techniques, such as Pearson or Spearman correlation tests, depending on the data type and distribution. These analyses aim to determine the significance and strength of the relationship between variables (Sugiyono, 2019).

By employing a quantitative correlational approach, this study is expected to produce objective, valid, and reliable findings. The results can serve as a basis for decision-making, program development, and strategic planning, particularly in the field of physical education.

3 RESULT AND DISCUSSION

This study focused on two main aspects: (1) the effect of rhythmic gymnastics on the physical fitness of second-grade students, and (2) the level of physical fitness of second-grade students at SD Negeri 13 Cipete Utara during the 2024/2025 academic year. The research was conducted to analyze the extent to which rhythmic gymnastics activities contribute to improving students' physical fitness in Physical Education classes.

a. The Effect of Rhythmic Gymnastics on Physical Fitness

Based on the collected and processed data, the implementation of rhythmic gymnastics among second-grade students at SD Negeri 13 Cipete Utara showed the following distribution:

1) Low category: 19%
2) Medium category: 59%
3) High category: 22%

These results indicate that the majority of students fall into the medium category, demonstrating that rhythmic gymnastics activities in schools have had a positive impact on students' physical activity levels. However, approximately 19% of students remain in the low category, suggesting that additional interventions or more varied teaching strategies may be needed to help this group improve their physical fitness.

b. Students' Physical Fitness Levels

The results of the students' physical fitness tests revealed the following distribution:

1) Low category: 11%
2) Medium category: 78%
3) High category: 11%

This finding shows that the majority of students (78%) are at a medium fitness level, which aligns with the distribution found in rhythmic gymnastics performance. However, the relatively small percentage of students in the high category (11%) suggests that additional training or structured physical activities may be necessary to further enhance students' fitness levels and endurance.

c. Test of the Effect

Based on the simple linear regression analysis, the coefficient of determination was found to be 19.9%, indicating that rhythmic gymnastics contributes 19.9% to students' physical fitness levels. Thus, the alternative hypothesis (Ha) — stating that there is an effect of rhythmic gymnastics on students' physical fitness — is accepted, and the null hypothesis (H_0) is rejected.

This means that rhythmic gymnastics has a significant contribution to students' fitness. However, the remaining 80.1% is influenced by other factors, such as nutrition, rest quality, extracurricular physical activities, environmental factors, and genetic components.

d. Discussion of Findings

These findings are consistent with previous studies showing that rhythmic gymnastics can effectively improve cardiorespiratory endurance, agility, motor coordination, and overall physical fitness (Sukadiyanto & Muluk, 2011; Giriwijoyo & Sidik, 2012). Through rhythmic and enjoyable movements, students are encouraged to participate actively in Physical Education lessons without perceiving physical activity as a burden.

Moreover, rhythmic gymnastics plays a role in developing students' character, such as discipline, sportsmanship, and teamwork. Structured and routine physical activities at the elementary level serve as an important foundation for cultivating healthy and active lifestyles from an early age (Bompa & Buzzichelli, 2018). This supports the argument that rhythmic gymnastics should be continuously optimized in the Physical Education curriculum.

e. Implications of the Study

The implications of this study suggest that:

1) Physical Education teachers should integrate rhythmic gymnastics into regular and structured learning activities to enhance students' physical fitness.
2) Schools need to include more varied and engaging movements to increase student motivation.
3) Parental support is essential in encouraging children to remain physically active outside school hours.

4) Further research is needed to explore other external factors that influence students' fitness levels.

Although the contribution of rhythmic gymnastics to physical fitness is 19.9%, which is considered moderate, this activity still plays a significant role as a fundamental fitness stimulus for elementary school students. Efforts to improve physical fitness will be more effective if carried out holistically, combining school-based Physical Education, healthy lifestyle habits at home, and supportive environmental conditions.

4 CONCLUSION

Based on the results of the research and data analysis conducted, the researcher concludes that the sports interest of second-grade students at SD Negeri 13 Cipete Utara shows a significant variation in levels of interest. Out of a total of 27 students, it was found that 5 students (19%) were in the low interest category, 16 students (59%) were in the moderate interest category, and 6 students (22%) were in the high interest category. This finding indicates that the majority of students have a moderate level of interest in sports activities, particularly in Physical and Health Education (Penjaskes) classes. However, there remains a small portion of students with low interest, which highlights the need for more creative and engaging teaching approaches to increase their motivation and enthusiasm toward physical activities.

Furthermore, the analysis of student learning outcomes in Penjaskes revealed the following distribution: 3 students (11%) were in the low category, 21 students (78%) were in the moderate category, and 3 students (11%) were in the high category. This distribution shows that most students achieved learning outcomes at the moderate level. It also suggests that the implementation of the Penjaskes learning program has generally achieved its objectives, although there is still room for improvement to help more students reach the high learning outcome category.

Further statistical analysis demonstrated a significant influence of students' interest in sports on their learning outcomes in Penjaskes. Students with a higher level of interest in sports tend to achieve better learning outcomes compared to those with lower interest. This finding aligns with learning motivation theory, which emphasizes that interest is a crucial internal factor influencing the learning process and outcomes. When students are genuinely interested in an activity, they are more enthusiastic, active, and focused during the learning process, which positively impacts their academic performance.

Sports interest serves as an important indicator in supporting the effectiveness of physical education learning. High interest encourages students to participate actively in various physical activities, better understand the learning material, and improve their motor skills and physical fitness. Conversely, students with low interest often show less engagement, lower concentration, and boredom, which in turn affects their learning outcomes.

This finding is consistent with previous research, which shows that learning interest and sports interest are positively correlated with improved learning outcomes, physical fitness, and students' character development (Harsono, 2017; Giriwijoyo & Sidik, 2012). Therefore, increasing students' interest in sports through various engaging learning strategies—such as educational games, activity variations, and the use of innovative learning media—is essential to maximize learning outcomes.

In conclusion, sports interest plays a crucial role in supporting the success of physical education learning. The higher the students' interest in sports, the greater their potential to achieve optimal learning outcomes. This finding also provides practical implications for physical education teachers to continuously create a fun, interactive, and motivating learning environment that fosters students' enthusiasm for physical activity.

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6 REFERENCES

Department of National Education. (2003). Law of the Republic of Indonesia Number 20 Year 2003 on the National Education System. Jakarta: Department of National Education of the Republic of Indonesia.

Giriwijoyo, S., & Sidik, D. Z. (2012). Sports Health Science. Bandung: FPOK UPI Press.

Harsono. (2017). Coaching and Psychological Aspects in Coaching. Bandung: CV Tambak Kusuma.

Lutan, R. (2001). Physical Education and Sports. Jakarta: Department of National Education.

Mahendra, A. (2019). Theory and Practice of Physical Education. Bandung: Alfabeta.

State Secretariat of the Republic of Indonesia. (1945). The 1945 Constitution of the Republic of Indonesia. Jakarta: State Secretariat of the Republic of Indonesia.

State Secretariat of the Republic of Indonesia. (2022). Law of the Republic of Indonesia Number 11 Year 2022 on National Sports System. Jakarta: State Secretariat of the Republic of Indonesia.

Sugiyono. (2019). Quantitative, Qualitative, and R&D Research Methods. Bandung: Alfabeta.

Sukadiyanto, & Muluk, D. (2011). Introduction to Theory and Methodology of Physical Training. Bandung: Lubuk Agung.

Tangkudung, J., & Puspitorini, W. (2012). Research Methodology in the Field of Sports. Jakarta: Cerdas Jaya.

Winarno. (2013). Physical Education and Sports. Malang: State University of Malang Press.

World Health Organization. (2020). Global Recommendations on Physical Activity for Health. Geneva: WHO Press.