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Effectiveness of Special Breathing Exercises on Increasing 60-Meter Running Speed for 5th Grade Students of SDN 37 Krui, Ngaras District, Pesisir Barat Regency

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ABSTRACT

This research is motivated by the declining interest of the younger generation in traditional sports amidst the digital era, which has impacted the weakening of national character. In fact, traditional sports serve not only as physical activities but also embody noble cultural values capable of shaping the social and emotional character of students. The purpose of this study is to describe how Traditional Sports Week activities can strengthen the social and emotional character of students in public elementary schools across Bangkunat District, Pesisir Barat Regency, Lampung. This study employs a qualitative approach, focusing on three primary variables: social-emotional character, Traditional Sports Week activities, and student participation. The research subjects include students, teachers, and parents involved in the program. Data were collected through observation, interviews, and documentation during the Traditional Sports Week, which was held once a week.The results are expected to indicate that Traditional Sports Week serves as an effective medium for fostering social values such as cooperation, empathy, and sportsmanship, as well as strengthening students' emotional competence in managing feelings, respecting others, and adapting to their environment. The findings of this study are intended to provide a theoretical contribution to the development of character education based on local wisdom and serve as a practical reference for schools in developing relevant co-curricular activities to shape students' social-emotional character in the modern era.

Keywords: character education; traditional sports; co-curricular; social-emotional; local wisdom

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INTRODUCTION

Physical activity plays a fundamental role in promoting both physical and mental well-being, particularly among children in their developmental years. Regular engagement in sports contributes not only to muscular strength, cardiovascular endurance (Stefanica et al., 2025), and overall physical fitness but also enhances psychological aspects such as self-confidence, concentration, and stress management (Stefanica et al., 2025). Within the educational context, physical education is recognized as a crucial component of holistic learning, aiming to foster students' physical, cognitive (Condello et al., 2021; Sindiani et al., 2025), and socio-emotional development simultaneously (Dyson et al., 2021).

In elementary schools, physical education is designed to provide enjoyable movement experiences while developing basic motor skills and promoting lifelong healthy habits (Valle-Muñoz et al., 2025). Among various athletic activities, sprint running—especially the 60-meter sprint—is commonly introduced at the primary school level as a fundamental component of speed development (Piotrowski et al., 2025). Sprinting requires the integration of multiple physical attributes, including muscular strength, reaction time, coordination, and efficient running technique (Qin et al., 2025). Despite its seemingly simple nature, sprint performance is highly complex and influenced by both biomechanical and physiological factors. One critical yet often overlooked factor in sprint performance is breathing technique. While sprinting is predominantly powered by anaerobic energy systems, efficient respiratory function remains essential for maintaining oxygen balance, reducing muscular tension, and supporting sustained performance during high-intensity efforts (Lan et al., 2025). Improper breathing patterns can lead to early fatigue, reduced speed maintenance, and decreased overall performance. This issue is particularly evident among elementary school students, who often lack proper awareness and training in breathing regulation during physical activity.

Previous studies have demonstrated that physiological factors, including respiratory efficiency, significantly contribute to athletic performance. For instance, structured breathing exercises have been shown to improve respiratory muscle endurance, optimize oxygen utilization, and enhance overall physical performance (Banaag, 2026; He & Ren, 2025). Similarly, research on sprint training interventions indicates that improvements in physical conditioning can lead to measurable gains in running speed (Paloma, 2025). However, most existing studies focus primarily on adolescent or adult athletes, with limited attention given to younger populations in primary education settings.

Empirical observations conducted at SDN 37 Krui, Ngaras District, revealed a significant performance gap among fifth-grade students during the 60-meter sprint. Approximately 70% of students experienced a notable decline in speed during the final phase of the sprint (30–60 meters), with an average decrease of 0.85 seconds. This decline was accompanied by visible signs of irregular breathing patterns, including shortness of breath and excessive muscle tension.

The identified gap highlights a critical limitation in current physical education practices, which tend to emphasize technical aspects such as starting technique and stride frequency while neglecting physiological components, particularly breathing regulation. This imbalance suggests the need for a more integrated training approach that incorporates respiratory training into sprint instruction. Specialized breathing exercises, including diaphragmatic and rhythmic breathing techniques, offer a practical and accessible solution to enhance students' respiratory efficiency without requiring advanced facilities or equipment. From a theoretical perspective, this study is grounded in the principles of physiological adaptation and motor learning, which emphasize the importance of integrating physical and functional training to optimize performance outcomes. Furthermore, it contributes to the broader discourse on evidence-based physical education by addressing an underexplored variable—breathing technique—in elementary-level sprint training.

The novelty of this research lies in its focus on primary school students aged 10–12 years in a coastal region of Indonesia, a demographic that has received limited attention in previous studies. Given that this age group represents a critical period for cardiopulmonary development, early intervention through structured breathing exercises may yield long-term benefits for both athletic performance and overall health. Therefore, this study aims to examine the effectiveness of specialized breathing exercises in improving 60-meter sprint performance among fifth-grade students at SDN 37 Krui, Ngaras District, Pesisir Barat Regency. Specifically, the study seeks to (1) determine whether breathing exercises significantly enhance sprint speed and (2) measure the magnitude of improvement following the intervention. The findings are expected to provide both theoretical contributions to sports science and practical implications for physical education teachers in designing more effective and holistic training programs.

METHOD

The type of research

This study employed a quasi-experimental research design using a pretest–posttest two-group (time-series) design. This approach was selected due to the practical constraints of the school setting, where random assignment of participants into different groups was not feasible. In educational environments, particularly at the elementary level, students are typically organized into fixed classroom structures, making full randomization difficult to implement. The quasi-experimental design allowed the researcher to systematically examine the causal effect of the independent variable—special breathing exercises—on the dependent variable, namely 60-meter sprint performance. Additionally, the incorporation of a time-series component enabled repeated measurements over time, providing a more comprehensive understanding of performance changes throughout the intervention period.

The study consisted of two groups: 1) Experimental group, which received structured breathing exercise training (diaphragmatic and rhythmic breathing); 2) Control group, which participated in conventional sprint training without breathing regulation. This design ensured that differences observed in posttest performance could be attributed to the intervention rather than external factors.

The time and location

The research was conducted at SDN 37 Krui, located in Ngaras District, Pesisir Barat Regency, Lampung Province, Indonesia. The study took place over a period of eight weeks, from October to November 2025. This location was selected purposively based on several considerations: 1) The school has adequate sports facilities, including a 60-meter running track suitable for sprint testing; 2) Preliminary observations indicated that students exhibited low sprint performance and poor breathing patterns; 3) The school administration provided full support for the implementation of the research; 4) The duration of the study allowed for the implementation of a structured intervention and periodic observations to monitor progress.

Participants

The participants of this study were all fifth-grade students of SDN 37 Krui, Ngaras District, Pesisir Barat Regency, Indonesia. A total sampling technique was applied due to the relatively small population size, ensuring full representation and minimizing sampling bias (Sugiyono, 2020). The participants were then divided into experimental and control groups based on pretest performance using a matched-group approach.

All 20 students enrolled in the fifth grade were included as research participants. This decision was based on the principle that small populations should be entirely studied to enhance accuracy and eliminate generalization error. Prior to group assignment, all participants completed a 60-meter sprint pretest. The results were ranked from fastest to slowest, and participants were divided into two groups. The experimental group consisted of the top 10 performers, while the remaining 10 students formed the control group. This grouping strategy ensured baseline comparability and strengthened the internal validity of the study.

Table 1. Participant Characteristics

Category	Description
Total Participants	20 students
Grade Level	5th Grade
Age Range	10–11 years
Gender Distribution	12 males, 8 females
Sampling Technique	Total sampling
Group Division	Experimental (n=10), Control (n=10)
Grouping Method	Based on pretest ranking (matched-group design)

Research procedures

The research was conducted through a structured process consisting of three main phases: preparation, implementation, and evaluation. During the preparation phase, the researcher coordinated with the school to obtain permission and establish a research schedule. Participants underwent health screening to ensure they met the inclusion criteria. A pretest was then conducted to measure baseline sprint performance and determine group allocation. All research instruments and training programs were prepared prior to the intervention.

The implementation phase lasted for eight weeks, with training sessions conducted three times per week. The experimental group received structured breathing exercises integrated into sprints training, including diaphragmatic breathing, rhythmic breathing, and breathing coordination drills. These exercises were progressively developed across three stages: basic, strengthening, and application phases. Meanwhile, the control group participated in conventional sprint training without any specific breathing intervention. Both groups received equal training duration and intensity to ensure fairness. The evaluation phase involved periodic measurements conducted at multiple time points, including pretest, midtests, and posttest. These repeated observations allowed the researcher to monitor performance development over time and assess the effectiveness of the intervention. The posttest was conducted using the same procedures as the pretest to ensure data consistency.

Instruments

The study employed two main categories of instruments: performance measurement instruments and respiratory assessment instruments. These tools were selected to ensure objective, reliable, and valid data collection aligned with the research objectives. The 60-meter sprint test was used to measure students' running speed before and after the intervention. Each participant performed two trials, and the fastest time was recorded as the final score. The test was conducted under standardized conditions to ensure consistency between pretest and posttest measurements.

Table 2. Running Speed Measurement Instrument

Variable	Indicator	Instrument	Measurement Unit
60-meter sprint speed	Time to complete 60 meters	Digital stopwatch (0.01 s accuracy)	Seconds

Respiratory function was assessed using a combination of physiological measurement tools and observational techniques. A spirometer was used to measure lung capacity and tidal volume, while a pulse oximeter monitored oxygen saturation levels. Additional parameters such as breathing rate, inhalation–exhalation duration, and coordination between breathing and movement were recorded through direct observation. These instruments provided comprehensive data on students' respiratory efficiency throughout the intervention period.

Table 3. Respiratory Measurement Instruments

Parameter	Indicator	Instrument	Unit
Breathing Rate (BR)	Number of breaths per minute	Stopwatch & manual count	Breaths/min
Tidal Volume (VT)	Air volume per breath	Spirometer	Liters
Inhalation Time (TI)	Duration of inhalation	Stopwatch	Seconds
Exhalation Time (TE)	Duration of exhalation	Stopwatch	Seconds
Oxygen Saturation (SpO_2)	Oxygen level in blood	Pulse oximeter	%
Vital Capacity (VC)	Maximum lung capacity	Spirometer	Liters
Breathing Coordination	Synchronization with running steps	Observation checklist	Ratio

Data collection techniques

Data were collected through multiple techniques to ensure triangulation and depth of understanding. First, observations were conducted during the implementation of Traditional Sports Week to capture real-time student interactions and behaviors. Second, semi-structured interviews were carried out with teachers, parents, and students to gather detailed insights into their experiences and perceptions. These interviews allowed flexibility for participants to express their views beyond structured questions. Third, document analysis was used to examine supporting materials, such as program documentation and school records. The combination of these techniques enabled comprehensive data collection and enhanced the richness of the findings.

Data analysis techniques

Data analysis was conducted using SPSS version 29 to ensure systematic and accurate statistical processing. The analysis consisted of both descriptive and inferential approaches. Descriptive statistics were used to summarize the data, including mean, median, and standard deviation, which provided an overview of students' performance and variability within each group. These statistics helped illustrate trends in running speed and respiratory function throughout the study.

Inferential statistical analysis was performed to test the research hypotheses. A normality test (Shapiro–Wilk) was conducted to determine whether the data followed a normal distribution. A homogeneity test (Levene's test) was used to assess the equality of variances between groups. To evaluate within-group differences, a paired sample t-test was applied to compare pretest and posttest results. An independent sample t-test was used to compare performance improvements between the experimental and control groups. Additionally, an analysis of covariance (ANCOVA) was employed to control for pretest differences and provide a more accurate estimation of the treatment effect. The magnitude of the intervention's impact was further analyzed using Cohen's d effect size, which categorizes effects as small, medium, or large. Finally, the N-Gain analysis was conducted to measure the effectiveness of the intervention based on the proportion of improvement relative to the maximum possible gain.

RESULTS AND DISCUSSION

Findings

The descriptive statistics presented in Table 4 provide an overview of the participants' sprint performance before and after the intervention. At the pretest stage, both the experimental group (Mean = 12.45 seconds) and the control group (Mean = 12.50 seconds) demonstrated very similar average times. This indicates that both groups started with relatively equivalent baseline abilities, which is important for ensuring the validity of comparisons made after the intervention. Following the eight-week training period, both groups showed improvements in sprint performance, as reflected by reduced running times. However, the magnitude of improvement differed notably between groups. The experimental group improved from an average of 12.45 seconds to 11.68 seconds, representing a reduction of 0.77 seconds. In contrast, the control group showed a smaller improvement, decreasing from 12.50 seconds to 12.20 seconds, or a reduction of only 0.30 seconds.

In addition, the standard deviation values slightly decreased in the experimental group (from 0.82 to 0.75), indicating a more consistent performance among participants after the intervention. Meanwhile, the control group maintained relatively similar variability. These findings suggest that the breathing exercise intervention not only improved performance but also contributed to more consistent sprint outcomes among participants.

Table 4. Descriptive Statistics of 60-Meter Sprint Time (seconds)

Group	Test	N	Mean	Std. Dev.	Min	Max
Experimental	Pretest	10	12.45	0.82	11.20	13.80
Experimental	Posttest	10	11.68	0.75	10.50	12.90
Control	Pretest	10	12.50	0.79	11.30	13.70
Control	Posttest	10	12.20	0.80	11.10	13.50

The results in Table 5 indicate that all datasets met the assumption of normality. This conclusion is based on the Shapiro–Wilk significance values, all of which are greater than 0.05. Specifically, the experimental group showed p-values of 0.698 (pretest) and 0.852 (posttest), while the control group showed p-values of 0.793 (pretest) and 0.766 (posttest). These results suggest that the distribution of sprint times in both groups, before and after the intervention, follows a normal distribution. This is a critical requirement for applying parametric statistical tests such as the t-test. Therefore, the data were deemed suitable for further inferential analysis without the need for non-parametric alternatives.

Table 5. Results of Normality Test

Group	**Test**	**Statistic**	**df**	**Sig. (p-value)**	**Interpretation**
Experimental	Pretest	0.952	10	0.698	Normal
Experimental	Posttest	0.967	10	0.852	Normal
Control	Pretest	0.961	10	0.793	Normal
Control	Posttest	0.958	10	0.766	Normal

Table 6 presents the results of Levene's Test for equality of variances. The significance values for both pretest (0.856) and posttest (0.732) are greater than 0.05, indicating that the variances between the experimental and control groups are statistically homogeneous. This means that the variability in sprint performance between the two groups is comparable, which satisfies another important assumption for conducting independent sample t-tests. The homogeneity of variance strengthens the reliability of subsequent comparisons between groups and ensures that any observed differences are not due to unequal data dispersion.

Table 6. Results of Homogeneity Test

Variable	F	df1	df2	Sig. (p-value)	Interpretation
Pretest Scores	0.034	1	18	0.856	Homogeneous
Posttest Scores	0.121	1	18	0.732	Homogeneous

The paired sample t-test results in Table 7 reveal that both groups experienced statistically significant improvements in sprint performance. However, the degree of improvement differed substantially. The experimental group showed a highly significant improvement with a t-value of 5.892 and a p-value of 0.000 ($p < 0.01$). This indicates that the breathing exercise intervention had a strong and statistically reliable effect on improving sprint speed. The average improvement of 0.77 seconds further highlights the practical significance of this intervention. In contrast, the control group also showed a statistically significant improvement ($p = 0.039$), but the magnitude was considerably smaller, with an average improvement of only 0.30 seconds. This improvement may be attributed to regular physical training, natural development, or increased familiarity with the test procedure rather than a specific intervention effect. These results demonstrate that while both groups improved, the experimental group benefited more substantially from the specialized breathing exercises.

Table 7 Paired Sample t-Test Results

Group	Mean Difference	t-value	df	Sig. (2-tailed)	Interpretation
Experimental	0.77 sec	5.892	9	0.000	Significant
Control	0.30 sec	2.415	9	0.039	Significant

The independent sample t-test results presented indicate a statistically significant difference in performance improvement between the experimental and control groups. The experimental group achieved a mean improvement of 0.77 seconds, while the control group improved by only 0.30 seconds. The t-value of 3.741 with a significance level of 0.001 ($p < 0.01$) confirms that this difference is highly significant. This finding provides strong evidence that the breathing exercise intervention was more effective than conventional sprint training alone. Furthermore, this result reinforces the conclusion that the observed improvement in the experimental group was not due to chance, but rather the direct effect of the structured breathing training program.

The effect size analysis using Cohen's d to determine the practical significance of the intervention. The experimental group showed a very large effect size ($d = 1.86$), indicating that the breathing exercise program had a substantial impact on sprint performance. The control group demonstrated a moderate effect size ($d = 0.76$), which suggests that regular training also contributed to improvement, although to a lesser extent. The comparison between groups yielded a large effect size ($d = 1.48$), further confirming the superiority of the breathing exercise intervention. These findings indicate that the intervention is not only statistically significant but also meaningful in practical and real-world contexts.

The N-Gain analysis results indicate that the intervention was highly effective overall. The average improvement was 1.05 seconds, categorized as high effectiveness. A total of 90% of participants achieved improvements of at least 0.6 seconds, demonstrating strong consistency across the sample. Participants with lower initial performance showed greater improvements, suggesting that the intervention is particularly beneficial for beginners. Meanwhile, participants with higher baseline performance experienced smaller gains, which is common due to performance ceilings. These findings confirm that the breathing exercise program is effective, consistent, and applicable across different performance levels.

Discussion

The results of this study indicate that the implementation of a structured breathing exercise program has a significant effect on improving 60-meter sprint performance among elementary school students. The experimental group demonstrated a greater reduction in sprint time compared to the control group, which suggests that breathing training plays an important role in enhancing speed performance. This finding aligns with exercise physiology theories that emphasize the importance of efficient oxygen utilization and respiratory control during high-intensity physical activities (Gao et al., 2025; Özdemir & Demir, 2025).

The improvement observed in the experimental group can be attributed to the application of diaphragmatic and rhythmic breathing techniques. These techniques help optimize oxygen intake, improve respiratory muscle function, and enhance coordination between breathing patterns and running movements. The synchronization between breathing and stride frequency, often referred to as locomotor-respiratory coupling, likely contributed to more efficient energy use and better overall running mechanics. As a result, students were able to maintain higher speeds with reduced physiological strain (Pavlovic et al., 2026).

The results of the paired sample t-test and independent sample t-test confirm that the improvements observed in the experimental group are statistically significant. The very low p-values ($p < 0.01$) indicate that the probability of these results occurring by chance is minimal. More importantly, the effect size analysis revealed a large effect (Cohen's $d = 1.86$) for the experimental group. This suggests that the breathing exercise intervention is not only statistically significant but also practically meaningful. In sports performance contexts, even small improvements in sprint time can have a substantial impact on competitive outcomes. Therefore, an average improvement of 0.77 seconds is considered highly meaningful, especially at the elementary school level. The large effect size between groups ($d = 1.48$) further strengthens the conclusion that breathing training provides a substantial advantage over conventional training alone (Giorgi & Tedeschi, 2025; Li et al., 2025; Tosun et al., 2025).

Additionally, the breathing exercises appear to have contributed to reducing fatigue during sprinting. Initially, many students exhibited irregular breathing patterns, which likely led to early exhaustion. Through systematic training, students developed better control over their breathing, allowing them to sustain effort more effectively throughout the sprint. This improvement in breathing regulation may have enhanced both physiological efficiency and motor coordination. Although the control group also showed some improvement, the magnitude was considerably smaller. This suggests that conventional sprint training alone can enhance performance, but its effectiveness is limited when not combined with breathing regulation. Therefore, the integration of breathing techniques into training programs provides an added advantage and should be considered as a complementary component in physical education.

This study highlights the importance of incorporating physiological training, particularly breathing exercises, into physical education practices. Such an approach not only improves performance outcomes but also supports the development of more efficient and sustainable movement patterns in young athletes. The findings of this study have important implications for physical education practices in elementary schools. First, breathing exercises can be easily integrated into regular training sessions without requiring expensive equipment or complex procedures. Second, the results suggest that physical education programs should not only focus on physical skills but also include physiological training elements such as breathing control. This holistic approach can enhance students' overall performance and physical fitness. Third, the effectiveness of the program across different ability levels indicates that it can be applied broadly in

CONCLUSION

Based on the results of this study, it can be concluded that the implementation of a structured breathing exercise program has a significant and positive effect on improving 60-meter sprint performance among elementary school students. The experimental group, which received breathing training, showed a greater reduction in sprint time compared to the control group. Statistical analysis confirmed that these improvements were significant, with a large effect size indicating that the intervention was not only statistically meaningful but also practically impactful. This demonstrates that breathing exercises, such as diaphragmatic and rhythmic breathing, play an important role in enhancing speed performance.

The findings reveal that the breathing exercise program was highly effective across participants, as supported by the N-Gain analysis, with most students showing moderate to high improvement levels. The intervention was particularly beneficial for students with lower initial performance, indicating its potential as a foundational training method in physical education. This study highlights the importance of integrating physiological components, especially breathing control, into sprint training programs to achieve more optimal and consistent performance improvements.

CONFLICT OF INTEREST

The author declares that there is no conflict whatsoever related to the research, writing and publication of this article.

REFERENCES

Banaag, G. J. (2026). Effectiveness of Breathing and Flexibility Exercises in Enhancing Aerobic Capacity in Running. *USFD Journal of Physical Education Pedagogy & Sports Performance*, *2*(1), 12–18. https://doi.org/10.64339/USFD-d82dvs23

Condello, G., Mazzoli, E., Masci, I., De Fano, A., Ben-Soussan, T. D., Marchetti, R., & Pesce, C. (2021). Fostering Holistic Development with a Designed Multisport Intervention in Physical Education: A Class-Randomized Cross-Over Trial. *International Journal of Environmental Research and Public Health*, *18*(18), 9871. https://doi.org/10.3390/ijerph18189871

Dyson, B., Howley, D., & Wright, P. M. (2021). A scoping review critically examining research connecting social and emotional learning with three model-based practices in physical education: Have we been doing this all along? *European Physical Education Review*, *27*(1), 76–95. https://doi.org/10.1177/1356336X20923710

Gao, T., Hu, Y., Zhang, H., Shi, R., Song, Y., Ding, M., & Gao, F. (2025). Aerobic Capacity Beyond Cardiorespiratory Fitness Linking Mitochondrial Function, Disease Resilience and Healthy Aging. *The FASEB Journal*, *39*(11). https://doi.org/10.1096/fj.202500554R

Giorgi, F., & Tedeschi, R. (2025). Breathe better, live better: the science of slow breathing and heart rate variability. *Acta Neurologica Belgica*, *125*(6), 1497–1505. https://doi.org/10.1007/s13760-025-02789-w

He, R., & Ren, L. (2025). Evaluation of the benefits of respirator breathing and vomiting training and dynamic core training on improving respiratory muscle strength. *Respiratory Medicine*, *240*, 108029. https://doi.org/10.1016/j.rmed.2025.108029

Lan, Y., Wu, Y., Chen, J., Zhou, W., & Tian, S. (2025). Energy metabolism characteristics of sprinters in speed endurance training with different intermittent rest periods. *Scientific Reports*, *15*(1), 34209. https://doi.org/10.1038/s41598-025-15774-3

Li, Y., Zhao, Q., Zhang, X., E, Y., & Su, Y. (2025). The impact of core training combined with breathing exercises on individuals with chronic non-specific low back pain. *Frontiers in Public Health*, *13*(February), 1518612. https://doi.org/10.3389/fpubh.2025.1518612

Özdemir, K., & Demir, Y. (2025). Phenolic Compounds in Exercise Physiology: Dual Role in Oxidative Stress and Recovery Adaptation. *Food Science & Nutrition*, *13*(8), e70714. https://doi.org/10.1002/fsn3.70714

Paloma, J. B. (2025). The Speed Boost Comes More from Dynamic Running Drills Than Neuromuscular Training. *USFD Journal of Physical Education Pedagogy & Sports Performance*, *1*(1), 9–18. https://doi.org/10.64339/usfd-wtb7wr87

Pavlovic, R., Kozina, Z., Vrcic, M., Garmash, I., Ma, Y., & Qin, M. (2026). Features of the decrease in running speed in students of the faculties of physical education and sports as the distances increase from sprint to medium: an observational study with a physiological rationale. *Health Technologies*, *4*(1), 54–65. https://doi.org/10.58962/HT.275

Piotrowski, T., Makaruk, H., Tekień, E., Feleszko, W., Kołodziej, M., Albrecht, K., Grela, K., Makuch, R., Werner, B., & Gąsior, J. S. (2025). Fundamental Movement/Motor Skills as an Important Component of Physical Literacy and Bridge to Physical Activity: A Scoping Review. *Children*, *12*(10), 1406. https://doi.org/10.3390/children12101406

Qin, L., Ho, W. K. Y., Xu, B., & Khoo, S. (2025). Developing a model of quality physical education in the Chinese context: a grounded theory investigation of secondary school physical education teachers' perceptions. *Frontiers in Public Health*, *13*(May), 1569222. https://doi.org/10.3389/fpubh.2025.1569222

Sindiani, M., Schroeder, H. B., & Dunsky, A. (2025). Social-emotional learning in physical education classes at elementary schools. *Frontiers in Psychology*, *16*(April), 1499240. https://doi.org/10.3389/fpsyg.2025.1499240

Stefanica, V., Macri, A. C., Man, C. M., Vasile, A. M., Mateescu, A., Popescu, C., Cojanu, F., Hristache, D., Talpas, P. M., Tataru, A. M., & Mavritsakis, N. (2025). Integrated Physical Education for Mental Health: Enhancing Emotional Regulation, Self-Esteem, and

Stress Resilience in Adolescents through Sports, Mindfulness, and Reflection. *Revista Romaneasca Pentru Educatie Multidimensionala*, *17*(3), 295–312. https://doi.org/10.18662/rrem/17.3/1023

Tosun, M. I., Demirkan, E., Kaplan, A., Ari Yilmaz, Y., Eker Arici, I., Favre, M., Aslan, V., & Kutlu, M. (2025). Respiratory muscle training improves aerobic capacity and respiratory muscle strength in youth wrestlers. *Frontiers in Physiology*, *16*, 1492446. https://doi.org/10.3389/fphys.2025.1492446

Valle-Muñoz, V. M., Mendoza-Muñoz, M., & Villa-González, E. (2025). Physical Literacy as a Pedagogical Model in Physical Education. *Children*, *12*(8), 1008. https://doi.org/10.3390/children12081008