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Analysis of PJOK Learning Implementation to Increase Enthusiasm Among Upper-Grade Students at Cibungur Elementary School

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Abstract

The implementation of Physical Education, Sports, and Health (PJOK) learning in elementary schools may be constrained by limited facilities and infrastructure, potentially affecting students' learning experiences and enthusiasm. This study aims to examine the implementation of PJOK learning and identify factors supporting and inhibiting students' learning enthusiasm at Cibungur Elementary School, Rancakalong District. A qualitative descriptive design was employed. Data were collected through classroom and field observations, semi-structured interviews with the principal, PJOK teacher, and students in grades 4–6, and documentation. Data were analyzed thematically using NVivo 12, followed by triangulation across data sources. The findings indicate four major supporting factors: students' internal motivation, teacher creativity and commitment, school and community support, and adaptive teaching methods. Three major inhibiting factors were identified: limited facilities and infrastructure, unfavorable physical and environmental conditions, and psychological barriers. The school and teacher responded through short-term adaptive strategies, including equipment modification and the use of community fields, while long-term strategies focused on infrastructure advocacy and collaboration with relevant stakeholders. Based on the synthesis of the findings, this study proposes the Triadic Adaptation Model, consisting of structural resilience, pedagogical creativity, and student agency. The model suggests that sustaining PJOK learning in resource-limited settings requires the interaction of institutional support, teacher adaptability, and active student participation.

Keywords: PJOK learning; learning enthusiasm; elementary school; limited facilities; pedagogical creativity

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A. Introduction

Physical Education, Sports, and Health (PJOK) is an important component of elementary education because it contributes to students' physical, psychological, social, and cognitive development. Through physical activities, students can develop motor skills, physical fitness, discipline, cooperation, confidence, and positive attitudes toward an active lifestyle. PJOK also provides a distinctive learning environment in which students learn through movement, practice, interaction, and play. Therefore, effective PJOK learning requires not only appropriate instructional planning but also teaching strategies and learning environments that encourage students to participate actively. The quality of implementation is influenced by the consistency between instructional planning and actual practice, the quality of teacher delivery, and students' responsiveness to learning activities (Renninger et al., 2021). Teacher competence and the ability to select appropriate pedagogical approaches are also important in ensuring that physical education meets students' developmental needs (Hernando-Garijo et al., 2021).

However, the implementation of PJOK in elementary schools often faces limitations in facilities and infrastructure. Adequate sports fields, equipment, and learning spaces are essential because many PJOK activities require sufficient space and appropriate equipment. Limited facilities may restrict the types of activities that can be implemented, reduce students' opportunities to practice movement skills, and require teachers to modify their instructional plans. These conditions may also affect students' enthusiasm and participation, particularly when learning activities cannot be conducted as planned. Previous research has shown that facility availability, teacher competence, and school management are important factors influencing the effectiveness of physical education implementation (Yakub et al., 2019). Nevertheless, facility limitations do not necessarily prevent learning from taking place. Teacher creativity, institutional support, and community resources may provide alternative strategies for maintaining learning continuity.

This issue is evident at SDN Cibungur, Rancakalong District, where PJOK learning is conducted under limited facility conditions. The school has a relatively small sports field that is inadequate for several physical education activities, requiring teachers and students to use a community-owned public field. Sports equipment is also limited in quantity and condition, requiring teachers to modify equipment and adapt learning activities to available resources. In addition, environmental conditions such as weather and the distance to the alternative field may influence students' physical readiness and concentration. Despite these limitations, students continue to demonstrate enthusiasm for PJOK because they enjoy movement, games, and outdoor activities. The PJOK teacher also applies adaptive strategies, including game-based learning, equipment modification, and flexible instructional planning, while the school provides institutional support and collaborates with the surrounding community.

Previous studies indicate that successful physical education implementation is influenced by the interaction of teacher competence, instructional strategies, school support, and available resources. School leadership can support implementation through policies, supervision, resource allocation, and teacher development (Fonyi & Soon, 2021). Teacher creativity and modification of learning activities have also been shown to support student participation and motivation in contexts where facilities are inadequate (Mulyana et al., 2024). Furthermore, school-based physical activity research emphasizes the

importance of adaptation and contextual support for sustaining physical activity programs (Christiansen et al., 2021). However, existing studies tend to examine facility limitations, teacher competence, school support, or student engagement as separate issues. Limited qualitative research has examined how these factors interact simultaneously in the implementation of PJOK within an elementary school with constrained facilities, particularly from the perspectives of students, teachers, and school management.

Therefore, this study aims to analyze the implementation of PJOK learning at SDN Cibungur, identify factors that support and inhibit students' learning enthusiasm, and examine the adaptive strategies developed by teachers and the school in responding to facility limitations. The study further synthesizes the findings into the Triadic Adaptation Model, which emphasizes the interaction of structural resilience, pedagogical creativity, and student agency in sustaining PJOK learning under resource-limited conditions. This perspective is expected to contribute to the development of adaptive physical education practices and provide practical recommendations for schools and policymakers seeking to improve the quality and sustainability of PJOK learning in elementary schools with limited facilities.

B. Methods

This study was conducted at SDN Cibungur, Rancakalong District, West Java, Indonesia. The research setting was selected purposively because the school represents a context in which PJOK learning is implemented under limitations in sports facilities and infrastructure. The school has a limited sports field, resulting in the use of a community-owned public field for some PJOK learning activities. The availability and condition of sports equipment are also limited, requiring teachers to adapt learning activities and modify the use of available resources.

The research was conducted during 16 sessions. The school context was considered relevant to the research objectives because the existing limitations provided an opportunity to examine how PJOK learning is implemented, how students respond to learning activities, and how teachers and schools adapt their practices to maintain students' learning enthusiasm despite limited facilities.

The participants in this study consisted of 80 students from grades 4, 5, and 6 at SDN Cibungur. These students were selected because they represented the upper-grade students who directly participated in PJOK learning activities and experienced the existing conditions of facilities, learning activities, and instructional strategies.

The 80 student participants provided information concerning their experiences, interest, participation, enthusiasm, and perceptions of PJOK learning. Students from grades 4, 5, and 6 were considered appropriate participants because they had sufficient experience with PJOK learning to describe their learning experiences and responses to the conditions encountered during the learning process.

In addition to the 80 student participants, the PJOK teacher and school principal served as key informants. The PJOK teacher provided information concerning learning planning, instructional implementation, teaching strategies, equipment modification, and assessment, while the school principal provided information concerning school policies, facilities, institutional support, and collaboration with the surrounding community.

The study employed purposive sampling to select the 80 student participants from grades 4, 5, and 6. Purposive sampling was used because participants were selected based on predetermined criteria relevant to the

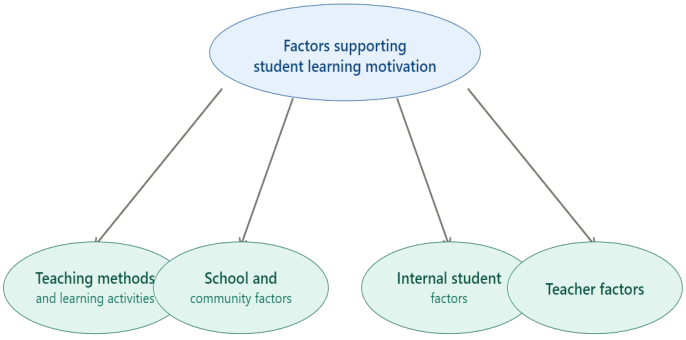
objectives of the study. The criteria included: (1) being enrolled as a student in grades 4, 5, or 6 at SDN Cibungur; (2) actively participating in PJOK learning activities; (3) having direct experience with the learning conditions and facilities available at the school; and (4) being willing to participate in the research.

The selection of participants was intended to obtain information from students who had direct and relevant experience with PJOK learning at the research site. The inclusion of students from three upper-grade levels also allowed the researchers to capture perspectives across grades 4, 5, and 6. The PJOK teacher and school principal were also purposively selected as key informants because of their direct involvement and knowledge regarding the planning, implementation, management, and evaluation of PJOK learning.

Thus, the participant selection consisted of 80 upper-grade students (grades 4–6), one PJOK teacher, and one school principal. The combination of student participants and key informants enabled the researchers to examine PJOK learning from student, teacher, and school-management perspectives.

C. Result and Discussion

Figure 1. Factors Supporting Student Learning Motivation



Source: NVivo 12 Data Processing (2026)

Based on the results of data processing using NVivo software, it was found that the factors supporting the learning motivation of upper-grade students in Physical Education, Sport, and Health (PJOK) learning at SDN Cibungur, Rancakalong District, are divided into four main dimensions: internal student factors, teacher factors, school and community factors, and teaching methods and learning activity factors. These four factors are mutually integrated, forming an ecosystem capable of sustaining students' enthusiasm despite the school's relatively limited facilities and infrastructure.

3.1 Findings of PJOK Learning Implementation

The findings from observations, interviews, and documentation showed that PJOK learning at SDN Cibungur continued to be implemented despite limitations in sports facilities and infrastructure. The study involved 80 students from grades 4, 5, and 6, supported by information from the PJOK teacher and school principal. Overall, students demonstrated positive enthusiasm toward PJOK, particularly during activities involving games, movement, group interaction, and outdoor learning.

Four main factors supported students' enthusiasm: students' internal interest, teacher creativity, school and community support, and appropriate learning methods. In contrast, three main factors inhibited

learning**:** limited facilities and equipment, environmental conditions, and psychological barriers**.**

Students generally enjoyed PJOK because it provided opportunities to move, play, and interact with classmates. Their enthusiasm remained visible even when learning facilities were inadequate. Game-based activities and group practices were particularly effective in encouraging participation. These findings indicate that students' intrinsic interest in physical activity contributed to maintaining learning participation under limited-resource conditions.

Teacher creativity was also important in maintaining learning continuity. The PJOK teacher modified equipment, adjusted activities, organized students into groups, and changed learning activities according to available space and resources. When standard equipment was insufficient, alternative materials were used, while activities requiring larger spaces were conducted at a community-owned public field. The teacher also adjusted activities according to weather and students' physical conditions.

School and community support further enabled PJOK learning to continue. The school maintained PJOK within the regular learning schedule and supported the utilization of available resources. Because the school field was limited, the community-owned field became an alternative learning space. This collaboration allowed activities requiring greater movement space to be conducted more effectively.

However, the main obstacle was the limited availability of facilities and infrastructure. The school field was insufficient for several physical activities, while sports equipment was limited in quantity and condition. Students sometimes had to share equipment or wait for their turn, reducing individual practice opportunities. The use of an external field also required additional time and could reduce effective learning time.

Environmental conditions also influenced implementation. Outdoor activities were affected by weather and heat, while travelling to the community field could cause additional physical fatigue. Some students also experienced psychological barriers, particularly when they lacked confidence in performing certain physical activities. The teacher addressed these conditions through encouragement, group activities, and flexible learning arrangements.

3.2 Adaptive Implementation of PJOK Learning

The implementation of PJOK consisted of planning, learning activities, and assessment. Although learning plans were prepared according to curriculum objectives, their implementation was adjusted to the actual conditions of facilities, weather, student characteristics, and available learning space. The teacher used demonstrations, guided practice, games, group activities, and direct practice to maintain student participation.

Four main adaptive strategies were identified. First, equipment modification enabled students to practice despite limited standard equipment. Second, activity modification involved adjusting rules, group size, duration, and learning procedures to fit available conditions. Third**,** the use of community facilities provided additional space for activities that could not be conducted effectively at school. Fourth, institutional support enabled teachers to manage available resources and sustain learning activities.

The findings demonstrate that adaptation occurred at both teacher and school levels. Teacher adaptation focused on modifying instructional practices, while school and community adaptation focused on providing access to resources and alternative learning spaces. These strategies allowed PJOK learning to continue without

completely abandoning the intended learning objectives.

3.3 Triadic Adaptation Model

The integrated findings resulted in the proposed Triadic Adaptation Model**,** consisting of three interconnected dimensions: structural resilience, pedagogical creativity, and student agency**.**

Structural resilience represents the school's ability to respond to limited resources through institutional support, resource management, and community collaboration**.** Pedagogical creativity represents the teacher's ability to modify equipment, activities, and teaching strategies according to existing conditions. Student agency represents students' enthusiasm, willingness to participate, and active involvement in PJOK learning.

The findings indicate that these three dimensions interact to sustain PJOK learning under resource-limited conditions. Structural resilience provides the supporting environment, pedagogical creativity transforms available resources into learning opportunities, and student agency enables students to remain actively involved. Therefore, the sustainability of PJOK learning at SDN Cibungur was supported not only by available facilities but also by the interaction between school support, teacher adaptation, and student participation.

Tabel 2. Results table

Theme	Sub-theme	Evidence	Implication
Supporting factors	Student motivation	Enjoyment of movement and games	Sustains participation
Supporting factors	Teacher creativity	Modified equipment and games	Compensates for facility limitations
Supporting factors	Community support	Access to public field	Enables learning continuity
Supporting factors	Game-based learning	Team games and competition	Increases engagement
Inhibiting factors	Facilities	Limited field and equipment	Reduces activity opportunities
Inhibiting factors	Environment	Heat and distance	Causes fatigue
Inhibiting factors	Psychological	Hesitation and reduced confidence	Limits participation
Adaptive strategies	Equipment modification	Plastic/alternative balls	Maintains learning activities
Adaptive strategies	Community collaboration	Public field use	Provides learning space
Long-term strategy	Infrastructure advocacy	Government proposals	Addresses structural problem

Discussion

4.1 Facility Limitations and Learning Implementation

The findings show that limited facilities and infrastructure at SDN Cibungur affected the implementation of PJOK learning, particularly through limited field space, insufficient equipment, reduced practice opportunities, and the need to use a community-owned field. These conditions sometimes reduced effective learning time and increased students' physical fatigue. This finding is consistent with Yakub et al. (2019), who reported that facility availability is an important factor in supporting effective physical education

implementation. Mulyana et al. (2024) similarly found that inadequate infrastructure requires teachers to adapt learning activities to available resources. However, the present study shows that facility limitations do not necessarily stop PJOK learning. Instead, their impact can be reduced through teacher adaptation, school support, and community collaboration. Thus, facilities remain an important structural requirement, while adaptive practices determine how learning can continue under constrained conditions.

4.2 Teacher Creativity as Adaptive Capacity

Teacher creativity was found to be an important factor in maintaining students' participation and enthusiasm. The PJOK teacher modified equipment, adjusted activities, organized students into groups, and applied game-based learning according to available facilities and environmental conditions. This finding supports Hernando-Garijo et al. (2021), who emphasized the importance of teacher competence and pedagogical adaptation in physical education. It is also consistent with Mulyana et al. (2024), who highlighted the role of creative teaching strategies in overcoming infrastructure limitations. The present study extends these findings by showing that teacher creativity functions as an adaptive capacity**,** enabling teachers to maintain learning objectives despite limited resources. Nevertheless, teacher creativity should complement rather than replace adequate facilities, because continuous dependence on adaptation may limit the quality and variety of physical education activities.

4.3 Community and School Support

The findings indicate that school leadership and community support contributed significantly to the continuity of PJOK learning. The school supported the teacher through learning management and resource utilization, while the community provided access to a public field when the school's facilities were inadequate. This finding is consistent with Fonyi and Soon (2021), who emphasized the importance of school leadership and institutional support in facilitating effective educational implementation. The use of community facilities also demonstrates that collaboration beyond the school can provide practical solutions to infrastructure limitations. However, community facilities should be viewed as complementary resources rather than substitutes for permanent school infrastructure. Long-term improvement still requires institutional planning and support from relevant stakeholders.

4.4 Triadic Adaptation Model

The findings lead to the proposed Triadic Adaptation Model, consisting of structural resilience, pedagogical creativity, and student agency. Structural resilience represents school and community support in managing limited resources; pedagogical creativity represents teachers' ability to modify learning strategies and equipment; and student agency represents students' enthusiasm and active participation. These three dimensions interact to maintain PJOK learning despite facility limitations. While previous studies have generally examined infrastructure, teacher competence, or student engagement separately, this study integrates these factors into a single adaptive framework. The model therefore provides a conceptual explanation of how institutional support, teacher adaptability, and student participation can work together to sustain PJOK learning in resource-limited elementary schools. However, because the model was derived from qualitative findings at one school, further research across multiple schools is needed to examine its broader applicability.

D. Conclusion

This study concludes that the implementation of PJOK learning at SDN Cibungur remains sustainable despite limitations in sports facilities and infrastructure. The main constraints are inadequate field space, limited equipment, environmental conditions, and psychological barriers that can reduce students' opportunities and enthusiasm to participate. However, these limitations do not prevent learning when supported by teacher creativity, school leadership, and community collaboration.

The key finding of this study is that teacher adaptability is central to maintaining students' learning enthusiasm under resource-limited conditions. Through equipment modification, game-based learning, flexible instructional planning, and the use of alternative learning spaces, the teacher is able to maintain student participation and achieve learning objectives despite structural limitations.

Based on the integrated findings, this study proposes the Triadic Adaptation Model**,** consisting of structural resilience, pedagogical creativity, and student agency. The model suggests that sustainable PJOK learning requires the interaction of institutional support, adaptive teacher practices, and active student participation. Thus, improving PJOK in resource-limited schools should not rely solely on infrastructure provision but should simultaneously strengthen teacher adaptive capacity, school-community partnerships, and student engagement.

The study recommends that schools continue developing low-cost and context-appropriate learning strategies while strengthening partnerships with local communities and relevant stakeholders. Nevertheless, adaptive strategies should be accompanied by long-term investment in adequate PJOK facilities. Future research should test the applicability of the Triadic Adaptation Model across multiple elementary schools and different resource contexts.

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F. Conflict of Interest

Tidak ada konflik kepentingan

References

Calahorro-Cañada, F., Torres-Luque, G., López-Fernández, I., & Carnero, E. A. (2017). Is the physical education teacher's role in the classroom associated with students' physical activity? *International Journal of Environmental Research and Public Health, 14*(10), 1–12.

Carlson, J. A., Engelberg, J. K., Cain, K. L., Conway, T. L., Mignano, A. M., Bonilla, E., Young, D. R., & Sallis, J. F. (2017). Implementing classroom physical activity breaks: Results from a cluster randomized controlled trial. *American Journal of Preventive Medicine, 53*(6), 778–785.

Cheval, B., Sarrazin, P., Pelletier, L., & Chanal, J. (2016). Physical activity and motivation: The role of self-determined motivation in physical education. *Psychology of Sport and Exercise, 27*, 1–10.

Christiansen, L. B., et al. (2021). School-based physical activity interventions and implementation: A systematic review. *International Journal of Environmental Research and Public Health, 18*, 1–18.

Dila, A., Baihaqi, F. N., Habibah, S., & Marini, A. (2024). Studi Pustaka tentang Peran Fasilitas Sekolah dalam Mendukung Efektivitas Pembelajaran di Sekolah Dasar. *Jurnal Pendidikan Guru Sekolah Dasar*, *1(3)*, 9. https://doi.org/https://doi.org/10.47134/pgsd.v1i3.531

Fonyi, L., & Soon, C. C. (2021).

Administrators' attitude towards the implementation of physical education in Selangor primary schools. *Pertanika Journal of Social Sciences and Humanities*, *29*, 291–309. https://doi.org/10.47836/pjssh.29.s1.16

García-de-Olalla, A., Tugores-Ques, M., Pinya-Medina, C., & Salvà-Mut, F. (2025). Adjustment of the Teacher Self-Efficacy Scale in Vocational Education: Exploring Its Links to Academic Performance. *International Journal of Training and Development*. https://doi.org/10.1111/ijtd.70010

Gill, M., Chan-Golston, A. M., Rice, L. N., Cole, B. L., Koniak-Griffin, D., & Prelip, M. L. (2016). Consistency of moderate to vigorous physical activity in middle school physical education. *Family and Community Health*, *39*(4), 283–292. https://doi.org/10.1097/FCH.0000000000000115

Hagenauer, G., Muehlbacher, F., & Ivanova, M. (2023). "It's where learning and teaching begins – is this relationship" — insights on the teacher-student relationship at university from the teachers' perspective. *Higher Education*, *85*(4), 819–835. https://doi.org/10.1007/s10734-022-00867-z

Hall, A., Wolfenden, L., Shoesmith, A., McCarthy, N., Wiggers, J., Bauman, A. E., Rissel, C., Sutherland, R., Lecathelinais, C., Brown, H., Trost, S. G., & Nathan, N. (2022). The impact of an implementation intervention that increased school's delivery of a mandatory physical activity policy on student outcomes: A cluster-randomised controlled trial. *Journal of Science and Medicine in Sport*, *25*(4), 321–326. https://doi.org/10.1016/j.jsams.2021.12.005

Harianto, B., Angga, P. D., Jaelani, A. K., & Makki, M. (2024). Survei Sarana dan Prasarana Pendidikan Jasmani Olahraga dan Kesehatan di Sekolah Dasar Negeri Se-Kecamatan Keruak. *Jurnal Ilmiah Profesi Pendidikan*, *9(2)*, 1231–1236. https://doi.org/https://doi.org/10.29303/jipp.v9i2.2255

Harianto, B., Angga, P. D., Jaelani, A. K., & Makki, M. (2024). Survei Sarana dan Prasarana Pendidikan Jasmani Olahraga dan Kesehatan di Sekolah Dasar Negeri Se-Kecamatan Keruak. *Jurnal Ilmiah Profesi Pendidikan*, *9*(2), 1231–1236. https://doi.org/10.29303/jipp.v9i2.2255

Haris, A., & Ghazali, M. I. (2016). Implementation of teacher learning in physical education curriculum at the junior school in makassar, Indonesia. *Journal of Physical Education and Sport*, *16*, 683–687. https://doi.org/10.7752/jpes.2016.s1110

Hernando-Garijo, A., Hortigüela-Alcalá, D., Sánchez-Miguel, P. A., & González-Víllora, S. (2021). Fundamental pedagogical aspects for the implementation of models-based practice in physical education. *International Journal of Environmental Research and Public Health*, *18*(13). https://doi.org/10.3390/ijerph18137152

Ibrahim, A., Aidil, R., Sabri, A., & Hidayatullah, R. (2024). Sinergi Pendidikan dan Masyarakat: Implementasi Administrasi Hubungan Sekolah dan Masyarakat di Era Digital. *Parlementer: Jurnal Studi Hukum Dan Administrasi Publik*, *1(4)*, 32–64. https://doi.org/https://doi.org/10.62383/parlementer.v1i4.242

Issah, M., Musah, M. B., Kamil, N. M., & Panin, R. O. (2025). The Mediating Role of Student-Teacher

Relationships in the Relationship Between Teacher Self-Efficacy and Teaching Practices in Turkey: Evidence from TALIS18. *Journal of Education and Training Studies*, *13*(3), 11–23. https://doi.org/10.11114/jets.v13i3.7697

Ji, D., Giles, H., & Hu, W. (2025). The Role of Students' Perceptions of Educators' Communication Accommodative Behaviors in Classrooms in China. *Behavioral Sciences*, *15*(4). https://doi.org/10.3390/bs15040560

Killian, C. M., Espinoza, S. M., Webster, C. A., Long, B., Urtel, M., Mays Woods, A., & D'Agostino, E. M. (2022). Flipping the Script: An Initial Exploration of Flipped Learning as an Enhanced Alternative to Traditional Physical Education Lessons. *International Journal of Environmental Research and Public Health*, *19*(22). https://doi.org/10.3390/ijerph19221518

Maulana, M. A. N. I., Nurmiyati, N., dkk. (2025). Peran Dispora dalam Pembinaan Olahraga melalui Kolaborasi Lintas Sektor. *Journal of Indonesian Rural and Regional Government*, *9(1)*, 25–39. https://jurnal.apmd.ac.id/index.php/JIRReG/article/view/550

Mduwile, P. L., Lufunga, J., & Goswami, D. (2025). Assessing the impact of teaching methods on student engagement in Tanzanian secondary schools: A comprehensive review. *Indonesian Journal of Multidisciplinary Educational Research*, *3(2)*, 89–103. https://doi.org/https://doi.org/10.30762/ijomer.v3i2.6588

Mohammed, W. A., Kalari, J., Makrooni, G., & Lagestad, P. (2025). Teachers' perceptions related to structural influences in physical education: a comparative study of Finland and the Kurdistan Region of Iraq. *Frontiers in Education*, *10*. https://doi.org/10.3389/feduc.2025.1476290

Mooses, K., Pihu, M., Riso, E.-M., Hannus, A., Kaasik, P., & Kull, M. (2017). Physical Education Increases Daily Moderate to Vigorous Physical Activity and Reduces Sedentary Time. *Journal of School Health*, *87*(8), 602–607. https://doi.org/10.1111/josh.12530

Mulyana, A., Salsabila, F., Sundari, M. A., Sofiyani, N. E., Fajar, R. N., Rahayu, R., & Fujiyanah, T. S. (2024). Tantangan dan Strategi Pendidikan Jasmani Olahraga dan Kesehatan di Sekolah Dasar. *Jurnal Ilmiah IMEIJ*, *5(3)*.

Nair, U. S., Gopinathan, K., & Tiwari, S. (2025). Quality Physical Education in India. In *Quality Physical Education: Global Perspectives* (pp. 91–100). https://doi.org/10.4324/9781003513582-11

Newberry, M. (2013). Reconsidering differential behaviors: Reflection and teacher judgment when forming classroom relationships. *Teacher Development*, *17*(2), 195–213. https://doi.org/10.1080/13664530.2012.753946

Nielsen, J. V, Klakk, H., Bugge, A., Andreasen, M. L., & Skovgaard, T. (2018). Implementation of triple the time spent on physical education in pre-school to 6th grade: A qualitative study from the programme managers' perspective. *Evaluation and Program Planning*, *70*, 51–60. https://doi.org/10.1016/j.evalprogplan.2018.06.001

Persiani, M., Ceciliani, A., Russo, G., Dallolio, L., Senesi, G., Bragonzoni, L., Montalti, M., Sacchetti, R., & Masini, A. (2025). Active Breaks in Primary and Secondary School Children and Adolescents: The Point of View of Teachers. *Healthcare*

(Switzerland), *13*(19). https://doi.org/10.3390/healthcare13192482

Petty, N. J., Thomson, O. P., & Stew, G. (2012). Ready for a paradigm shift? Part 2: Introducing qualitative research methodologies and methods. *Manual Therapy*, *17*(5), 378–384. https://doi.org/10.1016/j.math.2012.03.004

Renninger, D., Sturm, D. J., Krieger, C., & Demetriou, Y. (2021). Promoting girls' physical activity in physical education: Evaluation of the implementation quality of the CReActivity study. *German Journal of Exercise and Sport Research*, *51*(2), 222–231. https://doi.org/10.1007/s12662-021-00705-x

Setiawan, I., Kurniawan, W. R., & Wijayanti, D. G. S. (2024). Implementation of Online Teacher Professional Development Programs: Physical Education Teacher Perspectives. *Retos*, *57*, 445–454. https://doi.org/10.47197/retos.v57.105406

Silva, A. M., Estriga, M. L., Graça, A., Macphail, A., & Batista, P. (2024). Enhancing high school students' engagement in physical activity through a fitness education model in physical education. *Journal of Physical Education and Sport*, *24*(12), 2048–2059. https://doi.org/10.7752/jpes.2024.12303

Walker, T. J., Craig, D. W., Robertson, M. C., Szeszulski, J., & Fernandez, M. E. (2021). The relation between individual-level factors and the implementation of classroom-based physical activity approaches among elementary school teachers. *Translational Behavioral Medicine*, *11*(3), 745–753. https://doi.org/10.1093/tbm/ibaa133

Wibowo, C., Nopiyanto, Y. E., Raibowo, S., Insanistyo, B., Kardi, I. S., & Cs, A. (2024). Assessing the Influence of the Flipped Classroom on Physical Education Students' Engagement in Basketball Learning Activities. *Physical Education Theory and Methodology*, *24*(4), 511–519. https://doi.org/10.17309/tmfv.2024.4.01

Xue, R. (2025). Evaluating Physical Education Quality in Higher Education Using a Picture Fuzzy Decision Framework with Muirhead Mean Operator and MULTIMOORA Method. *IEEE Access*, *13*, 18277–18293. https://doi.org/10.1109/ACCESS.2025.3532949

Yakub, Y., Hassan, S., Ishak, A., Azmi, S. H., Muszali, R., Ahmad, Y., & Karim, Z. A. (2019). The influence of infrastructure, accountability and teacher competency towards teaching process implementation in physical education and health. *International Journal of Innovative Technology and Exploring Engineering*, *9*(1), 4637–4639. https://doi.org/10.35940/ijitee.A4725.119119

Yli-Piipari, S., Gråstén, A., Huhtiniemi, M., Salin, K., & Jaakkola, T. (2022). One-year stability of physical education-centered physical literacy indicators on objectively measured physical activity. *European Physical Education Review*, *28*(2), 361–379. https://doi.org/10.1177/1356336X211046302