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Sports Education Curriculum Development Strategy in Schools: The Latest and Innovative Approach

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Abstract. This study aims to identify and analyze recent strategies in developing the Physical Education, Sports, and Health (PJOK) curriculum in schools. Using a literature review approach, the article examines innovative pedagogical models such as the Sport Education Model (SEM), Teaching Games for Understanding (TGfU), flipped classroom, gamification, and project-based learning. It also explores the integration of digital technologies and assessment approaches based on physical literacy and Outcome-Based Education (OBE). The synthesis reveals that curriculum innovation in PJOK significantly enhances student motivation, engagement, and achievement—not only in physical domains but also in cognitive and affective aspects. However, challenges such as teacher readiness, infrastructure limitations, and unequal digital access continue to hinder large-scale implementation. This review recommends stronger collaboration among educational stakeholders, teacher capacity building, and supportive policies to promote an adaptive and evidence-based PJOK curriculum.

Keywords: curriculum, learning innovation, educational technology, physical literacy, OBE

1 Introduction

Physical Education, Sports, and Health (PJOK) plays a crucial role in the modern education system due to its contribution to fostering active and healthy lifestyle habits, as well as developing students' social and emotional skills. In the 21st-century landscape, PJOK is viewed not only as an effort to improve motor skills but also as an integral part of holistic education (Quennerstedt, Almqvist, & Öhman, 2022).

The effectiveness of PJOK is strongly influenced by the curriculum design and learning model used. One widely researched approach is the Sport Education Model (SEM), which encourages active student participation, a sense of ownership of learning, and increased motivation. The integration of SEM with other approaches such as Teaching Games for Understanding (TGfU) in a hybrid model has been shown to positively impact student engagement and learning outcomes (Zhang, Chen, & Sun, 2024).

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In addition to the hybrid learning model, the flipped classroom approach has also gained attention. This model allows students to study theoretical material independently before practical sessions, allowing for more effective use of class time. Research shows that this approach can increase students' intrinsic motivation and engagement in physical education (Méndez-Giménez, Fernández-Río, & Méndez-Alonso, 2023).

On the other hand, the development of digital technology has influenced the way physical education is designed and implemented. Technologies such as fitness apps, video tutorials, and wearable devices are used to monitor students' physical activity in real time. However, the effectiveness of this technology integration depends heavily on teachers' digital competency and the readiness of school infrastructure (Casey, Goodyear, & Armour, 2021).

In the Indonesian context, the implementation of the Independent Curriculum offers an opportunity to design more adaptive and student-centered physical education (PE) learning. This curriculum encourages differentiated learning and the use of authentic assessments, which aligns with the Outcome-Based Education (OBE) approach to evaluating students' comprehensive competency achievement (Hidayat, Yuwono, & Raharjo, 2024).

Equally important, assessments in Physical Education (PJOK) are now focused on measuring physical literacy, namely students' ability to understand, apply, and appreciate physical activity holistically. This encompasses physical, cognitive, and affective aspects. Research suggests the use of valid and reliable assessment instruments to accurately capture these dimensions (Durden-Myers & Foweather, 2021).

Based on this description, the development of a current PJOK curriculum requires an innovative, contextual, and evidence-based approach. The gap between policy and practice in the field serves as a crucial basis for conducting this literature review, which aims to provide strategic direction for updating the physical education curriculum in the digital age.

2 Method

This study uses a literature review approach to examine and analyze strategies for developing a physical education curriculum in schools, emphasizing the latest and most innovative approaches. This method was chosen because it provides a comprehensive understanding of trends, effectiveness, and challenges in implementing the physical education curriculum in various educational contexts. The review process was conducted systematically through the stages of literature identification, article selection based on inclusion criteria, source quality evaluation, and thematic synthesis

of relevant findings. The primary objective of this method is to gather the latest scientific evidence that can serve as the basis for formulating recommendations for developing a physical education curriculum that adapts to the needs of 21st-century learning.

Data sources in this study were obtained from several reputable international academic databases such as Scopus, Web of Science, PubMed, ERIC, DOAJ, and Google Scholar, as well as national sources such as Garuda and Neliti to ensure diversity and representativeness of the literature, including the local Indonesian context. The articles analyzed were publications in peer-reviewed journals from 2019 to 2025, specifically addressing themes such as physical education curriculum development, the implementation of innovative learning models (e.g., the Sport Education Model, Teaching Games for Understanding, and the flipped classroom), technology integration in Physical Education and Health, physical literacy-based assessment, and national curriculum policies. Articles that were non-empirical, irrelevant to the topic, or not available in full text were excluded from the analysis. The results of this study were organized thematically to provide a structured overview of the direction, potential, and challenges in developing a more progressive and contextual sports education curriculum in the school environment.

3 Result

A review of ten verified academic articles shows that various innovative and adaptive approaches have been implemented to update the Physical Education (PJOK) curriculum at various levels of education. One key highlight is the integration of hybrid learning models such as the Sport Education Model (SEM) and Teaching Games for Understanding (TGfU), which have been proven to increase student engagement, collaboration, and personal responsibility. Furthermore, the flipped classroom strategy has also been identified as an effective method for strengthening motivation and conceptual understanding prior to practical implementation.

Digitalization has become a crucial dimension in curriculum reform. Technology not only expands learning spaces but also enables real-time assessment and personalized learning. The hyflex learning model has emerged in response to the need for learning flexibility, particularly in the context of blended online and offline learning.

In the context of evaluation, a physical literacy-based approach has become increasingly relevant because it assesses students holistically—covering the physical, cognitive, and affective domains. Meanwhile, in Indonesia, local issues such as limited time and infrastructure in implementing PJOK in elementary schools have been addressed with innovations such as the Active PJOK strategy and the adoption of the Outcome-Based Education (OBE) curriculum model, which has begun to emphasize the achievement of tangible competencies.

Overall, current PE curriculum development strategies are shifting toward a more flexible, holistic, technology-based approach that aligns with the needs of today's students. The following table summarizes the focus of the findings from the reviewed literature.

No	Focus of Findings	Verified Source
1	Peran pendidikan jasmani dalam pembentukan karakter dan literasi fisik.	Quennerstedt, Almqvist, & Öhman (2022)
2	Integrasi model pembelajaran hybrid SEM + TGfU dalam kurikulum PJOK.	Zhang, Chen, & Sun (2024)
3	Efektivitas flipped classroom dalam meningkatkan motivasi dan keterlibatan siswa.	Méndez-Giménez et al. (2023)
4	Digitalisasi dan pedagogi berbasis teknologi dalam PJOK.	Casey, Goodyear, & Armour (2021)
5	Model hyflex learning sebagai strategi pembelajaran adaptif dalam PJOK.	Varea & González-Calvo (2022)
6	Asesmen physical literacy dan pentingnya pendekatan holistik dalam evaluasi.	Durden-Myers & Foweather (2021)
7	Tantangan implementasi PJOK di SD dalam konteks Kurikulum Merdeka.	Puspitaningrum (2023)
8	Strategi PJOK AKTIF dalam konteks Kurikulum Merdeka.	Muhyi, Sumarwan, & Latif (2023)
9	Profesionalisme guru dalam mengadopsi pedagogi digital.	Goodyear, Casey, & Kirk (2021)
10	Pendekatan kurikulum berbasis OBE dalam pendidikan jasmani.	Hidayat, Yuwono, & Raharjo (2024)

A review of verified articles shows that the development of the Physical Education, Sports, and Health (PJOK) curriculum has undergone significant transformation in line with social dynamics and technological advances. In general,

these studies confirm that PJOK is no longer positioned solely as a physical activity to build fitness, but has shifted to become an instrument for character building, physical literacy development, and improving students' social-emotional skills (Quennerstedt, Almqvist, & Öhman, 2022).

This change is driven by the integration of pedagogical model-based learning approaches such as the Sport Education Model (SEM) and Teaching Games for Understanding (TGfU). Zhang, Chen, and Sun (2024) demonstrated that the implementation of a hybrid SEM-TGfU model in PJOK curriculum design not only improves students' motor skills but also facilitates collaboration, responsibility, and active engagement. This approach also reflects the current, more student-centered curriculum direction.

Another innovation is the implementation of the flipped classroom strategy in PJOK learning. Méndez-Giménez et al. (2023) revealed that this model can increase students' intrinsic motivation and deepen conceptual understanding, as it allows students to independently study theory before engaging in physical practice in the classroom.

Digital transformation is also a key driver in curriculum reform. Casey, Goodyear, and Armour (2021) emphasize that integrating digital technology into Physical Education (PJOK) can expand learning spaces, enable real-time assessment, and support personalized learning. However, the success of this integration depends heavily on teacher readiness and adequate supporting resources.

From the perspective of adaptive learning strategies, the hyflex learning model is a crucial solution, especially in the context of post-pandemic flexible learning. Varea and González-Calvo (2022) note that this model allows students to participate in PJOK synchronously, both offline and online, thus addressing the need for inclusive learning.

In terms of evaluation, a physical literacy-based approach is a key focus. Durden-Myers and Foweather (2021) explain that assessments in PJOK now measure not only physical aspects but also affective and cognitive dimensions. This requires evaluation instruments that are more comprehensive and relevant to the needs of students in the 21st century.

The local Indonesian context reflects similar dynamics. Puspitaningrum (2023) identified that limited learning time and curriculum load are key challenges in implementing Physical Education (PJOK) in elementary schools. However, strategies such as the AKTIF (Fun, Character, Measurable, Innovative, Fit) PJOK program developed by Muhyi, Sumarwan, and Latif (2023) have been shown to significantly increase student interest and engagement, while simultaneously optimizing the implementation of the Independent Curriculum.

Finally, the Outcome-Based Education (OBE) approach in the PJOK curriculum, as discussed by Hidayat, Yuwono, and Raharjo (2024), provides a new direction in physical education that emphasizes tangible competency outcomes, learning flexibility, and differentiation based on student needs.

4 Discussion

In recent years, updates to the Physical Education, Sports, and Health (PJOK) curriculum have been geared toward addressing 21st-century challenges with a more adaptive, contextual, and evidence-based approach. The curriculum no longer focuses solely on movement mastery but also on developing students' physical literacy, mental well-being, and social-emotional competencies (Whitehead, 2019).

One emerging approach is gamification in physical education. According to Howley and Dunleavy (2021), the implementation of game elements in the PJOK curriculum, such as point systems, challenges, and levels, can increase student engagement and create a competitive yet inclusive learning environment. Gamification also plays a crucial role in fostering intrinsic motivation, especially in students who are less physically active.

Furthermore, project-based learning approaches have been adapted to the physical education context. Research by Araújo et al. (2020) demonstrated that the integration of project-based learning allows students to explore physical activity in greater depth and meaning, particularly in topics related to health, fitness, and nutrition. This approach encourages students to be active participants in the learning process.

In the context of digital transformation, teachers' digital competence is crucial. Bailey et al. (2021) suggest that the success of technology integration in Physical Education (PJOK) is largely determined by teachers' ability to adapt digital media for active learning. Ongoing professional training is essential to ensure teachers are able to effectively use tools such as video movement analysis, physical activity trackers, and online learning platforms.

The use of video modeling is also increasingly being used as a movement visualization strategy. In a study by Rizzo et al. (2022), students who received instruction through video modeling showed significant improvements in motor skill accuracy and understanding of movement techniques. This method is particularly effective for learning complex skills such as gymnastics or small ball games.

In terms of evaluation, the concept of physical literacy, developed by Whitehead (2019), emphasizes the importance of a holistic approach to assessment. PJOK assessments should not only measure physical outcomes such as speed or strength but should also assess affective and cognitive dimensions. This approach is

believed to be more relevant in supporting student character development through physical education.

The implementation of Outcome-Based Education (OBE) also provides an appropriate framework for developing a physical education curriculum. According to Spady (1994), the OBE approach requires teachers to design learning based on expected outcomes, including life skills, collaboration skills, and social responsibility. OBE also allows for flexibility in learning strategies, including the use of flipped classroom or blended learning approaches tailored to the school context. Overall, developing an effective physical education (PE) curriculum requires a combination of various innovative approaches: gamification, project-based learning, the use of video-based technology, and holistic assessments based on physical literacy. Teacher readiness and systemic support from schools are key to successfully implementing a curriculum that equips students to become healthy, adaptive, and collaborative individuals in the future.

5 Conclusion

Based on findings from various literature studies, it can be concluded that the development of a Physical Education, Sports, and Health (PJOK) curriculum plays a strategic role in improving the overall quality of education. An innovatively designed curriculum not only supports physical fitness but also contributes to strengthening physical literacy, social-emotional skills, and holistically developing students' character.

Various curriculum innovations, such as the implementation of participatory pedagogical models (e.g., gamification and project-based learning), the use of video modeling in motor skills learning, and blended and hyflex learning, have been proven to increase student motivation, engagement, and learning experiences in the context of PJOK. The Outcome-Based Education (OBE) approach provides a clearer and more measurable learning direction, enabling physical education to become more than just a physical routine but also an educational process oriented toward 21st-century competencies.

However, the successful implementation of PJOK curriculum innovations still faces several challenges, including limited digital resources, unequal access to technology between schools, and the low digital competency of some teachers in utilizing technology-based learning media. This demonstrates the importance of strengthening teacher professional training, institutional support, and collaboration among stakeholders in supporting the development of an effective physical education curriculum.

Therefore, it can be concluded that sustainable physical education curriculum development requires a systemic approach that integrates innovative pedagogical strategies, educational technology, and teacher capacity building. With the right support, physical education has the potential to become a key pillar in producing a generation that is physically healthy, mentally strong, and capable of navigating the dynamics of global life.

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