



Reconceptualizing Continuing Professional Development in Physical Education: A Systematic Review of Implementation, Mechanisms, and Pedagogical Transformation

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Abstract

Background. Continuing professional development (CPD) plays a critical role in improving teaching quality in physical education (PE); however, its effectiveness remains uneven and highly context-dependent.

Objectives. This study aims to systematically examine the forms of implementation, outcomes, and impacts of CPD in PE, while providing a more integrated understanding of how CPD functions as a professional learning process.

Materials and Methods. A systematic literature review was conducted in accordance with PRISMA guidelines, identifying 30 empirical studies published between 2015 and 2025 across major academic databases. Data were analyzed using thematic synthesis to identify patterns in implementation, duration, and outcomes.

Results. The findings indicate that CPD in PE is implemented through diverse models, including workshops, professional learning communities, and practice-based collaborative approaches. However, effectiveness is not determined solely by format or duration, but by the extent to which CPD fosters sustained engagement, reflective practice, and contextual relevance. CPD contributes to improvements in teachers' pedagogical knowledge, instructional practices, self-efficacy, and professional identity. Evidence of impact at the student and institutional levels suggests enhanced engagement, inclusivity, and learning environments, although these effects are indirect and mediated by implementation conditions.

Conclusions. CPD in PE should be understood as a dynamic, multi-level professional learning process shaped by interactions among individual, social, and institutional factors. These findings highlight the need for context-responsive and sustainable CPD designs that support meaningful pedagogical transformation.

Keywords: continuing professional development, physical education, teacher learning, pedagogical transformation.

Introduction

The role of the PE teacher has expanded beyond physical fitness to include a variety of skills, but has encompassed emotional intelligence, social skills, and cognitive development. PE involves a high level of behavioral interaction, educates students about morality, and facilitates certain prosocial behaviors, which are considered important goals of physical education (Wei et al., 2020). Therefore,

strategic pedagogy in PE teaching is necessary to support students' holistic development. Hence, PE teaching should be implemented in a harmonious manner, providing positive sporting experiences, stimulating interest, and encouraging goal achievement (Guangxin et al., 2022). In addition, teaching in PE provides opportunities for students to achieve success, set expectations and build respectful relationships, thus strengthening life skills (Poza et al., 2016).

Success in teaching PE relies significantly on the teacher taking an active role in the classroom, using direct and indirect behaviors and dialogue to support and extend learning (Goodyear & Dudley, 2015). In addition, the teacher is also the determinant of the success of the

implementation of a model or theoretical construction in achieving teaching objectives (Casey et al., 2021). However, PE educators continue to face challenges in interpreting and applying the learning model in practice. A notable example is the challenge educators face in operationalizing the game-based approach within classroom settings (Goodyear, 2017). Teachers have limited pedagogical understanding, leading to deviations from the teaching practices recommended by the curriculum (Roshid & Haider, 2024). Furthermore, teachers find it difficult to change teaching methods that have already become habitual (Casey & MacPhail, 2018) and less skilled in keeping up with technological advances and collaborating with peers (Bodsworth & Goodyear, 2017).

Moreover, the teaching carried out by teachers is often driven not only by their understanding of the intricacies or effectiveness of the learning model, but also by encouragement from the principal and students (Cereda, 2023; Malinowski et al., 2024). Therefore, teacher training is needed as well as a concerted effort by researchers to create more scientific evidence based on classroom applications (Hernando-Garijo et al., 2021). The need for teacher training is reinforced by the study from (Casey & Bjørke, 2024) which highlights the importance of supporting frameworks for teachers in implementing pedagogical models focused on continuous learning and collaboration. In addition, strengthening pedagogical content knowledge is essential for teachers to be able to implement learning effectively (Iserbyt et al., 2017). For this reason, it is very important to develop teacher professionalism.

CPD allows for change through a sustainable community of practice (Kahts-Kramer & Wood, 2023). This can broaden teachers' understanding of inclusive pedagogy (Makopoulou et al., 2022) and improve knowledge and practice related to physical literacy (Edwards et al., 2019). CPD encourages teachers to apply teaching principles effectively by setting clear learning outcomes, differentiation and inclusion (Morgan et al., 2019). Despite the promising results of CPD, research shows that the effectiveness of these programs may vary depending on several factors, including the quality of the content, the level of teacher engagement, and the specific context in which the program is implemented (You et al., 2024). Therefore, continuous evaluation and improvement of CPD programs is essential to ensure that programs remain relevant and impactful. Further research is needed to understand the impact of CPD on teacher retention and the education system more widely, as well as to identify best practices for delivering CPD in different education settings (Tinning, 2020). Thus, an investigation into previous studies is needed to uncover the implementation of CPD in developing PE teachers' competencies.

Several studies have been conducted to investigate the application of CPD to improve teachers' teaching quality. Ambon et al. (2024) reviewed twenty-four articles related to the impact of CPD on the quality of teacher teaching in general. Further, Al-Omary et al. (2024) has reviewed thirteen articles relating to health professionals implementing their learning from CPD activities. Solomon, et, al. (Solomon et al., 2023) reviewed thirty-five articles related to conceptualization and related trends in staff CPD in higher education. Besides that, Parker et al (Parker et al., 2021) conducted an overview of 95 studies related to Learning Communities (LC) in physical education for professional development between 1990 and

2020. Based on these studies, the investigation related to CPD has covered many areas. However, this body of work remains conceptually fragmented, often emphasizing isolated aspects of CPD, such as program design or teacher outcomes, without offering an integrated understanding of how CPD operates as a complex, context-dependent professional learning process. Unlike other disciplines, PE teaching demands physical demonstration, interpersonal adaptability, and integration of social-emotional learning into movement activities (Goodyear & Dudley, 2015; Casey et al., 2021). Therefore, a dedicated synthesis is needed to understand how CPD programs are designed, delivered, and evaluated to meet these challenges. Furthermore, with global educational systems emphasizing inclusive, student-centered, and model-based pedagogies, understanding how CPD supports PE teachers in adapting to these demands remains underexplored.

In response to these gaps, a systematic review is needed that moves beyond program description to critically synthesize the types of CPD programs implemented, their pedagogical mechanisms, and their broader impacts on teaching and learning in PE. Such an approach can inform the development of contextually grounded, collaborative, and reflective professional learning frameworks that are more responsive to the unique demands of PE. This systematic review aims to map the forms of CPD implementation in physical education, analyze the impact of the program on teachers and students, and identify methodological and conceptual gaps in the existing literature. The focus of this review is not only on the description of CPD interventions, but also on the mechanisms by which CPD contributes to the development of professional identity, teacher agency, and the improvement of the quality of student learning experiences in the context of the unique, movement-based pedagogy of PE.

Materials and Methods

Search Strategy

A systematic literature review was conducted to identify empirical studies on the implementation of CPD programs for PE Teachers. In this systematic review emphasizes the systematic search process supported by three main steps: identification, screening, and eligibility, which aid researchers in conducting comprehensive article searches (Page et al., 2021). The search approach was designed to ensure comprehensiveness, reproducibility, and alignment with the review's objectives. Four online databases were selected for their relevance and comprehensiveness in the fields of education and sport pedagogy research: Scopus, Web of Science (WoS), ERIC, and EBSCOhost. The search, undertaken on 18 October 2025, was restricted to papers from 2015 to September 2025 to encompass recent advancements in CPD research.

The search query was built using Boolean operators and terms relevant to CPD and physical education. The ultimate search string utilized across databases was as follows: ("continuing professional development" OR "professional learning community" OR "teacher development" OR "continuous teacher learning") AND ("physical education"). The search in Scopus is performed on documents by examining titles, abstracts, and keywords. Subsequently, in

the WoS database, the search emphasises the pertinence of the study topic to the employed query. A search was performed in the EBSCOHost database within the available column, focusing on job compatibility. A search was conducted in the ERIC database using the search column to identify relevant educational resources. These criteria were used to ensure the sensitivity and specificity of the results.

Criteria for Inclusion and Selection of Studies

In compliance with PRISMA 2020 recommendations, this study used a structured, fully operationalized screening technique to ensure methodological rigor and transparency in the review process. The following criteria were established for inclusion: (a) studies that included in-service physical education (PE) teachers as participants; (b) studies that implemented a continuous professional development (CPD) intervention; (c) studies that specifically looked at how CPD affected pedagogical practices, teaching quality, teacher-related outcomes, or student learning outcomes; (d) empirical research designs, such as experimental, quasi-experimental, or action research; (e) articles published in peer-reviewed journals; (f) publications from September 2025; and (g) articles written in English.

The following criteria were used for exclusion: (a) studies that did not include PE teachers (e.g., general education contexts or other disciplines); (b) studies that did not include a CPD intervention component; (c) non-empirical publications (e.g., reviews, conceptual papers, editorials); (d) studies that were not published in peer-reviewed journals; and (e) articles that were not in their final published form. To ensure methodological traceability throughout the evaluation, the research selection procedure consisted of three consecutive steps: identification, screening, and eligibility assessment. A total of 699 entries were found through database searches during the identification phase. The dataset was then modified for screening after 233 duplicate records were eliminated.

Titles and abstracts were methodically assessed during the screening phase using the predetermined inclusion and exclusion criteria. At this point, studies that blatantly failed to satisfy the population, intervention, or study design requirements were eliminated. Full-text papers were then thoroughly evaluated in the eligibility step. After full-text review, 153 articles were excluded because they met at least one of the exclusion criteria. Furthermore, 283 papers were excluded for failing to meet the review's inclusion criteria. Thirty papers were included in the final qualitative synthesis after the selection procedure.

Procedures and Instruments

This research was qualitatively synthesised by two reviewers, focusing on the essential aspects of the studies: authors and year, location, sample size, intervention (kind, length, context, and format), and primary outcomes, adopted from (Taheri & Welsh, 2015). All included research were rigorously analysed according to these identified criteria. The topic synthesis in this study was executed systematically and aligned with the study objectives to achieve analytical rigour. The results from this analyse are discussed by all authors in accordance with the objectives of the paper.

This systematic review assesses the risk of bias in each study that has an assessment process. This decision was made because risk of bias (RoB) assessment is a key step in ensuring that the results of a systematic review or meta-analysis are truly reliable and not influenced by systematic errors. The RoB assessment uses the Cochrane Handbook for Systematic Reviews of Interventions guidelines (Boutron et al., 2019). This systematic review assessed the quality of the included studies based on the five main domains of ROBINS-I, i.e., selection bias, performance/intervention bias, outcome measurement bias, reporting bias, and conclusion bias. Each domain was assessed using the categories low risk of bias (+), uncertainty or unclear (?), and high risk of bias (-). A study is considered to have a low risk of bias if all domains are assessed as low risk or if there is one item assessed as high risk or uncertain. A study is considered to have a moderate risk of bias if two domains are assessed as high risk or if the risk of bias cannot be determined. Finally, a study is considered to have a high risk of bias if more than two domains are assessed as high risk.

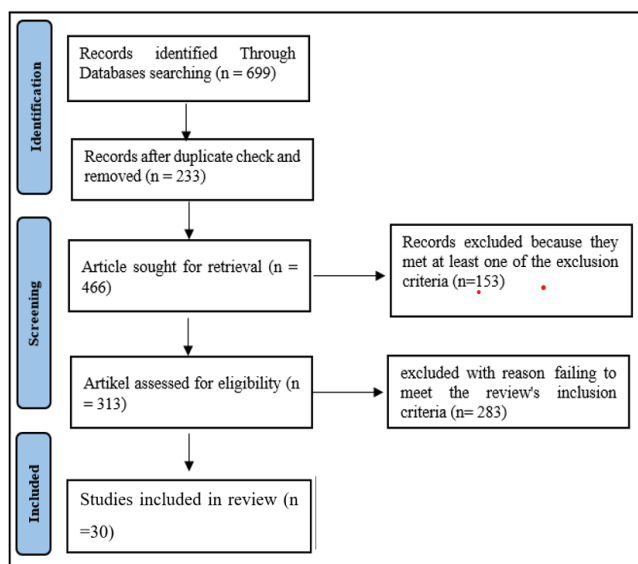


Fig. 1. Study selection flow diagram

Results

Risk of Bias Assessment

The results of the risk of bias assessment for the 30 studies are presented in Table 1. The risk of bias assessment shows that the majority of studies have a low to moderate risk of bias. Selection bias is the most common domain, mainly due to the use of purposive sampling and voluntary participation in the context of educational research. Most of the studies showed consistent implementation of interventions, use of standardized instruments, transparent reporting, and conclusions that were in line with the objectives. There were no indications of serious bias or selective reporting. Therefore, the overall methodological quality of the included studies was deemed adequate to support the thematic synthesis in this study.

Table 1. List of included studies with risk of bias result

Author & Year	Selection Bias (Randomisation)	Intervention Bias	Measurement Bias	Reporting Bias	Conclusion Bias
Hemphill et al. (2015)	-	+	+	+	+
Miller et al. (2015)	+	+	-	+	+
García-Calvo et al. (2016)	-	+	+	+	+
Braga et al. (2017)	-	+	+	+	+
Gore et al. (2017)	+	+	+	+	+
Miller et al. (2017)	+	+	?	+	+
Makopoulou (2018)	?	+	+	+	+
Sum et al. (2018)	-	+	+	+	+
Hünük et al. (2019)	?	+	+	+	+
Morgan et al. (2019)	+	+	+	+	+
Makopoulou et al. (2021)	?	+	+	+	+
Peralta et al. (2020)	+	+	+	+	+
Gonçalves et al. (2021)	?	+	+	+	+
Sum et al., (2022)	?	+	+	+	+
Deng et al. (2022)	-	+	+	+	+
Gonçalves et al. (2022)	+	+	+	+	+
Gonçalves et al. (2022)	?	+	+	+	+
Muarifin et al. (2022)	+	+	+	+	+
Bjørke et al. (2023)	+	+	+	+	+
Ferreira et al. (2023)	-	+	+	+	+
Kahts-Kramer & Wood (2023)	-	+	+	+	+
Lee et al. (2023)	?	+	+	+	+
Colburn et al. (2024)	?	+	+	+	+
Latino et al. (2024)	-	+	+	+	+
Yoon et al. (2024)	?	-	+	+	+
Beddoes et al. (2025)	?	+	+	+	+
Marcelino (2025)	+	?	+	+	+
Milton et al. (2025)	?	+	+	+	+
Ní Chróinín et al. (2025)	?	+	+	+	+

Findings Overview

The 30 studies (see table 2) that advanced to the final selection stage demonstrate that the implementation of Continuous Professional Development (CPD) in physical education occurs across diverse national and institutional contexts, including the United States, Australia, Spain, England, Hong Kong, Turkey, Brazil, Indonesia, Norway, South Africa, South Korea, Italy, Portugal, Ireland, and Wales. This geographical distribution suggests that the focus on continuing professional development for physical education instructors is a global concern, rather than a phenomenon confined to a particular school system. The evaluated studies exhibit considerable variability from the participants' perspective, ranging from small-scale investigations involving 3–10 teachers to extensive programs involving hundreds of teachers and thousands of students. Some studies not only concentrate on educators but also link CPD to student results. This variation shows that CPD in PE

has been implemented both as a micro-intervention focused on deeply changing teacher practices and as a systemic intervention aimed at strengthening pedagogical capacity across schools.

Implementation's Form and Structure

The review findings indicate that CPD implementation in physical education is not uniform but rather encompasses a diverse array of methods. On the one hand, there exist structured, course-oriented programs, such as short-course CPD in inclusive physical education, that aim to enhance awareness and self-efficacy within a brief timeframe (Makopoulou, 2018; Makopoulou et al., 2021) day-long courses or workshops features prominently in teachers' continuing professional development (CPD). Conversely, the majority of research indicates the adoption of more collaborative and sustainable frameworks, including professional learning communities (PLC), communities of

practice (CoP), lesson study, video-based CPD, participatory action research, critical action learning, and student voice-driven methodologies (Gore et al., 2017; Peralta et al., 2020; Ferreira et al., 2023; Colburn et al., 2024).

These studies consistently indicate a transition from a unilateral training model to a professional learning approach that is social, reflective, and practice-oriented. Initiatives such as PLUNGE and QTR prioritize reflection and peer observation as fundamental components of learning (Miller et al., 2015, 2017), whereas CoP and PLC serve as collaborative environments for addressing practical challenges and collectively enhancing pedagogical knowledge (Hünük et al., 2019; Gonçalves et al., 2021). The implementation of CPD in PE demonstrates a pronounced inclination towards a model that regards teachers as active participants in the professional learning process.

Program Duration and Intensity

The examined papers indicate considerable disparity in the length of CPD implementation. Short-term programs range from one day to several weeks, including one-day short-course CPD (Makopoulou, 2018) or collaborative workshops spanning 3–5 weeks (Miller et al., 2015; Braga et al., 2017). Concurrently, other programs operate over a medium to long duration, spanning several months to over a year, and perhaps extending to a decade within the framework of sustainable professional communities (Yoon et al., 2024; Beddoes et al., 2025).

Short-term programs typically result in initial enhancements in knowledge, awareness, and self-efficacy (Morgan et al., 2019), while long-term programs are more frequently associated with profound pedagogical transformations, the establishment of professional communities, and the sustainability of collaborative practices (Deng et al., 2022; Bjørke et al., 2023; Lee et al., 2023). Nevertheless, numerous studies suggest that an extended length does not inherently ensure effectiveness, particularly in the absence of program modifications and sufficient support systems (Yoon et al., 2024). Consequently, time seems to be a significant aspect, albeit not the sole driver of CPD success.

Output at the Teacher Level

The results reveal that the effects of CPD at the teacher level can be categorized into several primary domains: enhancement of pedagogical competence, augmentation of self-efficacy and confidence, alterations in pedagogical beliefs, advancement of professional reflection, and reinforcement of teacher identity and agency. In the educational domain, CPD promotes a transition from conventional methodologies to more student-centered, inquiry-driven, and game-oriented methods. The adoption of PLUNGE (Miller et al., 2015) and programs focused on physical literacy and life skills (Sum et al., 2018; Sum et al., 2022) there remains limited empirical evidence for the effect of teacher participation in CPD on student learning outcomes. In light of this void, the purpose of this study was to examine the influence of an eight-month PE-CPD program on students' perceived physical literacy, motivation and enjoyment of physical education. A randomized control trial design was used to assign a sample

of 65 physical education teachers from Hong Kong to the CPD and control intervention groups. Students' (n = 1,485) enhances teachers' capacity to create more relevant and contextualized learning experiences.

Numerous studies indicate an enhancement in teachers' self-efficacy, confidence, and perceived competence in the psychological-professional domain (Braga et al., 2017; Peralta et al., 2020; Latino et al., 2024) including enhanced cardiorespiratory endurance, improved academic performance, augmented cognitive functioning, as well as advancements in social and psychological well-being. Given that students participate in schooling for up to 200 days per annum, physical education (PE). Furthermore, CPD is linked to enhanced teacher agency, including the capacity to spearhead professional development, foster collaboration, and champion improvements in practice (Morgan et al., 2019; Gonçalves et al., 2022; Gonçalves et al., 2022; Kahts-Kramer et al., 2022; Ni Chróinín et al., 2025). This finding shows that CPD not only improves technical skills but also changes broader professional dimensions.

Impact on Students and the Learning Environment

The quality of the learning environment and the impact on pupils are also highlighted in several studies in this review, despite the primary focus of CPD being on teachers. The study by Studies by Sum et al. (2018) and Sum et al. (2022) there remains limited empirical evidence for the effect of teacher participation in CPD on student learning outcomes. In light of this void, the purpose of this study was to examine the influence of an eight-month PE-CPD program on students' perceived physical literacy, motivation and enjoyment of physical education. A randomized control trial design was used to assign a sample of 65 physical education teachers from Hong Kong to the CPD and control intervention groups. Students' (n = 1,485) showed that CPD is related to increased motivation, participation, and student engagement. Marcelino (2025) misaligning with contemporary educational paradigms prioritising holistic student development. This study examined the impact of a professional development intervention on classroom climates in PE, focusing on learning- and performance-oriented climates fostered by teachers and peers. Using a difference-in-differences approach with ordinary least squares regression models, data from 588 students across 43 classes in 12 Portuguese schools were analysed. The intervention involved a 25-h continuing professional development (CPD) study indicates that student-centered CPD programs are associated with improvements in the learning environment and students' intrinsic motivation. Latino et al. (2024) including enhanced cardiorespiratory endurance, improved academic performance, augmented cognitive functioning, as well as advancements in social and psychological well-being. Given that students participate in schooling for up to 200 days per annum, physical education (PE) indicated that CPD for PE teachers affects the physiological and cognitive health of school-aged children. These findings indicate that CPD in PE contributes to improvements in students' learning experiences, particularly through changes in teachers' pedagogical practices. Thus, the impact of CPD on students occurs indirectly through the transformation of learning design and classroom interactions.

Table 2. General overview of included studies

Author & Year	Location	Participants	Treatment Type	Duration	Primary Outcome
Hemphill et al. (2015)	Midwest, USA	3 PE teachers	Responsibility-based CPD protocol using Hellison's TPSR model.	4 months	Teachers showed increased awareness and integration of nine responsibility-based teaching strategies.
Miller et al. (2015)	New South Wales, Australia	7 primary schools	PLUNGE: Game-centered professional learning programme for PE teachers.	5 weeks + 2-week follow-up	Teachers shifted from skill-based to game-centered instruction; lessons became more engaging and inquiry-driven.
García-Calvo et al. (2016)	Spain	20 PE teachers	CPD on motivational and behavioural management strategies emphasizing need-supportive teaching.	5–6 weeks	Teachers improved positive behaviour support and fostered greater student motivation.
Braga et al. (2017)	Appalachian, USA	4 PE teachers	Collaborative hands-on workshops and reflection sessions.	3 weeks	Enhanced teachers' confidence, classroom management, and instructional routines related to safety and organization.
Gore et al. (2017)	New South Wales, Australia	192 teachers	Quality Teaching Rounds (QTR): collaborative CPD integrating PLC and instructional rounds.	6 months + 12-month follow-up	Improved teaching quality, morale, and sense of professional recognition across schools.
Miller et al. (2017)	Hunter Region, NSW, Australia	7 teachers	PLUNGE CPD focusing on the Game-Centered Approach (GCA).	5 weeks	Marked improvement in pedagogical understanding and delivery of game-based learning.
Makopoulou (2018)	England	40 tutors	CPD on Inclusive PE emphasizing practical and interactive approaches.	6-hour short course	Raised awareness of inclusive pedagogy but highlighted need for ongoing, context-specific training.
Sum et al. (2018)	Hong Kong	70 PE teachers, 6,300 students	Physical Literacy-based PE-CPD integrating teacher and 9student development.	8 months	Improved teachers' physical literacy knowledge and self-efficacy; students' motivation and participation increased.
Hünük et al. (2019)	Ankara, Turkey	6 PE teachers	Health-Related Fitness (HRF) Community of Practice (CoP).	10 weeks	Teachers engaged in collaborative reflection and peer challenge, supporting mutual professional growth.
Morgan et al. (2019)	Wales, UK	3 PE teachers	Collaborative PE-CPD with mentoring and reflective practice.	6–7 weeks	Teachers implemented inclusive pedagogies and felt empowered to lead in-service workshops.
Makopoulou et al. (2021)	England	1,604 teachers & assistants	One-day short-course CPD in inclusive PE.	6 hours	Positive short-term effects on teacher self-efficacy; limited evidence of sustained behavioural change.
Peralta et al. (2020)	Western Sydney, Australia	49 PE teachers	Video-based CPD grounded in Self-Determination Theory (SDT).	8 months	Improved theoretical understanding and perceived competence; valued authentic feedback and peer support.
Gonçalves et al. (2021)	Minas Gerais, Brazil	6 PE teachers	Maintenance of democratic CoP for social justice and equity in PE.	12 months	Teachers co-created practices addressing professional marginalization and built solidarity within CoP.
Sum et al. (2022)	Hong Kong	6 PE teachers	Customized PE-CPD tailored to teachers' contexts.	2.5 months	Immediate and intermediate improvements in teachers' physical literacy and teaching efficacy.
Deng et al. (2022)	United States	19 PE teachers	Full-semester CPD focused on healthful living and curriculum reform.	3 years (each semester)	Improved instructional quality and alignment between teaching and health-promoting curriculum.

Table 2 (continued)

Author & Year	Location	Participants	Treatment Type	Duration	Primary Outcome
Gonçalves et al. (2022)	Minas Gerais, Brazil	6 PE teachers	Community of Practice (CoP) for professional empowerment in low-resource settings.	9 months	CoP served as an effective strategy for teacher learning and resilience under precarious conditions.
Gonçalves et al. (2022)	Governador Valadares, Brazil	6 PE teachers	Collaborative PLC for teacher empowerment and social transformation.	12 months	Supported teachers in seeking better working conditions and organizing collective action for change.
Muarifin et al. (2022)	East Java, Indonesia	74 PE teachers	Collaborative model-based CPD combining TPSR and TGfU.	13 sessions	Significantly improved teachers' cognitive ability and reflective teaching competence.
Sum et al. (2022)	Hong Kong	65 PE teachers & 1,485 students	Health-Based PE (HbPE) CPD.	8 months	Teachers' sustained participation improved affective learning outcomes and student engagement.
Bjørnke et al. (2023)	Norway	3 PE teachers	Participatory Action Research (PAR) using Cooperative Learning as pedagogical innovation.	12 months	Collective reflection helped teachers move from directive to student-centered practices.
Ferreira et al. (2023)	Brazil	13 PE teachers	Online CoP for professional learning and mentoring.	11 months	Digital CoP expanded access to peer collaboration; "by teachers, for teachers" model proved effective.
Kahits-Kramer & Wood (2023)	Eastern Cape, South Africa	10 PE teachers	Critical Action Learning (CAL) integrated with Participatory Action Research (PALAR).	21 months	Created safe reflective spaces; enhanced teacher empowerment and contextual practice adaptation.
Lee et al. (2023)	South Korea	8 secondary PE teachers	Life-Skills-Oriented CPD programme (Project Change Up).	12 months	Identified four trajectories of teacher change (generative, delayed, fluctuated, stagnant) mediated by reflection and peer support.
Colburn et al. (2024)	United States	5 PE teachers	Online Andragogy-Based Lesson Study (AbLS) model for CPD.	2 years	AbLS deepened reflective inquiry and supported adult learning through structured collaborative cycles.
Latino et al. (2024)	Italy	50 PE teachers	Physical Literacy-based comprehensive CPD programme.	16 weeks	Significant gains in self-efficacy across seven pedagogical and technological domains.
Yoon et al. (2024)	South Korea	8 PE teachers	Long-term PE-CoP examining professional learning sustainability.	10 years	Professional learning effectiveness declined over time, emphasizing need for renewal and institutional support.
Beddoes et al. (2025)	New York City, USA	282 PE teachers	District-wide CPD through Professional Learning Communities (DPE-PLC).	~10 years	Improved teachers' content knowledge, collaboration, and curriculum coherence across schools.
Marcelino (2025)	Northwest Portugal	12 PE teachers, 588 students	Student-centered CPD programme emphasizing motivation and engagement.	25 hours (5 weeks)	Improved learning climate and intrinsic motivation among students.
Milton et al. (2025)	Wales, UK	8 staff members	Long-term CPD using CoP model with Duda's Integrated Motivational Framework.	18 months	Built sustainable and meaningful professional development communities in PE.
Ní Chróinín et al. (2025)	Ireland	10 PE teachers	Student-voice pedagogical CPD supported by PLC.	6 months	Fostered shared reflection, emotional support, and transformation of teachers' beliefs about PE teaching.

Institutional Impact and Pedagogical Reform

In addition to instructors and students, the review findings indicate that certain types of CPD influence the institutional level. The QTR study indicates improvements in teaching quality, morale, and professional recognition within schools (Gore et al., 2017). Beddoes et al. (2025) demonstrate that district-wide PLCs enhance content understanding, teamwork, and curriculum coherence among schools. Research in Brazil indicates CoPs and PLCs function as educational platforms for educators while also facilitating collective efforts to promote improved working conditions and foster professional solidarity in challenging circumstances (Gonçalves et al., 2021; Gonçalves et al., 2022; Gonçalves et al., 2022).

Discussion

The findings of this comprehensive literature review suggest that CPD in physical education should not be viewed as a homogeneous, technical training intervention, but rather as a multifaceted, contextual, and relational professional learning process. These data suggest that CPD is more precisely characterized as an ecology of professional learning established by the interplay of practice, reflection, cooperation, and institutional support. Nonetheless, these findings should not be construed solely as a modification in format, but rather as a transformation in the mechanics of professional learning. This conclusion is corroborated by a study by Altun & Yuçel-Toy (2023) demonstrating that collaborative and reflective continuing professional development engenders improvements that signify a substantial transformation in professional comprehension, rather than only a modification in training format.

The subsequent finding regarding program duration indicates that time is not a definitive factor in CPD's efficacy. While long-term initiatives are sometimes linked to profound instructional transformations, they require integration with practice, ongoing reflection cycles, and institutional backing. According to Liebeck-Lien et al. (2023), CPD programs must prioritize collaboration, reflection, and support structures rather than duration. The study conducted by Ventista & Brown (2023) the emergence of the school as learning organisation is vital. In this context, the aim of this systematic review was to explore what comprises effective professional development for educators: i.e. what forms of teacher professional development definitively lead to positive outcomes for students? A total of 125 studies were reviewed as part of the study; however only 11 studies with experimental or quasi-experimental design examined impact on students' learning. Analysis of these studies suggest that training, ongoing coaching, collaborative Continuous Professional Development (CPD further asserts that the efficacy of CPD depends on ongoing advancement, collaboration, and integration into the educational framework, rather than solely on the duration of participation. Nonetheless, it is crucial to acknowledge that the existing research does not clearly establish a consistent causal relationship between duration and effectiveness. Consequently, any interpretation of the importance of duration must be undertaken with prudence, considering additional elements such as practical integration and contextual support.

Moreover, this review's results demonstrate that CPD in PE enhances pedagogical competency and facilitates the

reformation of teachers' professional identities. Several studies have indicated a transformation in educators' educational convictions and instructional methodologies. These data indicate that CPD influences not just technical dimensions but also instructors' comprehension and execution of pedagogy. The transition from conventional methods to more student-centered, inquiry-based, or experiential practices indicates that educators are altering not only their actions but also their comprehension of the objectives of PE. Study on meaningful physical education (Fletcher et al., 2021) and the transition from performance to learning orientation (Beni, 2017) suggests that CPD influences the reformation of teachers' pedagogical frameworks. However, changes in deeper dimensions, such as professional identity, are still limited to a small number of studies; therefore, any generalization of these findings must be made with due caution.

The review findings indicate that participatory CPD programs offer additional opportunities for teachers' active engagement in the professional development process. In addition to identification, this analysis highlights that teacher agency is a crucial factor in the efficacy of CPD. This finding is supported by the study by Zhang et al. (2024), which demonstrates that educators' proactive involvement strongly predicts CPD outcomes. Moreover, McMillan et al. (2016) emphasize the importance of active engagement rather than passive reception for educators to think, interrogate, and incorporate theory into practice. Consequently, it indicates that teachers' active participation is a pivotal factor in enhancing the efficacy of CPD, but the degree of its impact may vary across contexts.

Numerous studies have documented the influence of CPD on students, notably through enhanced motivation, engagement, and the quality of the educational experience. Study by Sum et al. (2022) there remains limited empirical evidence for the effect of teacher participation in CPD on student learning outcomes. In light of this void, the purpose of this study was to examine the influence of an eight-month PE-CPD program on students' perceived physical literacy, motivation and enjoyment of physical education. A randomized control trial design was used to assign a sample of 65 physical education teachers from Hong Kong to the CPD and control intervention groups. Students' (n = 1,485) indicates that the efficacy of physical literacy-based pedagogy depends on instructors' ability to incorporate it into their instruction. Nonetheless, these results are typically indirect and contingent upon modifications in educators' instructional methodologies. Thus, the connection between CPD and student learning outcomes should be perceived as a mediated interaction, rather than a direct consequence of the intervention.

These findings suggest that CPD in PE is most effective when structured as a collaborative, reflective, contextual, and institutionally endorsed learning process. Under these circumstances, CPD not only augments pedagogical proficiency but also cultivates professional identity, broadens teacher agency, and elevates the quality of student learning experiences (Ambon et al., 2024; Ncube & Ajani, 2025). Consequently, CPD must be recognized as a tool for pedagogical reform that functions at various levels, linking practice, reflection, professional communities, and institutional contexts. The ramifications of these findings suggest that the next CPD development should prioritize designs that are connected with practice, facilitate ongoing

reflection, and enhance teacher professional communities. Moreover, subsequent research should prioritize investigating change mechanisms rather than solely focusing on outcomes to facilitate a deeper understanding of the relationship among CPD, pedagogical practices, and student learning experiences.

This systematic review possesses numerous methodological flaws that warrant acknowledgment. The included studies demonstrate significant heterogeneity regarding research design, context, and methodological approaches, including experimental, quasi-experimental, qualitative, and action research studies. Although thematic synthesis was used to address this diversity, this variability may affect the consistency and generalisability of the findings. The risk-of-bias assessment employed an adapted domain-based approach to accommodate the mixed-method nature of the evidence. While this facilitated consistent evaluation across studies, it may lack the precision of design-specific appraisal tools. It should be regarded as a general indication of study quality rather than a conclusive measure of rigor. Ultimately, potential publication bias cannot be ruled out, as the review focused on peer-reviewed journal papers, which may disproportionately feature research with positive outcomes while neglecting null or negative results. Notwithstanding these constraints, this review provides a thorough, methodical synthesis of existing literature on CPD in PE, offering significant insights into its implementation, outcomes, and foundational mechanisms.

Conclusions

This systematic study indicates that CPD in PE should not be viewed as a uniform training intervention, but as a multifaceted, context-sensitive professional learning process. The results indicate that CPD operates within a dynamic ecosystem shaped by the interplay among practice, reflection, collaboration, and institutional support. Their structure or duration does not solely dictate the usefulness of varied CPD formats, but rather by their capacity to foster sustained engagement, facilitate meaningful collaboration, and align with instructors' pedagogical realities.

This review emphasizes the need for future research to move beyond mere descriptive assessments of CPD programs and focus on the fundamental mechanisms of change. Longitudinal and multi-level studies are essential for comprehending the impact of CPD on teaching practice, professional identity, and student learning over time. These initiatives will foster a more thorough, theoretically informed understanding of CPD as a catalyst for instructional innovation in physical education.

Ethics Approval and Informed Consent:

As this study is based solely on the analysis of previously published studies and does not involve direct interaction with human participants, ethical approval and informed consent were not applicable.

Data Availability Statement

Extended data supporting this study are publicly available via Zenodo at: ILMAWATI, H. (2026). Data Set

of A Systematic Review of Implementation, Mechanisms, and Pedagogical Transformation [Data set]. Zenodo. <https://doi.org/10.5281/zenodo.19404224>. The extended data are available under the terms of the Creative Commons Attribution 4.0 International license (CC-BY 4.0).

AI Transparency Statement

The authors declare that artificial intelligence (AI) tools were used solely to assist in language refinement and manuscript editing. All intellectual content, including conceptualization, data analysis, interpretation, and conclusions, was developed by the authors. The authors take full responsibility for the integrity and originality of the work.

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Conflicts of Interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

References

- Wei, C., Su, R., & Hsu, M. (2020). Effects of tpsr integrated sport education model on football lesson students' responsibility and exercise self-efficacy. *Revista de Cercetare Si Interventie Sociala*, 71, 126-136. <https://doi.org/10.33788/rcis.71.8>
- Guangxin, L., Dunguo, R., & Qichen, Z. (2022). On the four basic problems of harmonious physical education teaching. *Journal of Physical Education and Sport*, 22(5), 1297-1303. <https://doi.org/10.7752/jpes.2022.05162>
- Pozo, P., Grao-Cruces, A., & Pérez-Ordás, R. (2016). Teaching personal and social responsibility model-based programmes in physical education: A systematic review. *European Physical Education Review*, 24(1), 56-75. <https://doi.org/10.1177/1356336X16664749>
- Goodyear, V., & Dudley, D. (2015). "I'm a Facilitator of Learning!" Understanding What Teachers and Students Do Within Student-Centered Physical Education Models. *Quest*, 67(3), 274-289. <https://doi.org/10.1080/00336297.2015.1051236>
- Casey, A., MacPhail, A., Larsson, H., & Quennerstedt, M. (2021). Between hope and happening: Problematising the

- M and the P in models-based practice. *Physical Education and Sport Pedagogy*, 26(2), 111-122.
<https://doi.org/10.1080/17408989.2020.1789576>
- Goodyear, V. (2017). Sustained Professional Development on Cooperative Learning: Impact on Six Teachers' Practices and Students' Learning. *Research Quarterly for Exercise and Sport*, 88(1), 83-94.
<https://doi.org/10.1080/02701367.2016.1263381>
- Roshid, M.M., & Haider, M.Z. (2024). Teaching 21st-century skills in rural secondary schools: From theory to practice. *Heliyon*, 10(9), e30769.
<https://doi.org/10.1016/j.heliyon.2024.e30769>
- Casey, A., & MacPhail, A. (2018). Adopting a models-based approach to teaching physical education. *Physical Education and Sport Pedagogy*, 23(3), 294-310.
<https://doi.org/10.1080/17408989.2018.1429588>
- Bodsworth, H., & Goodyear, V.A. (2017). Barriers and facilitators to using digital technologies in the Cooperative Learning model in physical education. *Physical Education and Sport Pedagogy*, 22(6), 563-579.
<https://doi.org/10.1080/17408989.2017.1294672>
- Cereda, F. (2023). Methods and models in the context of physical activity and physical education: strength, weakness and gaps. *Journal of Physical Education and Sport*, 23(5), 1064-1075.
<https://doi.org/10.7752/jpes.2023.05133>
- Malinowski, P.R., Kern, B.D., & Wallhead, T. (2024). Adopting Instructional Models in Physical Education: The Influence of Occupational Socialization. *Journal of Teaching in Physical Education*, 43(1), 93-101.
<https://doi.org/10.1123/jtpe.2022-0142>
- Hernando-Garijo, A., Hortigüela-Alcalá, D., Sánchez-Miguel, P.A., & González-Villora, 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>
- Casey, A., & Bjørke, L. (2024). Teachers' experiences of enacting pedagogical models and models-based practice: a systematic mixed study review. *Physical Education and Sport Pedagogy*, 29(6), 1-17.
<https://doi.org/10.1080/17408989.2024.2415325>
- Iserbyt, P., Ward, P., & Li, W. (2017). Effects of improved content knowledge on pedagogical content knowledge and student performance in physical education. *Physical Education and Sport Pedagogy*, 22(1), 71-88.
<https://doi.org/10.1080/17408989.2015.1095868>
- Kahts-Kramer, S.A., Du Randt, R., & Wood, L. (2022). Foundation phase teachers' experiences of physical education in low-resource schools: implications for continuing professional development. *South African Journal for Research in Sport Physical Education and Recreation*, 44(2), 29-52.
<https://doi.org/10.36386/sajrsper.v44i2.207>
- Kahts-Kramer, S.A., & Wood, L. (2023). Guidelines for action learning as professional development to transform Physical Education in low resourced primary schools in South Africa. *Action Learning: Research and Practice*, 20(2), 100-115.
<https://doi.org/10.1080/14767333.2023.2211936>
- Makopoulou, K., Penney, D., Neville, R., & Thomas, G. (2022). What sort of 'inclusion' is Continuing Professional Development promoting? An investigation of a national CPD programme for inclusive physical education. *International Journal of Inclusive Education*, 26(3), 245-262. <https://doi.org/10.1080/13603116.2019.1647297>
- Edwards, L.C., Bryant, A.S., Morgan, K., Cooper, S.-M., Jones, A.M., & Keegan, R.J. (2019). A Professional Development Program to Enhance Primary School Teachers' Knowledge and Operationalization of Physical Literacy. *Journal of Teaching in Physical Education*, 38(2), 126-135.
<https://doi.org/10.1123/jtpe.2018-0275>
- Morgan, K., Bryant, A.S., Edwards, L.C., & Mitchell-Williams, E. (2019). Transferring primary generalists' positive classroom pedagogy to the physical education setting: a collaborative PE-CPD process. *Physical Education and Sport Pedagogy*, 24(1), 43-58.
<https://doi.org/10.1080/17408989.2018.1533543>
- You, H., Park, S., Hong, M., & Warren, A. (2024). Unveiling effectiveness: A meta-analysis of professional development programs in science education. *Journal of Research in Science Teaching*, 62(4).
<https://doi.org/10.1002/tea.21985>
- Tinning, R. (2020). School PE and 'fat' kids: maintaining the rage and keeping a sense of perspective. *Curriculum Studies in Health and Physical Education*, 11(2), 101-109.
<https://doi.org/10.1080/25742981.2020.1773883>
- Ambon, J., Alias, B. S., Komariah, A., & Mansor, A. N. (2024). The impact of continuous professional development on teaching quality: A systematic review. *International Journal of Evaluation and Research in Education (IJERE)*, 13(6), 3838. <https://doi.org/10.11591/ijere.v13i6.30427>
- Al-Omary, H., Soltani, A., Stewart, D., & Nazar, Z. (2024). Implementing learning into practice from continuous professional development activities: a scoping review of health professionals' views and experiences. *BMC Medical Education*, 24(1), 1031.
<https://doi.org/10.1186/s12909-024-06016-7>
- Solomon, M.A., Gebremedhin, A.A., & Tigistu, K.W. (2023). Continuous professional development in higher education: A systematic review of its conceptualizations, trends and challenges (2011-2020). *Bahir Dar Journal of Education*, 23(1), 21-39.
<https://doi.org/10.4314/bdje.v23i1>
- Parker, M., Patton, K., Gonçalves, L., Luguetti, C., & Lee, O. (2021). Learning communities and physical education professional development: A scoping review. *European Physical Education Review*, 28(2), 500-518.
<https://doi.org/10.1177/1356336X211055584>
- Page, M.J., McKenzie, J.E., Bossuyt, P.M., Boutron, I., Hoffmann, T.C., Mulrow, C.D., Shamseer, L., Tetzlaff, J.M., Akl, E.A., Brennan, S.E., Chou, R., Glanville, J., Grimshaw, J.M., Hróbjartsson, A., Lalu, M.M., Li, T., Loder, E.W., Mayo-Wilson, E., McDonald, S., ... Moher, D. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *Systematic Reviews*, 10(1), 89.
<https://doi.org/10.1186/s13643-021-01626-4>
- Taheri, S.A., & Welsh, B.C. (2015). After-School Programs for Delinquency Prevention: A Systematic Review and Meta-Analysis. *Youth Violence and Juvenile Justice*, 14(3), 272-290. <https://doi.org/10.1177/1541204014567542>
- Boutron, I., Page, M.J., Higgins, J.P. T., Altman, D.G., Lundh, A., Hróbjartsson, A., & Group, C.B. M. (2019).

- Considering bias and conflicts of interest among the included studies. *Cochrane Handbook for Systematic Reviews of Interventions*, 177-204. <https://doi.org/10.1002/9781119536604.ch7>
- Hemphill, M.A., Templin, T.J., & Wright, P.M. (2015). Implementation and outcomes of a responsibility-based continuing professional development protocol in physical education. *Sport, Education and Society*, 20(3), 398-419. <https://doi.org/10.1080/13573322.2012.761966>
- Miller, A., Christensen, E.M., Eather, N., Sproule, J., Annis-Brown, L., & Lubans, D.R. (2015). The PLUNGE randomized controlled trial: Evaluation of a games-based physical activity professional learning program in primary school physical education. *Preventive Medicine*, 74, 1-8. <https://doi.org/10.1016/j.ypmed.2015.02.002>
- García-Calvo, T., Sánchez-Oliva, D., Leo, F.M., Amado, D., & Pulido, J.J. (2016). Effects of an intervention programme with teachers on the development of positive behaviours in Spanish physical education classes. *Physical Education and Sport Pedagogy*, 21(6), 572-588. <https://doi.org/10.1080/17408989.2015.1043256>
- Braga, L., Jones, E., Bulger, S., & Elliott, E. (2017). Empowering teachers to implement innovative content in physical education through continuous professional development. *Teacher Development*, 21(2), 288-306. <https://doi.org/10.1080/13664530.2016.1235608>
- Gore, J., Lloyd, A., Smith, M., Bowe, J., Ellis, H., & Lubans, D. (2017). Effects of professional development on the quality of teaching: Results from a randomised controlled trial of Quality Teaching Rounds. *Teaching and Teacher Education*, 68, 99-113. <https://doi.org/10.1016/j.tate.2017.08.007>
- Miller, A., Eather, N., Gray, S., Sproule, J., Williams, C., Gore, J., & Lubans, D. (2017). Can continuing professional development utilizing a game-centred approach improve the quality of physical education teaching delivered by generalist primary school teachers? *European Physical Education Review*, 23(2), 171-195. <https://doi.org/10.1177/1356336X16642716>
- Makopoulou, K. (2018). An investigation into the complex process of facilitating effective professional learning: CPD tutors' practices under the microscope. *Physical Education and Sport Pedagogy*, 23(3), 250-266. <https://doi.org/10.1080/17408989.2017.1406463>
- Sum, K.W. R., Wallhead, T., Ha, S.C. A., & Sit, H.P. C. (2018). Effects of physical education continuing professional development on teachers' physical literacy and self-efficacy and students' learning outcomes. *International Journal of Educational Research*, 88, 1-8. <https://doi.org/10.1016/j.ijer.2018.01.001>
- Hünük, D., Tannehill, D., & Levent Ince, M. (2019). Interaction patterns of physical education teachers in a professional learning community. *Physical Education and Sport Pedagogy*, 24(3), 301-317. <https://doi.org/10.1080/17408989.2019.1576862>
- Makopoulou, K., Neville, R.D., Ntoumanis, N., & Thomas, G. (2021). An investigation into the effects of short-course professional development on teachers' and teaching assistants' self-efficacy. *Professional Development in Education*, 47(5), 780-795. <https://doi.org/10.1080/19415257.2019.1665572>
- Peralta, L.R., Bennie, A., Gore, J., & Lonsdale, C. (2020). An Investigation of the Influence of Video Types and External Facilitation on PE Inservice Teachers' Reflections and Their Perceptions of Learning: Findings from the AMPED Cluster Controlled Trial. *Journal of Teacher Education*, 72(3), 368-380. <https://doi.org/10.1177/002248712096407>
- Gonçalves, L.L., Parker, M., & Carbinatto, M.V. (2021). Community of practice and continuing professional development of physical education teachers in a Brazilian school. *Movimento*, 27. <https://doi.org/10.22456/1982-8918.113015>
- Sum, R.K. W., Wallhead, T., Wang, F.-J., Choi, S.-M., Li, M.-H., & Liu, Y. (2022). Effects of teachers' participation in continuing professional development on students' perceived physical literacy, motivation and enjoyment of physical activity. *Revista de Psicodidactica*, 27(2), 176-185. <https://doi.org/10.1016/j.psicod.2022.04.004>
- Deng, A., Zhang, T., Wang, Y., & Chen, A. (2022). Learning to Teach Again: What Professional Development Approach Matters? *Journal of Teaching in Physical Education*, 41(1), 78-87. <https://doi.org/10.1123/jtpe.2020-0121>
- Gonçalves, L.L., Parker, M., Luguetti, C., & Carbinatto, M. (2022). The facilitator's role in supporting physical education teachers' empowerment in a professional learning community. *Sport Education and Society*, 27(3), 272-285. <https://doi.org/10.1080/13573322.2020.1825371>
- Gonçalves, L., Parker, M., Luguetti, C., & Carbinatto, M. (2022). "We united to defend ourselves and face our struggles": nurturing a physical education teachers' community of practice in a precarious context. *Physical Education and Sport Pedagogy*, 27(4), 339-352. <https://doi.org/10.1080/17408989.2021.1891212>
- Muarifin, Nurhasan, & Suroto. (2022). Model-based Collaborative for Professionalism Development of Sports and Health Physical Education Teachers in Indonesia. *Pegem Egitim Ve Ogretim Dergisi*, 12(2), 10-17. <https://doi.org/10.47750/pegegog.12.02.02>
- Bjørke, L., Standal, Ø.F., & Mordal Moen, K. (2023). 'What we have done now is more student-centred': an investigation of physical education teachers' reflections over a one-year participatory action research project. *Educational Action Research*, 31(5), 946-963. <https://doi.org/10.1080/09650792.2022.2062407>
- Ferreira, H.J., Gonçalves, L., & Parker, M. (2023). Physical Education Teachers' Experiences of Nurturing a Community of Practice Online. *Journal of Teaching in Physical Education*, 42(3), 420-429. <https://doi.org/10.1123/jtpe.2021-0305>
- Lee, O., Griffiths, M., Goodyear, V., Jung, H., Son, H., Lee, U., & Choi, E. (2023). Influence of a professional development programme on the life skills teaching practices of secondary of PE teachers. *Sport Education and Society*, 28(8), 901-914. <https://doi.org/10.1080/13573322.2022.2095366>
- Colburn, J., Knipe, R., Doherty, B., Stephenson, R., & Hamilton, X. (2024). Remote Lesson Study as Continuing Professional Development for Physical Education Teachers. *Journal of Teaching in Physical Education*. 45(1), 109-117. <https://doi.org/10.1123/jtpe.2024-0010>
- Latino, F., Romano, G., & Tafuri, F. (2024). Physical Education Teacher's Continuing Professional Development Affects the Physiological and Cognitive Well-Being of School-Age Children. *Education Sciences*, 14(11). <https://doi.org/10.3390/educsci14111199>

- Yoon, K., Park, S., & Jung, H. (2024). What Makes Teachers' Professional Learning More or Less Effective?: An Evolution of Community of Practice for Physical Education Teachers. *Journal of Teaching In Physical Education*, 43(3), 377-386. <https://doi.org/10.1123/jtpe.2023-0005>
- Beddoes, Z., Quest, B., Starck, J., Silva, S., Stein, D., Rios, C., & Sazama, D. (2025). Using District-Wide Professional Learning Communities for Continuous Professional Development in Physical Education: A Promising Example. *Journal of Physical Education Recreation and Dance*, 96(2), 36-46. <https://doi.org/10.1080/07303084.2024.2437985>
- Marcelino, R. (2025). Beyond winning in physical education: The role of continuing professional development in fostering a learning-focused climate. *British Educational Research Journal*, 51, 2474-2490. <https://doi.org/10.1002/berj.4183>
- Milton, D., Bryant, A., Appleton, P.R., & Duda, J.L. (2025). Using the Principles from Community of Practice: Developing Sustainable Professional Development Programmes in Physical Education. *Education Sciences*, 15(6). <https://doi.org/10.3390/educsci15060713>
- Ní Chróinín, D., Parker, M., Coulter, M., Sweeney, T., Chróinín, D.N., Parker, M., Coulter, M., & Sweeney, T. (2025). Teachers learning to use student voice in primary physical education - ready, steady, go! *European Physical Education Review*, 31(2), 261-278. <https://doi.org/10.1177/1356336X241257455>
- Altun, S., & Yucel-Toy, B. (2023). Transformation of teachers through a collaborative-reflective training model: A case study on school-based professional development. *South African Journal of Education*, 43(si2), S1-S16. <https://doi.org/10.15700/saje.v43ns2a2235>
- Liebeck-Lien, B., Hammar Chiriach, E., & Davidson, N. (2023). Teachers' professional development for cooperative learning: A constructive controversy between long-term versus short-term professional development. *Autonomy and Responsibility Journal of Educational Sciences*, 8(1 SE-Workshop), 65-82. <https://doi.org/10.15170/AR.2023.8.1.5>
- Ventista, O.M., & Brown, C. (2023). Teachers' professional learning and its impact on students' learning outcomes: Findings from a systematic review. *Social Sciences & Humanities Open*, 8(1), 100565. <https://doi.org/10.1016/j.ssaho.2023.100565>
- Fletcher, T., Ní Chróinín, D.N., Gleddie, D., & Beni, S. (2021). *Meaningful physical education: An approach for teaching and learning*. Taylor and Francis. <https://doi.org/10.4324/9781003035091>
- Beni, S. (2017). Meaningful Experiences in Physical Education and Youth Sport: A Review of the Literature. *Quest*, 69(3), 291-312. <https://doi.org/10.1080/00336297.2016.1224192>
- Zhang, Z., Chen, P., & Deng, C. (2024). Teacher Agency and Continuing Professional Development in Chinese Universities. *Journal of Educational and Social Research*, 14(3), 1. <https://doi.org/10.36941/jesr-2024-0050>
- McMillan, D.J., McConnell, B., & O'Sullivan, H. (2016). Continuing professional development - why bother? Perceptions and motivations of teachers in Ireland. *Professional Development in Education*, 42(1), 150-167. <https://doi.org/10.1080/19415257.2014.952044>
- Ncube, G., & Ajani, O.A. (2025). Investigating the influence of teacher professional identity on the pedagogical approaches to number concept instruction in the Foundation Phase. *Cogent Education*, 12(1), 2574330. <https://doi.org/10.1080/2331186X.2025.2574330>

Переосмислення безперервного професійного розвитку у фізичному вихованні: систематичний огляд впровадження та механізмів педагогічної трансформації

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Авторський вклад: А – дизайн дослідження; В – збір даних; С – статаналіз; D – підготовка рукопису; Е – збір коштів

Реферат. Стаття: 13 с., 2 табл., 1 рис., 63 джерела.

Актуальність. Безперервний професійний розвиток (БПР) відіграє ключову роль у підвищенні якості викладання фізичного виховання (ФВ); однак його ефективність залишається нерівномірною та значною мірою залежить від контексту.

Мета. Це дослідження спрямоване на систематичне вивчення форм реалізації, результатів і впливів БПР у ФВ, а також на формування більш цілісного розуміння того, як БПР функціонує як процес професійного навчання.

Матеріали і методи. Систематичний огляд літератури проведено відповідно до рекомендацій PRISMA; відібрано 30 емпіричних досліджень, опублікованих у 2015–2025 роках у провідних наукових базах даних. Дані проаналізовано за допомогою тематичного синтезу для виявлення закономірностей у реалізації, тривалості та результатах.

Результати. Отримані дані свідчать, що БПР у ФВ реалізується через різноманітні моделі, зокрема семінари, професійні навчальні спільноти та практико-орієнтовані колаборативні підходи. Водночас ефективність визначається не

лише форматом чи тривалістю, а насамперед тим, наскільки БПР забезпечує стійку залученість, рефлексивну практику та контекстуальну релевантність. БПР сприяє підвищенню педагогічних знань учителів, удосконаленню навчальних практик, зростанню самоефективності та формуванню професійної ідентичності. Докази впливу на рівні учнів та інституцій вказують на підвищення залученості, інклюзивності та якості освітнього середовища, хоча ці ефекти є опосередкованими і залежать від умов реалізації.

Висновки. БПР у ФВ доцільно розглядати як динамічний багаторівневий процес професійного навчання, що формується у взаємодії індивідуальних, соціальних та інституційних чинників. Отримані результати підкреслюють необхідність розроблення контекстно чутливих і сталих моделей БПР, здатних забезпечити змістовну педагогічну трансформацію.

Ключові слова: безперервний професійний розвиток, фізичне виховання, навчання вчителів, педагогічна трансформація

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