



Review. Peer microteaching as a pedagogical tool in Physical Education teacher education: systematic review. Vol. 12, n. ° 4; p. 1-32, August 2026. <https://doi.org/10.55040/51grz803>

Peer microteaching as a pedagogical tool in Physical Education teacher education: systematic review

La microenseñanza entre pares como herramienta pedagógica en la formación del profesorado de Educación Física: revisión sistemática

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Abstract

Peer microteaching has become established as a key pedagogical tool in initial teacher education, enabling prospective teachers to rehearse practices in controlled settings, receive targeted feedback, and engage in critical reflection on their performance. In physical education, its potential is particularly significant given the highly situational, practical, and relational nature of teaching in motor-learning contexts. This systematic review aims to identify and analyze the uses, pedagogical approaches, and reported effects of peer microteaching in physical education teacher education programs. The PRISMA guidelines were followed to identify studies published between 2000 and 2025 in Scopus, Web of Science, ERIC, SPORTDiscus, and ProQuest. PICOS criteria were applied for search and selection. In total, 363 documents were retrieved, of which 17 met the eligibility criteria. The methodological quality of the selected studies was appraised using the Mixed Methods Appraisal Tool (MMAT). The findings are organized into four interrelated dimensions: a) attitudes, self-efficacy, and professional confidence; b) instructional competences and pedagogical decision-making; c) pedagogical reflection, feedback, and practice-based learning; and d) curricular and contextual conditions of physical education teacher education. Overall, the evidence indicates that microteaching, when implemented through reflective and dialogic approaches, emerges as a promising pedagogical mechanism for early professional development in physical education. However, current evidence relies largely on self-report measures and short-term designs and should be interpreted with caution.

Keywords: peer microteaching; physical education teacher education; practice-based teacher education; pedagogical judgment.

Resumen

La microenseñanza entre pares se ha consolidado como una herramienta pedagógica clave en la formación inicial docente, ya que permite a los futuros profesores ensayar prácticas de enseñanza en contextos controlados, recibir retroalimentación focalizada y participar en procesos de reflexión crítica sobre su desempeño. En Educación Física, su potencial resulta especialmente relevante debido al carácter altamente situado, práctico y relacional de la enseñanza en contextos de aprendizaje motor. El objetivo de esta revisión sistemática fue identificar y analizar los usos, enfoques pedagógicos y efectos reportados de la microenseñanza entre pares en programas de formación inicial de profesores de Educación Física. Para ello, se siguieron las directrices PRISMA y se identificaron estudios publicados entre los años 2000 y 2025 en las bases de datos Scopus, Web of Science, ERIC, SPORTDiscus y ProQuest. La búsqueda y selección de los estudios se realizó mediante la aplicación de los criterios PICOS. En total, se recuperaron 363 documentos, de los cuales 17 cumplieron con los criterios de elegibilidad establecidos. La calidad metodológica de los estudios incluidos fue evaluada mediante la herramienta Mixed Methods Appraisal Tool (MMAT). Los hallazgos se organizaron en cuatro dimensiones interrelacionadas: a) actitudes, autoeficacia y confianza profesional; b) competencias didácticas y toma de decisiones pedagógicas; c) reflexión pedagógica, retroalimentación y aprendizaje basado en la práctica; y d) condiciones curriculares y contextuales de la formación inicial del profesorado de Educación Física. En conjunto, la evidencia sugiere que la microenseñanza, cuando se implementa a través de enfoques reflexivos y dialógicos, constituye un mecanismo pedagógico prometedor para favorecer



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el desarrollo profesional temprano de los futuros docentes de Educación Física. No obstante, la evidencia disponible se sustenta principalmente en medidas de autorreporte y diseños de corto plazo, por lo que sus resultados deben interpretarse con cautela.

Palabras clave: microenseñanza entre pares; formación del profesorado de educación física; formación docente basada en la práctica; juicio pedagógico.

Introduction

Initial teacher education faces the challenge of integrating theoretical knowledge, practical competencies, and reflective frameworks that enable prospective teachers to respond to the complexity of teaching in real-world settings (Darling-Hammond, 2017). This challenge becomes particularly salient in Physical Education (PE), where teachers must simultaneously manage teaching and learning processes, motor dynamics, safety, emotional climate, diverse skill levels, and assessment within contexts marked by high situational unpredictability (Ennis, 2016). Within this landscape, pedagogical models in PE are essential for structuring instruction, ensuring coherence between objectives, tasks, and assessment, and fostering learners' active, autonomous, and motivated participation (Fernández-Rio et al., 2016; Pérez-Pueyo et al., 2020). Their implementation guides decision-making in complex motor situations, supports pedagogical innovation, and contributes to the creation of inclusive and meaningful learning experiences. From this perspective, microteaching is a pedagogical tool that provides structured opportunities to develop teaching skills in authentic yet controlled settings (Iliasova et al., 2025).

Introduced by Allen and Ryan (1969), microteaching is conceived as a space for practicing reduced segments of teaching focused on specific skills, supported by expert observation and immediate feedback. Its purpose is to provide a low-stakes environment in which to rehearse pedagogical decision-making, improve teaching skills, and strengthen the capacity to analyze and adjust practice before entering real classroom contexts (López et al., 2024; Orellana, 2023). Over time, this approach has evolved from a technical logic centered on discrete skills to a more reflective, situated, and collaborative perspective, aligned with contemporary traditions of reflective practice in teacher education (Brookfield, 2017; Zeichner & Liston, 2013). Within these traditions, professional learning is conceptualized as emerging through iterative cycles of enactment, feedback, and critical reflection, positioning microteaching as a structured space for developing pedagogical judgment rather than merely rehearsing technical behaviors.

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In PE, microteaching is relevant given the embodied and interactive nature of the subject, which requires competencies that are difficult to develop solely through theoretical instruction (Casey & MacPhail, 2018). Recent research highlights demands specific to the field, such as managing groups in movement, motor communication, tactical anticipation of pupils' behavior, and emotional regulation in fluctuating contexts (Langnes & Bratten, 2025). Microteaching provides a protected learning situation in which to approach these demands progressively, without the risks or pressures associated with real teaching practice (Hama & Osam, 2021), enabling prospective teachers to strengthen their performance before entering schools.

The uses of microteaching in PE are diverse. Some programs employ it to develop communicative competences related to instructional clarity, motor engagement time, and the relevance of feedback (Viciana, 2016). Others emphasize its potential for fostering reflection through video recordings, allowing students to contrast their performance with professional criteria or theoretical frameworks (Pham, 2017). Its contribution to the enhancement of self-efficacy, understood as the perceived capacity to teach effectively (Yüksel, 2014), has also been demonstrated, a key aspect during the transition to school-based practice.

Most university programs implement peer microteaching (Arslan, 2021; Marsono et al., 2024). However, the literature also documents variations such as microteaching with real pupils (Asma, 2023; Garbett & Ovens, 2012), simulations involving actors or virtual avatars (Jacobsen et al., 2025), and online or video-based formats (Raharjo et al., 2025). All these modalities provide structured spaces in which students can progressively rehearse, observe, and reflect on their teaching actions safely and effectively.

Within these modalities, peer microteaching is particularly common, as it enables students to assume temporary roles as teacher and pupil in order to simulate real situations (Fernández & Robinson, 2006). Its implementation aligns with the dynamics of university courses, where peers themselves constitute the available human resource for recreating teaching scenarios (İlhan et al., 2023). This fosters collaborative and critical environments in which students can practice, receive feedback, and adjust their instructional actions immediately (Amobi & Irwin, 2009).



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In PE, peer microteaching has been shown to enhance communicative skills, clarity of instructions, management of motor engagement time, and the application of formative feedback, while also strengthening perceived professional confidence prior to school placements (Balci & Yanik, 2023; Tannehill et al., 2013; Zhou, 2024). It also facilitates dialogic processes of reflection and co-evaluation, which are essential for the development of professional judgment (Dayal & Alpana, 2020; Park, 2022). The literature describes a shift from behaviorist approaches centered on repetition and prescriptive correction toward reflective, dialogic, and situated models. Within these approaches, the integration of cycles of observation, analysis, feedback, and reteaching takes on a central role (Zeichner & Liston, 2013), further strengthened by the use of video as a tool for reflection (Hamel & Viau-Guay, 2019). From these frameworks, microteaching is directly linked to the development of PE-specific teaching competences. Evidence shows improvements in the clarity of instructions, the effectiveness of motor demonstrations (Viciana & Mayorga-Vega, 2016), the organization of motor engagement time, and the regulation of space (Langnes & Bratten, 2025; Purwanti & Suhargo, 2024). There is also consistent evidence of enhanced motor feedback and critical reflection through video-based analysis, enabling prospective teachers to identify errors and adjust tasks according to pupils' performance (Amobi & Irwin, 2009). However, limitations have also been identified. Some studies have noted that when microteaching is implemented within an overly technical framework, it may encourage mechanical practices with limited pedagogical questioning (Crichton et al., 2021). Additionally, simulated scenarios may become overly artificial, reducing the authenticity of learning and hindering the transfer of skills to real-world practice (Msimanga, 2020). In PE, this tension is particularly salient given the need to manage real movement situations and diverse learners. For this reason, several studies highlight the importance of integrating microteaching with reflective frameworks and situated experiences that connect with authentic teaching (Casey & Kirk, 2021).

In sum, microteaching (particularly in peer-based formats) occupies a central place in Physical Education Teacher Education (PETE) by integrating practice, feedback, and reflection within a risk-reduced simulation setting. Nonetheless, the available evidence is dispersed and heterogeneous, with studies differing widely in their aims, implementation



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modalities, and reported outcomes. To date, no systematic review has synthesized, in an integrated manner, the uses, pedagogical approaches, effects, and limitations of peer microteaching in initial PETE. This gap limits our understanding of its formative scope and the conditions under which it is most effective.

Although the term “microteaching” has been used in the literature to describe a range of rehearsal-based instructional practices, this review adopts a specific operational definition of peer microteaching. For this study, peer microteaching refers to structured, short-duration teaching rehearsals conducted within university settings in which pre-service teachers assume alternating teacher–student roles and engage in guided feedback and reflective analysis cycles. This definition distinguishes peer microteaching from broader forms of peer teaching, extended school-based practicum experiences, or full-length lesson delivery. At the same time, the review recognizes that contemporary implementations may incorporate technological simulations (e.g., video-based or virtual reality formats) or hybrid arrangements, provided that they retain the core features of rehearsal, peer enactment, structured feedback, and formative intent.

Addressing this gap, the present review is guided by the following questions: a) How is peer microteaching used and conceptualized in PE teacher education? b) What formative outcomes are reported in the available empirical studies? and c) What limitations and challenges are identified in its implementation?

In response to this scenario, this study aims to conduct a systematic review that identifies and analyzes the uses, pedagogical approaches, and reported effects of microteaching in initial PETE. The principal contribution of this review is to offer a comprehensive and up-to-date characterization that clarifies which formative dimensions are strengthened, under what pedagogical conditions they function most effectively, and how these findings may inform curricular and instructional design decisions in university-level PE programs.

Methods

This systematic review was conducted in accordance with the guidelines established by the PRISMA 2020 statement (Preferred Reporting Items for Systematic Review and Meta-Analyses) (Page et al., 2021). Likewise, the principles of the UNESCO Universal Declaration on Bioethics and Human Rights were considered to ensure the responsible



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use of scientific evidence. The review protocol was registered in the Open Science Framework (OSF) and is available at <https://doi.org/10.17605/OSF.IO/WKCYV>

Search and Selection Process

The search was conducted across Scopus, Web of Science, ERIC, SPORTDiscus, and ProQuest, as these databases cover most of the publications indexed in PETE, including the journals with the highest impact in the field. The search covered publications from 2000 to 2025, provided that the full text was available in English or Spanish. Two thematic search blocks were defined for this procedure. The first corresponded to the context: “physical education teacher education”, “pre-service physical education teachers”, “pre-service PE teachers”, “initial physical education teacher training”, “physical education teacher preparation”, “PETE programs”, “physical education teacher education programs”, “PETE”. The second block included terms related to the intervention: “microteaching”, “lesson simulation”, “peer teaching”, “teaching rehearsal”, “simulated teaching practice”, “teaching practicum”.

The intervention block deliberately included broader pedagogical terms (e.g., "peer teaching", "teaching practicum", "lesson simulation", "teaching rehearsal"). This decision followed the principle, recommended for systematic searching, of prioritizing sensitivity over precision at the identification stage, so as not to overlook relevant studies that describe peer-microteaching practices under alternative or non-standardized labels (Lefebvre et al., 2019). Precision was therefore not pursued through the search terms themselves but through the screening process: every record was assessed against the operational definition of peer microteaching adopted in this review (see Introduction) and the PICOS eligibility criteria. Accordingly, studies retrieved under broader terms such as "peer teaching", "teaching practicum", or "lesson simulation" were retained only when the practice constituted a structured, short-duration, university-based teaching rehearsal involving alternating teacher–student peer roles and structured feedback; records describing full-length lesson delivery, extended school-based placements, or peer teaching unrelated to rehearsal were excluded. This combination of a sensitivity-oriented search with definition-driven screening explains the substantial number of records excluded at the eligibility stage for not addressing the phenomenon of interest (n = 18).



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Notably, several of the finally included studies were framed by their own authors as "peer teaching" or "teaching rehearsals" rather than "microteaching", confirming that the broader terms were necessary to capture conceptually relevant evidence that a narrower search would have missed.

To ensure full reproducibility, the complete search strings executed in each database (including field tags, applied filters, language restrictions, and the date of the last search) are openly available in a supplementary document deposited in <https://doi.org/10.6084/m9.figshare.31807417>.

Inclusion and Exclusion Criteria

The studies selected for this review were evaluated according to criteria defined using the PICOS framework. Regarding the population (P), empirical research involving pre-service PE teachers was included. The intervention (I) corresponded to structured peer microteaching experiences. Studies employing peer teaching or didactic simulations were included only when these practices functioned as short, rehearsal-based, feedback-oriented instructional segments consistent with the operational definition of peer microteaching adopted in this review. For the comparator (C), study designs with or without comparison groups were accepted. The outcomes (O) had to report effects, perceptions, or learning derived from participation in these practices. Regarding study design (S), only empirical studies published in peer-reviewed journals were included.

The screening process was managed using the Rayyan platform, where two reviewers independently assessed titles, abstracts, and full texts. Articles excluded at the full-text stage were removed for failing to address the phenomenon under study, not being situated within initial teacher education, or not incorporating peer microteaching experiences. Discrepancies were resolved by consensus and, when necessary, with the support of a third reviewer.

Assessment of Methodological Quality

The methodological quality of the included studies was appraised using the Mixed Methods Appraisal Tool (MMAT), version 2018 (Hong et al., 2018). The MMAT was selected because it is specifically designed to appraise the methodological quality of



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qualitative, quantitative, and mixed-methods studies within a single systematic review, thereby providing a coherent, design-sensitive framework for a methodologically heterogeneous corpus. The tool comprises two initial screening questions and five core criteria tailored to each of five study-design categories: qualitative research, quantitative randomized controlled trials, quantitative non-randomized studies, quantitative descriptive studies, and mixed-methods studies.

Two reviewers independently appraised each study, and discrepancies were resolved through discussion until consensus was reached. In accordance with the developers' recommendations (Hong et al., 2018), each criterion was rated as met (✓), partially met (●), or not met (✗), and the results were used descriptively. Consistent with current methodological guidance (Hannes & Macaitis, 2012; Lewin et al., 2015), the appraisal was not used as an exclusion threshold but to inform the interpretation of findings.

Because the MMAT addresses key sources of bias across study designs, it was also used to assess study-level risk of bias. Given the small number of controlled or comparative studies, no additional risk-of-bias tools were applied. MMAT findings informed the synthesis and interpretation of results but were not used as exclusion criteria. The complete appraisal is presented in Table 1.



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Table 1. Methodological quality MMAT (Mixed Methods Appraisal Tool)

Study	Design category	S1	S2	C1	C2	C3	C4	C5
Asma (2023)	Qualitative	✓	✓	●	●	✓	●	●
Dervent (2015)	Qualitative	✓	✓	✓	✓	✓	✓	✓
Esser-Noethlichs et al. (2024)	Qualitative	✓	✓	✓	✓	✓	✓	✓
Garbett & Ovens (2012)	Qualitative	✓	✓	✓	✓	✓	✓	✓
Langnes & Bratten (2025)	Qualitative	✓	✓	✓	✓	✓	✓	✓
Lee & Choi (2013)	Qualitative	✓	✓	✓	✓	✓	✓	✓
Liu et al. (2022)	Qualitative	✓	✓	✓	✓	✓	✓	✓
Wang & Ha (2013)	Qualitative	✓	✓	✓	✓	✓	✓	✓
Apriani et al. (2020)	Quantitative descriptive	✓	●	●	✓	●	✓	●
Balci & Yanik (2023)	Quantitative descriptive	✓	●	●	✓	✓	✓	●
Abakay et al. (2016)	Quantitative non-randomized	✓	✓	✓	●	●	✓	✓
Beseler et al. (2023)	Quantitative non-randomized	✓	✓	✓	✓	●	✓	✓
Isebert & Coolkens (2018)	Quantitative non-randomized	✓	✓	✓	✓	●	✓	✓
Gunardi et al. (2023)	Mixed methods	✓	●	✓	✓	✓	●	●
Jacobsen et al. (2025)	Mixed methods	✓	✓	✓	✓	✓	●	●
Raharjo et al. (2025)	Mixed methods	✓	●	✓	✓	✓	✓	●
Ward et al. (2018)	Mixed methods	●	●	✓	✓	✓	✓	✓

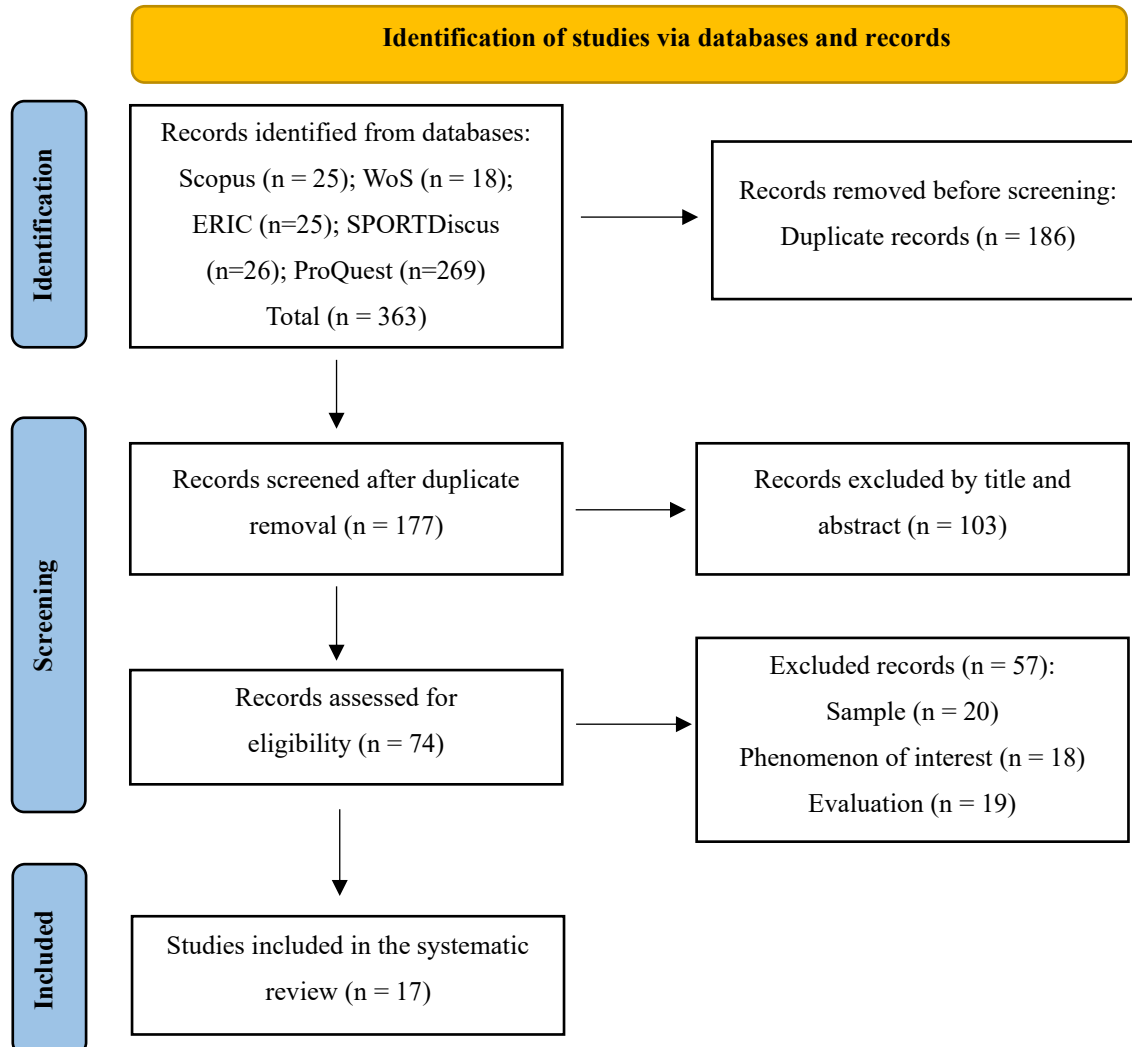
Note. Screening questions (all designs): S1 = clear research questions; S2 = data adequate to address them. C1–C5 denote design-specific criteria. For qualitative studies, criteria assessed methodological appropriateness, data collection, data-derived findings, interpretation, and coherence. For quantitative non-randomized studies, they assessed representativeness, measurement quality, completeness of outcomes, confounding control, and intervention fidelity. For quantitative descriptive studies, they assessed sampling, representativeness, measurement quality, nonresponse bias, and statistical analysis. In mixed-methods studies, they assessed the rationale, integration, interpretation, management of divergences, and the quality of individual components.

Results

During the identification process, 363 records were initially retrieved. After applying filters, 186 duplicate documents were removed. In a second stage, titles and abstracts were screened, leading to the exclusion of 103 studies. Subsequently, 57 articles were excluded after full-text analysis. As a result, 17 studies were selected (Figure 1).

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Figure 1. PRISMA flow diagram of the identified studies



To facilitate comparison across studies, a five-column matrix was developed (table 2). Notably, standardized effect sizes were rarely reported across the corpus, even in quantitative studies, which limits the ability to gauge the magnitude of the reported effects and reinforces the cautious interpretation adopted in this review.



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Table 2. Data extraction matrix of the selected studies

Author	Type of experience	Variables analyzed	Sample	Key findings	Main limitations
Abakay et al.	Microteaching 13 weeks	Attitudes toward the teaching profession	60 PETE students	Microteaching positively influences attitudes toward the teaching profession in PE	Self-report scale; no control group; single cohort
Apriani et al.	Microteaching practice: peer teaching model; 20-minute interventions	Self-confidence; microteaching skills	211 PETE students	Self-confidence levels and microteaching skills are sufficient but still capable of improvement	Self-report only; no performance measure
Asma	Peer microteaching (4 weeks) and microteaching with school pupils (11 weeks)	Teaching-skill development; feedback; anxiety	16 PETE students	Peer microteaching enhances learning through feedback and video recording, strengthens social skills, and reduces anxiety	Small single-cohort sample; limited transferability
Balci & Yanik	Microteaching on teaching styles; 14 weeks	Perceptions of teaching styles	31 PETE students	Generates partially positive effects on the adoption of student-centered styles (inclusion and guided discovery)	Small sample; perception measure; no control
Beseleir et al.	Reciprocal peer-teaching instructional intervention; 1 session	Perceived instructional effectiveness	47 PETE students	Accelerates the development of teaching skills and enhances perceived instructional effectiveness	Very short (single session); small groups; self-report outcome
Dervent	Microteaching within a 10 week.	Reflective thinking; planning; time management	10 preservice PE teachers	Microteaching combined with reflective strategies improved planning, time management, use of facilities, and professional awareness	Small sample; single-context action research



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Esser-Noethlich et al.	Core reflection with peer teaching; 1 semester	Core reflection; teaching qualities	38 third-year PETE students	Peer feedback enhances understanding of teaching qualities and makes reflection more meaningful	Single cohort; reflective self-report
Garbett & Ovens	Peer microteaching integrated within teacher education courses; 3 years of interventions	Group management; confidence; reflection	N/A	Prepares students to face real teaching; improves group management, feedback, professional confidence, and pedagogical reflection	Self-study; limited generalizability
Gunardi et al.	Microteaching training experience	Preparedness; support; practical performance	80 students	Shows moderate preparedness, insufficient teacher support, and practical performance rated only as adequate	Self-report dominant; single programme
Isebert & Cookkens	Microteaching including peer-teaching rotations and group discussions. 4 weeks	Instructional task categories; SCK index	18 PETE students	Microteaching significantly increased the number and sequencing of instructional tasks	Very small n; single-group pre/post, no control
Jacobsen et al.	Simulated microteaching in VR and real microteaching	Feedback quality & perception (VR vs real)	150 participants	VR microteaching generates perceptions similar to real formats, but with lower specificity regarding teaching actions	Feedback-perception focus; VR/real comparability
Langnes & Bratton	Microteaching in dance and LpLe activities with guided peer reflection	Embodied experience; communication; leadership	49 PETE students	Enhances emotional experience, bodily self-connection, communication, leadership, and a more conscious teaching presence	Reflective self-report; single context



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Lee & Choi	Microteaching with peers working in pairs	Reflection via peer coaching	10 participants	Peer coaching reduces barriers to reflection, connects planning–instruction–reflection	Small sample; single course
Liu et al.	Peer-teaching activities and practical laboratory tests embedded in assessment courses	Preparation for fitness assessment	7 PETE programs across five universities	Preparation depends on theory, demonstrations, and peer-teaching practice, but is limited by lack of time and real experiences	Faculty perspective only; small n
Raharjo et al.	Online microteaching in a laboratory setting, organised in small groups	Online microteaching competence; satisfaction	132 PETE students	Although satisfaction with online microteaching is high, actual performance remains only fair	Online context; performance only "fair"; single cohort
Wang & Ha	University peer teaching in which PSTs practice TGfU by teaching one another in repeated sessions before the practicum	Understanding/application of TGfU	10 PETE students	Peer teaching to rehearse TGfU supports conceptual understanding, but peer practice is perceived as limited, and with weak transfer	Small sample; perceived unrealistic; weak transfer
Ward et al.	Structured peer teaching: laboratory-based teaching rehearsals with PETE students	Confidence; pedagogical analysis	PETE students	Increases confidence, improves pedagogical analysis, promotes observational learning, and facilitates instructional adjustments	Possibly non-empirical; no systematic outcome data

Based on a comparative cross-analysis of the aims, methodological designs, implementation structures, and reported outcomes of the 17 included studies, a four-dimensional thematic stratification was developed (table 3). Rather than grouping studies



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by methodological approach, the stratification was constructed inductively to reflect the primary formative function attributed to peer microteaching in each study. This analytical process involved examining (a) the declared educational purpose of microteaching, (b) the specific pedagogical or structural focus of the intervention, and (c) the dominant category of reported outcomes. Through iterative coding and comparison, four macro-dimensions emerged: (1) professional skill development, (2) pedagogical knowledge construction, (3) modality and feedback, and (4) programmatic and curricular framing. This structure allows for a more conceptually coherent understanding of how peer microteaching operates across PETE contexts.

Table 3. Thematic synthesis and specific contribution of the reviewed studies

Dimension	Author(s) / year
Microteaching as Professional Skill Development	Abakay et al. (2016), Apriani et al. (2020), Asma (2023), Dervent (2015), Langnes & Bratten (2025).
Microteaching as Pedagogical Knowledge Construction	Balcı & Yanık (2023), Isebert & Coolkens (2018), Lee & Choi (2013), Wang & Ha (2013), Ward et al. (2018).
Modality and Feedback in Microteaching	Beseler et al. (2023), Jacobsen et al. (2025), Raharjo et al. (2025).
Programmatic and Curricular Framing of Microteaching	Esser-Noethlichs et al. (2024), Garbett & Ovens (2012), Gunardi et al. (2023), Liu et al. (2022).

*Although several studies addressed overlapping outcomes, each was classified according to its primary formative focus as identified in the stated aim and dominant findings.

Building upon the thematic stratification presented above, a second-level analytical synthesis was conducted to clarify the formative functions that peer microteaching performs within PETE programs. While the previous classification organised the studies according to their primary thematic focus, the present synthesis shifts the analytical lens toward the epistemological and pedagogical role attributed to microteaching across contexts.

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Specifically, this functional mapping examines: (a) how microteaching is positioned within each study, and (b) the dominant mechanisms through which learning or evidence is produced. This additional layer of analysis enables a more precise understanding of how peer microteaching operates—not merely what outcomes are reported, but how those outcomes are constructed within specific pedagogical configurations (table 4).

Table 4. Functional stratification and specific contribution of peer microteaching in PETE

Function	Pedagogical role of microteaching	How learning/evidence is produced
Professional skill development	Microteaching operates as a rehearsal space to build teaching confidence, professional stance, and embodied/interactional competence (planning, management, communication, affective regulation).	Cycles of short teaching performances + peer/instructor feedback; reflective journaling/video review; repeated enactment and adjustment of teaching moves; emphasis on perceived competence and professional growth indicators.
Pedagogical knowledge construction	Microteaching functions as a knowledge-building device to develop pedagogical reasoning (e.g., teaching styles, model-based teaching understandings) and content-specific teaching knowledge (task progressions/SCK).	Comparative work on lesson design + enactment; content mapping / task-sequencing artefacts; guided debriefs focused on pedagogical principles; interviews exploring understanding across actors (PSTs/mentors/supervisors).
Modality and feedback	Microteaching is treated as an architected environment where the modality (VR/video/online) shapes the quality, uptake, and credibility of peer feedback and the transfer of performance to “real” teaching contexts.	Mode-comparative designs (VR vs in-person; video vs verbal; online vs offline); measurement of feedback quality/acceptance; performance assessments and perception–performance alignment analyses.
Programmatic and curricular framing	Microteaching is positioned as a curricular and institutional practice whose impact depends on program design, supervision, authenticity/safety conditions, and the alignment between microteaching and practicum demands.	Program evaluation frameworks; self-study/instructor inquiry; analysis of implementation conditions (authenticity, safety, roles); faculty perspectives on preparation and curricular coherence.

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Discussion

The included studies reveal notable diversity, with a predominance of research oriented toward the development of teaching skills, self-efficacy, and the understanding of pedagogical approaches in simulated contexts. Methodologically, qualitative designs such as case studies and reflective analyses predominate, alongside a smaller number of quantitative studies based on questionnaires or performance measures. Most participants were pre-service PE teachers in the early or intermediate stages of their programs, which shaped the levels of experience and depth of reflection observed. This overview helps delineate the scope and limitations of microteaching in initial PE teacher education.

Examined collectively, several cross-cutting patterns emerge. First, microteaching appears most effective when embedded within structured cycles of planning, enactment, and reflective feedback rather than implemented as a one-off activity; studies incorporating iterative rehearsal and guided reflection consistently reported stronger gains in self-efficacy, pedagogical decision-making, and reflective awareness. Second, its pedagogical impact depends strongly on the quality of feedback, particularly when feedback is dialogic, peer-supported, and scaffolded by instructors. Third, microteaching functions differently depending on its modality, with peer-based rehearsals, technology-mediated simulations, and school-based enactments each generating distinct opportunities and constraints. These patterns suggest that microteaching is not an isolated technique but a structured pedagogical cycle that supports the gradual development of professional judgment.

Rather than functioning merely as a simulation technique, microteaching thus operates as a pedagogical space that integrates practice, reflection, and professional development, enabling prospective teachers to rehearse and refine their repertoire without the pressures of real classrooms. The evidence positions it as a safe and structured approach to teaching practice (Remesh, 2013; Ryan & Ryan, 2025), consistent with contemporary perspectives on situated and practice-based learning (Kavanagh et al., 2024; Mancenido et al., 2025; Zeichner, 2023).

Across the first dimension (attitudes, self-efficacy, and professional confidence) studies consistently report enhanced perceptions of preparedness and greater confidence in managing pedagogical situations after microteaching. This aligns with the literature,



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which identifies self-efficacy as a central predictor of teacher commitment and the capacity to cope with classroom complexity (Zee & Koomen, 2016). However, several studies highlight a gap between declared confidence and observable performance, warning of the tendency for simulated contexts to produce "inflated self-efficacy" in the absence of expert modeling or specialized feedback (Klassen & Tze, 2014). In PE, this is especially relevant, given the affective and motor interactions that are not always present in peer-based simulations (Whipp et al., 2015). Its impact, therefore, depends on strong professional support during practice (Al-Sinani, 2018), suggesting that initial confidence is a starting point rather than an endpoint.

The second dimension (instructional competences and pedagogical decision-making) shows consistent progress in content sequencing, the structuring of motor tasks, and the strategic use of feedback, aligning with literature on the value of simulated practice for rehearsing strategies before facing the unpredictability of real classrooms (Metzler, 2017). However, a recurring limitation emerges: transfer to authentic school contexts is only partial. The lack of student heterogeneity, motor uncertainty, and situational variability reduces opportunities to develop real-time pedagogical adaptations (Grossman et al., 2009a; Ward, 2021). Microteaching, therefore, contributes to instructional skills, but its impact depends on access to more authentic experiences (Moy et al., 2023).

The third dimension (pedagogical reflection, feedback, and practice-based learning) positions microteaching as a privileged space for deep reflection and the development of professional judgment, particularly when it incorporates video recording and guided analysis. Studies integrating video-based analysis, peer evaluation, and guided reflection report substantial improvements in trainees' ability to interpret their practice beyond superficial observation, consistent with reflective analysis as a core component of teacher learning (Brookfield, 2017). Although technologies expand the environments available for practice, they still present limitations in the specificity of feedback and the perceptual richness required for the motor complexity of PE (Ferdig et al., 2020). Microteaching thus enhances reflection only when supported by expert mediation, high-quality feedback, and robust analytical tools (Ryan & Ryan, 2024), in line with principles of formative and shared assessment (Gallardo-Fuentes et al., 2017), where dialogic feedback, peer co-

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assessment, and guided self-assessment regulate professional learning (Barba-Martín et al., 2020).

The fourth dimension (curricular and contextual conditions) reveals persistent tensions that limit microteaching's formative impact, stemming from inconsistencies between theory and practice and from hierarchical dynamics that constrain pedagogical autonomy (Molina et al., 2023; Ovens et al., 2013). These parallel research questioning curricular coherence in PE teacher education, where traditional methods, hierarchical structures, and weak alignment between discourse and practice prevail (Kirk, 2009; O'Sullivan & Parker, 2020). Literature on embodiment (Hordvik et al., 2025; Volshøj et al., 2024) further frames microteaching as a space shaping not only technical skills but teacher presence, bodily communication, and emotional regulation, broadening understandings of teacher learning by foregrounding affective dimensions (Panganiban et al., 2021; Simonton et al., 2021).

Examined holistically, the four dimensions function as an interdependent formative process: initial self-efficacy motivates action (Octoria et al., 2024), instructional competences provide technical tools (Cañadas et al., 2019), reflection refines professional judgment (Li, 2025), and curricular and embodied dimensions situate learning in authentic contexts (Hegna & Ørbæk, 2024; Puoti et al., 2025). This articulation reveals tensions that can only be addressed through more integrated and progressive training designs (Aparicio-Herguedas et al., 2023; Derwent et al., 2018). Accordingly, microteaching's formative value depends on the didactic design, the type of simulation, task authenticity, the quality of reflective support, and follow-up, reaching its full potential when combined with progressive practice, specialized feedback, situational variability, and a close connection to real teaching experiences (Jin et al., 2013).

These insights align microteaching with broader discussions on signature pedagogies in teacher education (Shulman, 2005), as it integrates simulated practice, situated feedback, and guided reflection (Grossman et al., 2009b). Debates on embodiment enrich the perspective, since pedagogical interaction in PE is inherently bodily and demands attention to gesture and physical presence even in simulated contexts (Aartun et al., 2022). It also connects with authentic assessment in PETE: by engaging teachers in decision-making, pedagogical reasoning, and situated feedback, microteaching serves as an

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evaluative mechanism that more closely reflects the demands of real classrooms (Darling-Hammond & Snyder, 2000).

A further implication concerns the specific conditions of PE. Unlike many subjects, teaching PE involves embodied interaction, real-time motor demonstrations, spatial organization of learners, and constant attention to safety and movement dynamics, which make instructional decision-making highly situational and difficult to rehearse through purely theoretical preparation. Microteaching offers a space to practice instructional communication, movement demonstrations, and spatial management before entering full school settings, and is particularly well suited to PETE programs, helping bridge the gap between theoretical preparation and the embodied realities of teaching PE.

Although the overall pattern is favorable, the evidence is not uniform. A notable divergence emerges according to the type of outcome measure: studies relying on self-reported attitudes, confidence, or perceptions tend to report clearly positive results (e.g., Abakay et al., 2016; Apriani et al., 2020; Balci & Yanik, 2023), whereas those incorporating performance-based or behavioral indicators report more qualified outcomes, describing preparedness or performance as only "moderate" or "fair" (Gunardi et al., 2023; Raharjo et al., 2025). Part of the optimism surrounding peer microteaching stems from the predominance of subjective measures rather than from demonstrable changes in competence, with favorable perceptions not necessarily translating into observable performance.

Differences also appear shaped by contextual and design factors. Intervention duration varied considerably, from a single session (Beseler et al., 2023) to programs of 10 to 14 weeks (Abakay et al., 2016; Balci & Yanik, 2023; Dervent, 2015) or combinations of peer- and school-based phases (Asma, 2023), limiting the comparability of effects. Delivery modality also moderated outcomes, with virtual and online formats yielding perceptions comparable to those of traditional formats but with lower specificity or weaker performance (Jacobsen et al., 2025; Raharjo et al., 2025). Finally, studies embedding structured, dialogic reflection and feedback reported deeper professional learning (Dervent, 2015; Esser-Noethlichs et al., 2024; Lee & Choi, 2013), suggesting that pedagogical design, rather than mere implementation, is decisive.



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These observations must be read in light of the methodological limitations of the evidence base. The corpus is dominated by small, single-cohort, single-institution samples, which constrains generalizability; controlled or comparative designs are scarce, randomization is largely absent, and outcome assessors were not blinded, all of which heighten the risk of bias in the reported effects (see Table 1). Limitations such as limited transfer to authentic contexts, insufficient expert modeling, and curricular inconsistencies have likewise been reported internationally (Hordvik & Beni, 2024; Iliasova et al., 2025; Vuong & Phuong, 2025). Moreover, the studies were concentrated in a limited set of national contexts, so cultural, curricular, and institutional differences may partly account for divergent findings and caution against broad generalization. Overall, while peer microteaching is consistently associated with perceived benefits, the strength and transferability of the evidence supporting it remain uneven.

Conclusions

The findings of this review suggest that peer microteaching can play a valuable formative role in PETE when embedded in a coherent, progressive curriculum. The evidence indicates that it may contribute to the development of self-efficacy, instructional competence, and reflective capacity, while also fostering prospective teachers' awareness of the embodied, interpersonal, and contextual dimensions that characterize PE teaching. These outcomes point to its potential as an important component of early professional learning. This potential, however, must be read with caution: the available evidence rests largely on self-reported and perception-based measures and on studies with limited methodological control, so the reported benefits should be regarded as promising but provisional rather than firmly established.

In particular, the benefits of microteaching are constrained by the artificiality of simulated settings. Because peer-based rehearsals lack the heterogeneity of real pupils, the motor and situational uncertainty of authentic gymnasias, and the affective pressures of genuine teaching, the competences developed do not necessarily transfer to real classrooms. Several of the included studies explicitly described peer practice as limited, unrealistic, or weakly connected to authentic teaching, and this gap (far from being incidental) represents a central limitation of microteaching as a formative device. Insufficient

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opportunities for expert modeling and fragmented curricular structures further weaken the continuity and depth of learning across programs.

Taken together, the evidence suggests that microteaching should not be treated as an isolated technique or a self-sufficient rehearsal task, nor as a substitute for authentic teaching experience. Its formative value depends on being embedded within a situated, practice-oriented model in which simulation, guided reflection, and real school-based teaching form a continuous and mutually reinforcing sequence. Only under such conditions does the available evidence suggest that microteaching may strengthen pedagogical judgment and support the progressive development of skills among future PE teachers.

These findings carry concrete implications for the design of peer microteaching in PETE. First, microteaching should be organized as a recurring, iterative cycle (plan, enact, receive feedback, reflect, and re-teach) distributed across several stages of the program rather than concentrated in a single short block, since sustained and repeated rehearsal was associated with stronger learning than one-off activities. Second, feedback should be deliberately scaffolded and dialogic, combining structured peer feedback with expert instructor mediation and, where possible, video-based analysis, so that reflection moves beyond superficial observation and confidence is grounded in informed appraisal rather than untested self-perception. Third, programs should incorporate expert modelling (demonstrations of skilled teaching before and during rehearsals) to counter the risk of inflated self-efficacy. Fourth, the design should progressively increase authenticity, moving from controlled peer rehearsals to more variable scenarios and culminating in school-based enactments, to mitigate the limited transfer associated with simulated contexts. Fifth, given the embodied nature of PE, rehearsals should explicitly include motor demonstration, spatial organization, safety management, and affective regulation, rather than focusing solely on verbal instruction. Sixth, technology-mediated modalities (e.g., virtual or online microteaching) may usefully supplement, but should not replace, face-to-face and school-based practice, given their lower specificity of feedback. Finally, microteaching should be curricularly aligned with both theoretical coursework and the practicum, so that it operates as a connecting mechanism within a coherent, practice-oriented model rather than as an isolated methodology-course exercise.

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Future research should employ stronger designs (including controlled, longitudinal, and performance-based studies) and clarify how these design features and different microteaching modalities shape the development of professional judgment, instructional competence, and, in particular, the transfer of learning to authentic teaching. Such evidence will be essential for establishing how, and under what conditions, microteaching can be systematically integrated within PETE programs to prepare teachers for the complex, embodied, and relational realities of PE teaching.

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