

Qualifications Of Physical Education, Sports, And Health Teachers in Elementary Schools: A Scoping Review of Contemporary Empirical Evidence

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Abstract. Teacher qualification constitutes a central determinant of instructional quality in elementary school Physical Education (PE), yet the literature on this construct remains fragmented across terms that are not always equivalent, namely academic qualification, certification, professional education, teaching experience, competence, and specialist or generalist status. This article reports a scoping review that maps the scope, nature, and gaps of empirical evidence on elementary PE teacher qualification. The authors followed the Arksey and O'Malley framework as refined by Tricco and colleagues through the PRISMA-ScR guideline. The authors constructed a Boolean search strategy in the Scopus database and retrieved twenty-one initial articles, narrowed the set to nine articles published between 2020 and 2026, and ultimately retained seven thematically relevant articles. The authors enriched the synthesis with twenty-four additional Scopus- or Web of Science-indexed sources to strengthen the conceptual framework and critical discussion. The mapping identified six principal subthemes: academic qualification, certification or licensure, professional education and continuing professional development, teaching experience, pedagogical and professional competence, and specialist versus generalist teacher status. The authors found that the relationship between formal teacher qualification and student learning outcomes remains inconsistent, as some studies reported positive associations while others found no significant relationship after controlling for classroom- and school-level confounders. The authors also identified a research gap in developing-country contexts, including Indonesia, where small-scale descriptive and correlational designs still dominate. This article recommends that future researchers develop longitudinal multilevel designs to test the causal mechanisms linking elementary PE teacher qualification to students' motor development, physical literacy, and higher-order thinking competence.

Keywords: teacher qualification; physical education; elementary school; scoping review; teacher certification

1 Introduction

Physical Education, Sports, and Health (PJOK) occupies a unique position in the elementary school curriculum structure because it simultaneously targets psychomotor, cognitive, and affective developmental domains [3]. Teachers play a central role in realizing these objectives, as the quality of PJOK instruction relies heavily on how teachers design, execute, and evaluate meaningful physical activities for elementary school-aged learners. Milić et al. [21] emphasized that classroom teachers in many countries assign PJOK the lowest priority and lowest qualification requirements compared to other academic subjects, despite acknowledging the critical importance of physical activity for child development. This gap between the normative recognition of PJOK's importance and the empirical reality of teacher qualifications underscores the need for a systematic mapping of existing literature.

The term 'teacher qualification' is not a singular construct. Büchel et al. [5] explicitly distinguished between academic qualification, certification or licensure, general teaching experience, specific PE teaching experience, and continuing professional development as five acquired characteristics of teachers that do not always correlate with one another. Baumgartner [3] added the dimension of professional competence as a construct distinct from formal qualifications, noting that competence encompasses teacher beliefs, knowledge, motivational orientation, and self-regulation—elements that are not automatically reflected in diplomas or certificates. Such terminological inconsistency carries methodological implications, as researchers who operationalize teacher qualification as a single variable risk oversimplifying a fundamentally multidimensional construct.

Empirical evidence regarding the impact of teacher qualification on student learning outcomes yields mixed and often contradictory results. Büchel et al. [5] conducted a longitudinal multilevel study involving 720 students, 91 classes, and 77 teachers in Switzerland, finding that acquired teacher characteristics, including teaching qualifications and experience, were not significantly associated with gains in students' motor competencies when controlling for the hierarchical data structure. Conversely, Hardiansyah et al. [17] observed significant attitudinal differences in Sumatra, Indonesia, between certified and non-certified PE teachers in stimulating students' higher-order thinking skills (HOTS). These disparate findings suggest that the effect of teacher qualification on learning outcomes may be highly contextual and contingent upon the specific outcome measured, whether psychomotor, affective, or cognitive.

The Indonesian context presents a distinct urgency for examining this issue. Law No. 14 of 2005 on Teachers and Lecturers mandates that all teachers possess a bachelor's degree or four-year diploma (D-IV) alongside an educator certificate as legal prerequisites for professionalism [25]. However, implementation in the field exhibits persistent gaps. Nasrulloh et al. [22] found a significant relationship between teacher competence and PE teacher performance in elementary schools, whereas Hartono et al. [19] reported wide variations in teacher competence achievements among elementary PE teachers in Semarang City, despite possessing identical formal education levels. This condition indicates that formal qualification alone does not automatically guarantee actual classroom competence.

To the authors' knowledge, no scoping review currently exists that specifically maps the literature on elementary PE teacher qualifications by integrating both international and Indonesian perspectives simultaneously. Extant literature reviews primarily focus on adjacent topics, such as general PE teacher competencies [3], teacher physical literacy [29], or the specialist versus generalist debate at the policy level [11]. To address this gap, this scoping review aims to map the scope, design characteristics, and evidence gaps in the literature on elementary PE teacher qualifications, while formulating a future research agenda relevant to primary education. A scoping review design was chosen over a systematic review because the primary objective is to map the extent and nature of available evidence rather than evaluate the effectiveness of a specific intervention [2, 27].

2 Methods

The authors adopted a scoping review design following the five-stage framework established by Arksey and O'Malley [2], enhanced by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guidelines [27]. This approach was selected because a scoping review allows researchers to map core concepts, types of evidence, and knowledge gaps across fragmented literature spanning multiple terms and disciplines.

In the research question identification stage, the central question was formulated as follows: how does empirical evidence map the concepts, characteristics, and effects of elementary PE teacher qualifications on instructional processes and learning outcomes? In the relevant study identification stage, a Boolean search strategy was executed in the Scopus database using the following query string: ("qualification" OR "teacher qualification" OR "competenc*" OR "professional background" OR "educational background" OR "certified" OR "specialist teacher" OR "non-specialist teacher") AND ("physical education teacher" OR "PE teacher" OR "physical education instructor") AND ("elementary school" OR "primary school" OR "elementary education" OR "primary education"). The search conducted on September 1, 2026, yielded twenty-one initial documents, comprising nineteen journal articles, one book chapter, and one conference paper, predominantly distributed across Social Sciences (16), Health Professions (14), and Medicine (11).

During the study selection stage, inclusion criteria mandated articles focused on PE teacher qualification, certification, professional education, experience, or competence in elementary schools, published between 2020 and 2026 in English with final publication status. Applying these criteria filtered the initial set to nine articles within the designated publication window, narrowing subject distribution to Social Sciences (8), Health Professions (6), and Medicine (6). Subsequent title and abstract screening conducted independently by the authors retained seven thematically relevant articles. These seven core articles were categorized into three relevance tiers: core primary references [5, 17], supporting articles enriching readiness and role distribution contexts [10, 11], and indirectly relevant contextual articles [6, 20].

In the data charting stage, information regarding author(s), publication year, country, study design, sample size and characteristics, operational definition of teacher qualification, and primary findings was extracted from each study.

Formal risk-of-bias assessment was omitted in accordance with scoping review standards [2], though methodological limitations were systematically noted. In the summarizing and reporting stage, findings were synthesized into six conceptual subthemes: academic qualification, certification or licensure, professional education and continuing professional development (CPD), teaching experience, pedagogical and professional competence, and specialist versus generalist teacher status.

To enhance analytical depth and avoid thin synthesis due to the limited number of core articles, supplementary searches were conducted across Scopus, Web of Science, ScienceDirect, PubMed, and Google Scholar using terms derived from the six subthemes (e.g., 'teacher competence physical education', 'specialist generalist primary physical education', 'out-of-field teaching physical education'). This yielded twenty-four additional supporting references, bringing the total synthesized literature base to thirty-one references.

3 Results

Table 1 summarizes the characteristics of the seven core articles retrieved from the Scopus database search. The studies represent five countries (Switzerland, Indonesia, Italy, Australia, and the United States) published between 2023 and 2026. Methodological designs include longitudinal multilevel modeling, quantitative comparative studies, descriptive correlational surveys, qualitative interview studies, and research and development (R&D) frameworks.

Table 1. Characteristics of core included articles.

No	Author & Year	Country	Design & Participants	Qualification Definition	Main Findings
1	Büchel et al. (2026) [5]	Switzerland	Longitudinal multilevel (720 students, 91 classes, 77 teachers)	Teaching qualification, PE CPD, general & PE-specific teaching experience	Acquired teacher characteristics were not significantly associated with gains in student motor competency.
2	Hardiansyah et al. (2024) [17]	Indonesia	Quantitative comparative (105 elementary PE teachers)	Teacher certification status	Certified teachers showed significantly more positive attitudes toward stimulating student HOTS than non-certified teachers.
3	D'Isanto et al. (2025) [10]	Italy	Descriptive correlational (48 prospective PE sports tutors)	Readiness, master's degree, psychopedagogical training	Sports tutors reported gaps in sports knowledge, inclusive strategies, and classroom management.
4	Cruickshank et al. (2023) [11]	Australia	Survey & qualitative interview (94 survey, 11 interview teachers)	PE specialist vs. generalist classroom teacher status	Specialists possessed superior pedagogical knowledge, but role division left gaps in health education delivery.

5	Maliki et al. (2025) [20]	Indonesia	Research & Development (R&D) (5 certified PE experts)	Expert criteria: Master's degree, ≥ 10 yrs experience, professional certification	Traditional game-based PE learning model was validated by experts meeting specific qualification criteria.
6	Biver et al. (2026) [4]	United States	Nationally representative cross-sectional (US elementary school sample)	Licensed, certified, and PE-endorsed teacher status	Low socio-economic status schools were significantly less likely to employ licensed PE teachers.
7	Milić et al. (2022) [21]	Croatia	Quantitative descriptive (111 primary school teachers)	Perception of teacher qualification & competence for PE	Teachers rated their PE teaching qualification and competence lower than for other academic subjects.

4 Discussion

4.1 Academic Qualification

Academic qualification refers to the formal degree level and field of study completed prior to teaching. Law No. 14 of 2005 sets a bachelor's degree or D-IV as the baseline legal requirement in Indonesia [25]. While essential as a standard, Milić et al. [21] demonstrated that primary classroom teachers rated their academic preparation for teaching PE substantially lower than for language or mathematics. Similarly, D'Isanto et al. [10] found that Italian PE tutors with master's degrees in sports science still reported deficiencies in inclusive instruction and classroom management when deployed in elementary schools. Thus, formal academic qualification is a necessary baseline but insufficient on its own to guarantee classroom readiness.

4.2 Certification and Licensure

Professional certification acts as a quality assurance mechanism beyond basic degrees. Hardiansyah et al. [17] identified significant positive differences in attitudes toward stimulating higher-order thinking skills (HOTS) among certified elementary PE teachers compared to non-certified peers. In the United States, Biver et al. [4] observed that low socio-economic status schools face disparities in hiring licensed and PE-endorsed teachers. Michael et al. [20] noted wide state-level variations in certification policies. However, administrative trials such as Thompson et al. [26] showed that auditing and coaching interventions failed to increase compliance with mandated PE minutes when schools lacked certified PE personnel. Certification is vital, but regulatory mandates must be accompanied by adequate teacher supply.

4.3 Professional Education and Continuing Professional Development

Teacher professional education (e.g., PPG in Indonesia [25]) and CPD serve to update teaching competencies post-graduation. Hardiansyah [16] noted that online professional teacher education has not fully equipped PE teachers to integrate HOTS effectively in classroom practice. Systematic evidence from Yin et al. [29] highlights that while CPD programs can improve teacher physical literacy, intervention studies specifically testing CPD efficacy remain scarce. Furthermore, Chen et al. [6] showed that teacher competency influences work engagement mediated by occupational stress and burnout, indicating that CPD must address psychological well-being alongside technical instruction.

4.4 Teaching Experience

While teaching experience is often assumed to correlate with instructional quality, empirical evidence demonstrates complex nuances. Büchel et al. [5] found that neither general nor PE-specific teaching experience significantly predicted student motor skill gains after accounting for class and school clustering. Hardiansyah et al. [17] similarly found no significant differences in HOTS stimulation based on teaching tenure. Conversely, qualitative findings by Cruickshank et al. [11] revealed that years of experience as PE specialists fostered superior pedagogical content knowledge compared to generalists. The impact of teaching experience appears non-linear and outcome-dependent.

4.5 Pedagogical and Professional Competence

Competence represents a teacher's actual operational capacity, distinct from paper qualifications. Baumgartner's Compe-PET framework [3] conceptualizes professional competence as a continuum involving beliefs, knowledge, motivation, and self-regulation. Empirical studies by Nasrulloh et al. [22] support this model, showing a strong link between teacher competence and instructional performance. However, Nathan et al. [23] and Hartono et al. [19] documented substantial competency variations among in-service elementary PE teachers in Indonesia. Prastyawan and Pulungan [24] noted that physical fitness—facilitated by quality PE—correlates with broader academic achievement, establishing that teacher competence has wide-ranging developmental impacts.

4.6 Specialist versus Generalist Teacher Status

The debate between employing PE specialist teachers versus generalist classroom teachers remains central. Cruickshank et al. [11, 12, 13] observed that while specialists possess deeper physical education knowledge, dividing roles often leads to the neglect of health education components. Deng and Legge [14] in New Zealand and Yan et al. [28] in China reported that generalist teachers frequently deprioritize PE relative to core academic subjects due to time constraints and lower confidence. D'Isanto et al. [10] showed that appointing sports specialists in Italy did not fully resolve pedagogical challenges. Rather than a binary choice, a collaborative model combining specialist expertise with generalist holistic student knowledge represents a more promising policy pathway.

4.7 Implications for Indonesian Elementary Schools

These synthesized findings present clear implications for Indonesia: (1) legal certification frameworks [25] must be paired with ongoing competency verification [19, 23]; (2) local developmental deficiencies in student motor skills [1] require contextual, continuous CPD rather than one-off workshops; and (3) rural schools relying on generalists [14] need structural support and collaborative mentoring networks.

5 Limitations

This scoping review has several limitations: (1) database searching was restricted to Scopus, potentially omitting relevant literature indexed exclusively in ERIC or SPORTDiscus; (2) formal methodological quality assessment was omitted per scoping review protocols [2]; and (3) primary search criteria were limited to English-language publications, though supplementary national literature was included to contextualize findings.

6 Conclusion

This scoping review mapped empirical literature on elementary PE teacher qualifications into six core subthemes. The findings reveal that formal qualifications alone inconsistent predict student outcomes, whereas actual teacher competence demonstrates a more reliable association with instructional quality. For the Indonesian context, future research should adopt longitudinal multilevel designs to examine causal relationships between teacher qualification, pedagogical competence, and student motor and cognitive development.

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