

Competency assessment in initial teacher training in physical education: a systematic review

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Abstract

Introduction: Competency assessment in physical education teacher education is fundamental to develop essential skills in professional practice. These competencies include technical knowledge, practical skills and a comprehensive approach that encompasses pedagogical and ethical dimensions. The diversity in competencies reflects the plurality of approaches adopted by higher education institutions, which prioritize different areas to respond to the demands of the current school system. **Objective:** Analyze the types of competencies assessed during physical education teacher training. **Method:** A systematic review was conducted following the PRISMA statement, covering articles in WoS, Scopus, Sportdiscus and ERIC databases, until July 2024. Studies were selected according to specific inclusion criteria. **Results:** Of a total of 820 studies identified, 38 met the inclusion criteria and were classified into seven main categories: a) Communication competencies; b) Technological and digital competencies; c) Didactic and pedagogical competencies; d) Personal and socioemotional competencies; e) Inclusion and adaptation to diverse contexts competencies; f) Professional identity and ethics competencies; and g) Evaluative and feedback competencies. **Conclusion:** The prioritization of pedagogical and socioemotional competencies in the training of physical education teachers fosters a comprehensive approach that generates a balanced and adaptable training, promoting effective performance in diverse educational contexts.

Key words: Teacher training; evaluation; competencies; physical education.

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Evaluación de competencias en la formación inicial docente en Educación Física: revisión sistemática

Resumen

Introducción: La evaluación de competencias en la formación de docentes de educación física es fundamental para desarrollar habilidades esenciales en el ejercicio profesional. Estas competencias incluyen conocimientos técnicos, habilidades prácticas y un enfoque integral que abarca dimensiones pedagógicas y éticas. La diversidad en las competencias refleja la pluralidad de enfoques adoptados por las instituciones de educación superior, que priorizan diferentes áreas para responder a las demandas del sistema escolar actual. **Objetivo:** Analizar los tipos de competencias evaluadas durante la formación de profesores de educación física. **Método:** Se realizó una revisión sistemática siguiendo la declaración PRISMA, abarcando artículos en las bases de datos WoS, Scopus, Sportdiscus y ERIC, hasta julio de 2024. Los estudios se seleccionaron en función de criterios específicos de inclusión. **Resultados:** De un total de 820 estudios identificados, 38 cumplieron con los criterios de inclusión y fueron clasificados en siete categorías principales: a) Competencias comunicativas; b) Competencias tecnológicas y digitales; c) Competencias didácticas y pedagógicas; d) Competencias personales y socioemocionales; e) Competencias en inclusión y adaptación a contextos diversos; f) Competencias de identidad profesional y ética; y g) Competencias evaluativas y de retroalimentación. **Conclusión:** La priorización de competencias pedagógicas y socioemocionales en la formación de docentes de educación física fomenta un enfoque integral que genera una formación equilibrada y adaptable, promoviendo un desempeño eficaz en contextos educativos diversos.

Palabras clave: Formación docente, evaluación, competencias, educación física.

Introduction

Initial Teacher Education (ITE) requires the integration of skills, knowledge, and attitudes, essential elements for the development of a solid and adaptable professional identity. This formative process is enriched by the dynamic and multidimensional interaction of these components, which mutually enhance each other, giving rise to what is known as professional competencies (Casanova-Fernández et al., 2022). These competencies are not limited to technical and academic skills, but encompass interpersonal, ethical, and digital capabilities, all of which are fundamental to addressing the complex and constantly evolving challenges that characterize contemporary school environments (Casey & MacPhail, 2018). In the case of Physical Education (PE), this multidimensional approach is particularly relevant (Mc Lennan & Thompson, 2015), as the discipline demands not only technical preparation in physical activities, but also competencies in group management, student motivation, and the design of inclusive and differentiated strategies (Garduño et al., 2023).

Currently, educational literature highlights the importance of adopting holistic approaches in teacher training in order to comprehensively address sociocultural diversity and the specific demands that characterize contemporary school environments. Korthagen (2004) suggests that training programs should go beyond the acquisition of theoretical knowledge, integrating transversal competencies that allow future teachers to adapt to varied teaching situations and to the different characteristics of their students. Likewise, Goodyear and Dudley (2015) emphasize that PE requires student-centered models, where the teacher adopts a facilitator role that encourages participation, autonomous learning, and social interaction. This comprehensive approach seeks not only to strengthen pedagogical skills, but also to develop ethical and emotional skills that enhance interaction with students, families, and the educational community (Gimbert et al., 2023).

In PE, teaching competencies include leadership, management of heterogeneous groups, and efficient use of digital tools (Maksimović & Lazić, 2023; Peña-Troncoso et al., 2023). In addition,

teacher training must balance theoretical and practical aspects, integrating inclusive experiences and formative assessments that promote reflective learning (Kirk, 2009; López-Pastor et al., 2013), as well as it is also key to face educational complexity, strengthening technical skills, adaptability and critical thinking (Darling-Hammond, 2006).

Evaluation occupies a central place in ITE programs since it allows the identification of strengths and areas for improvement in the development of competencies. According to Dochy et al. (2003), effective assessment is not limited to measuring performance but also fosters deep learning by engaging students in reflective and critical processes. However, competency assessment in PE faces significant challenges (Triqueros et al., 2018). Due to their multifaceted nature, these competencies are difficult to measure with standardized instruments, especially in a field where sociocultural and educational contexts vary widely (Hay & Penney, 2012).

Although the existing literature has extensively explored competency-based teacher education, important limitations related to the evaluation of these competencies persist. For example, Molina and López-Pastor (2016) highlight that a large part of the evaluations focuses on technical competencies, leaving aside transversal components such as inclusion and ethics. Likewise, studies such as Baumgartner (2022) highlight the absence of validated instruments that allow for consistent assessment in multicultural contexts, while Dochy et al. (2003) emphasize that effective assessment not only measures performance but must involve students in reflective and critical processes. These gaps justify the need for research that comprehensively addresses which competencies are most assessed and required by future PE teachers (PET).

In order to respond to these needs, a central question was posed: What type of competencies are assessed during the training process of future PETs, from which the following sub-questions derive: a) From what formative areas are the competencies assessed in future PETs; b) What specific competencies are assessed in PET training; c) What type of effect does the

assessment of competencies have on future PETs; d) What type of effect does the assessment of competencies have on future PETs; and e) What is the impact of the assessment of competencies on future PETs? Consequently, the objective of this review was to analyze the types of competencies assessed during the formative process of future PETs, in order to offer practical orientations to PET training programs, promoting the deep development of the necessary competencies to prepare future teachers for the challenges of the current educational environment.

Materials and Methods

Design

This systematic review was developed through the preferred reporting protocol for systematic reviews and guideline meta-analyses (PRISMA) (Page et al., 2021). The systematic review protocol was registered in the Open Science Framework (OSF) under the identifier <https://doi.org/10.17605/OSF.IO/XYCKH>

Procedure

For the search of scientific studies, the databases Web of Science (WOS), Scopus, SPORTDiscus, and ERIC were analyzed. The use and combination of these databases allows a balance between the general scope of the two most important worldwide databases, WoS and Scopus (Pranckutė, 2021), and the thematic specificity that can be obtained through SPORTDiscus and ERIC, which guarantees adequate coverage and avoids the inclusion of sources with less methodological rigor. This choice prioritizes the inclusion of studies published in indexed and recognized journals within the academic community to ensure the validity and reliability of the results obtained. At the time of the search, no limits of year were specified to ensure the largest possible number of studies since the beginning of competency-based work in PE. Therefore, all articles published from the beginning of each database until August 2024, written in English, Spanish, French, Portuguese, or German, were selected.

Sources of Information and Bibliographic Search

In the search, the title, abstract, and keyword fields in each of the databases were reviewed. For this purpose, the following keywords were used, combined with Boolean operators (AND/OR): ([“training of physical education teachers” OR “future physical education teachers” OR “pre-service physical education teachers” OR “students physical education” OR “physical education teacher candidates” OR “training of physical education students” OR “physical education students” OR “pre-service physical education” OR “initial teacher training in physical education” OR “pre-service physical education teachers”] AND [“skills” OR “assessment” OR “evaluation” OR “measurement” OR “professional competence” OR “competence assessment” OR “teaching competency” OR “teachers’ reflection” OR “pedagogical competence” OR “disciplinary competence” OR “reflective competence” OR “competence” OR “competency” OR “competency”]). The addition of related keywords was intended to broaden the search. Two authors (H-T, C., and B-F, G) conducted the search and review of the studies, deciding jointly on the inclusion of each study. In case of disagreement, a third author (E-L, S) was consulted (see supplementary material 1 <https://doi.org/10.6084/m9.figshare.28426238> for the search in each database).

Inclusion Criteria

The articles that were included in this systematic review were those that met the following inclusion criteria (according to PICOS): a) Population: university students of PE programs; b) Intervention/Interest: research that has assessed some type of competency in PET training, either through standardized tests, performance-based rubrics, self-assessments, peer evaluations, and other empirical methods used to assess competencies in university contexts; c) Comparator: comparison between types of competency assessment, which may include differences between assessment methods, or between pedagogical models used; d) Outcome: positive or negative results on the different types of competency assessment, in physical education pedagogy students; and e)

Study design: empirical studies or those that included competency assessments, developed in universities. Exclusion criteria were a) systematic review or meta-analysis studies; b) letters to the editor; c) book chapters; d) studies that did not report clear or specific results in the evaluation of competencies for PET students; and e) studies published in non-indexed journals.

Evaluation of Methodological Quality

The evaluation of the methodological quality of the studies was performed using the Newcastle-Ottawa Scale (NOS) ([Moskalewicz & Oremus, 2020](#)). This scale, designed for observational studies, evaluates three main dimensions: selection, comparability, and outcomes. Each dimension is analyzed using specific criteria, such as representativeness of the cohort, comparability of groups in the study design or analysis, and certainty in the determination of exposure. In total, up to nine stars can be awarded: four for the selection, two for comparability, and three for outcomes.

The NOS scale has demonstrated high levels of reliability and validity compared to alternative scales ([Sirriyeh et al., 2012](#)), attributed to its systematic approach to assessing key aspects of methodological quality. Each assigned star reflects the fulfillment of a criterion, offering a clear measure of study quality ([Moskalewicz & Oremus, 2020](#)).

Procedures

In the search process, a comprehensive analysis identified a total of 1367 scholarly articles related to competency assessment in future FEPs. From the initial set, 452 duplicate articles were removed using RefWorks bibliographic management software, which was manually verified by two reviewers to ensure accuracy. After screening titles and abstracts, 820 articles were discarded, and an additional 57 were excluded after detailed full-text evaluation (see supplementary material 2: <https://doi.org/10.6084/m9.figshare.28426238>). The process was conducted by two reviewers independently, and discrepancies were resolved by consensus with a third reviewer to ensure accuracy and minimize bias. Figure 1 illustrates the search strategy and study selection process.

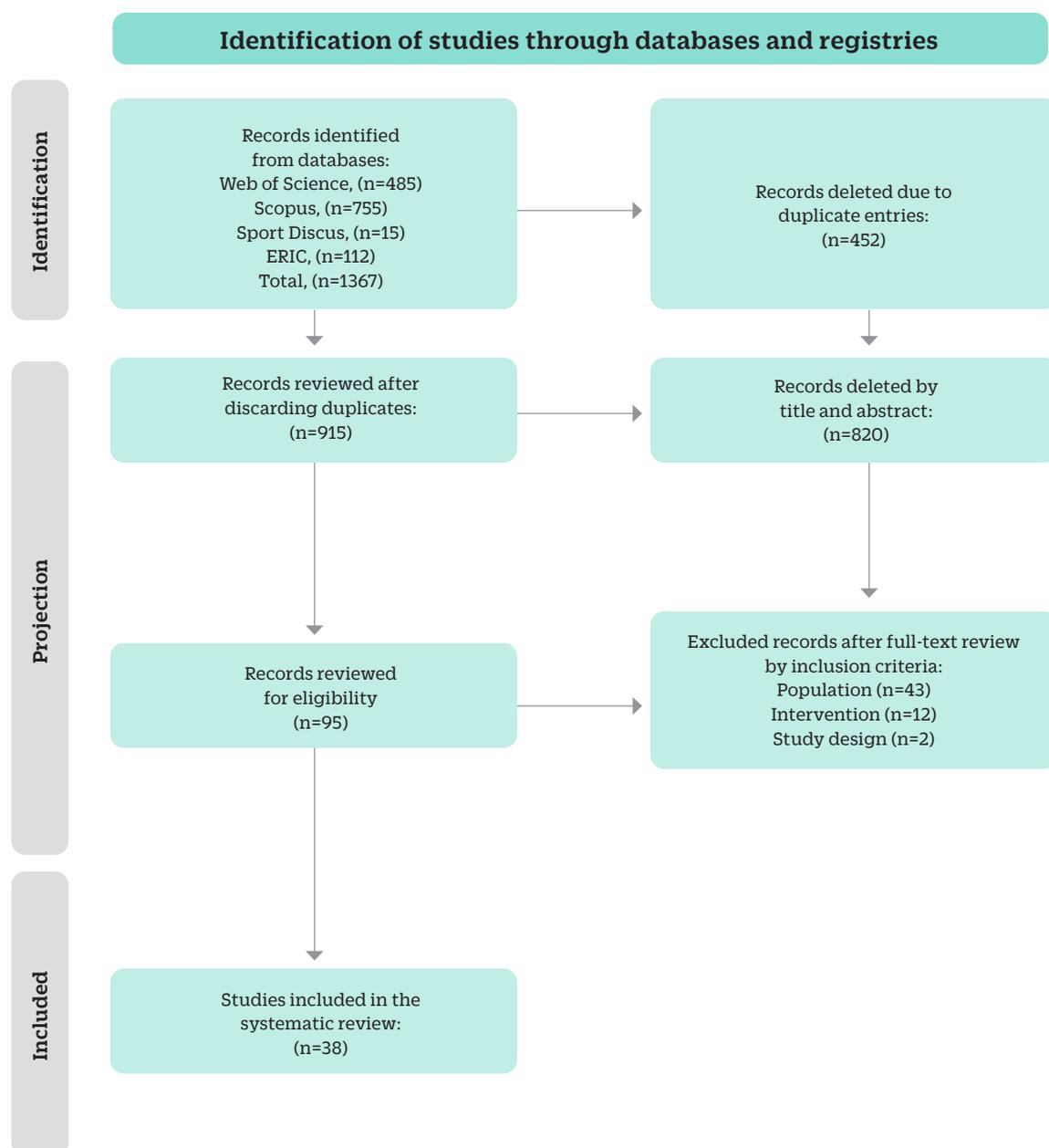
Results

Synthesis of Studies Included in the Systematic Review

The results of the study revealed that the key competencies in PET students are grouped into various categories, which allows for a

comprehensive understanding of the most relevant areas for teacher training. Specifically, didactic and pedagogical competencies, competencies related to professional identity and ethics, as well as socioemotional competencies, were highlighted. These findings align with the objectives of the study, which focused on

Figure 1
PRISMA Flowchart: Search Strategy and Selection.



identifying and categorizing the essential competencies evaluated in PET students.

Additionally, the results provide a solid basis for reflecting on the integration of these competencies in teacher education programs, thus contributing to a more complete and coherent vision of professional preparation in the area.

The 38 studies that met the inclusion criteria and were therefore included in the review were synthesized in a table through extracted data, including: author, year, country of study, objective, sample size, competency(ies) assessed, and main findings. (For visualization of the table, see supplementary material 3 available at <https://doi.org/10.6084/m9.figshare.28426238>).

Table 1 includes a content analysis, where the 38 studies were stratified into seven categories,

which also includes a definition of the category and the number of studies, and the % of these according to each category.

In relation to communicative competencies, initial training emphasizes the technical aspects of verbal discourse, relegating non-verbal communication. The main difficulties include kinetic regulation and the use of paralinguistic signals, which are fundamental in teacher-student interaction. The lack of explicit instruction in these areas affects the teacher's accessibility and authority.

Technological competencies present a gap between the mastery of basic tools and their pedagogical integration. Limitations were evidenced in the design of ICT-mediated learning experiences, especially in evaluation and digital feedback. These deficiencies affect the adaptation

Table 1
Stratification of Selected Studies by Subject Matter

Category	Definition	Studies
Communicative Competencies (4 = 10,5%)	Assessment of effective communication skills: verbal language and non-verbal communication.	Alkaaf et al. (2020); Aparicio et al. (2020); Mombek et al. (2018); Samsutina, (2010).
Technological and Digital Competencies (4 = 10,5%)	Evaluation of competencies on the use of information technologies and digital tools.	Bernate et al. (2021); Ceyhan, (2022); Hassan & Abdelfatah, (2023); Stanescu & Stoicescu, (2013).
Didactic and Pedagogical Competencies (11 = 28,9%)	Competency assessment in the planning, implementation and evaluation of EA processes.	Cañadas et al. (2018); Jansone et al. (2014); Putnam et al. (2021); Shahril et al. (2015); Montoya-Grisales et al. (2022); Stafeeva et al. (2023); Kim & Kwak, (2022); Dudley & Baxter, (2009); Kiremitci et al. (2022); Teslenko & Sebaló, (2020); Vera-Assaoka, (2022).
Personal and Socioemotional Competencies (5 = 13,2%)	Evaluation of leadership, critical thinking, and ethical commitment competencies.	Frailé et al. (2018); Laclote-Gutierrez et al. (2024); Zhienbayeva, (2019); Hamodi et al. (2018); Aydin, (2020).
Competencies in Inclusion and Adaptation to Diverse Contexts (4 = 10,5%)	Assessment of competencies towards inclusion and adaptation in diverse educational contexts.	Braksiek, (2022); Ojeda et al. (2019); Campos et al. (2011); Cañadas et al. (2020).
Professional Identity and Ethical Competencies (5 = 13,2%)	Evaluation of competencies associated with self-definition, professional commitment and teaching ethics.	Liu & Keating, (2021); Orlov et al. (2014); Mouratidou et al. (2008); Amor & Serrano, (2019); Broniskowska & Korcz, (2019).
Evaluative and Feedback Competencies (5 = 13,2%)	Evaluation of competencies in the use of assessment tools and self-assessment in ITE.	Gallardo-Fuentes et al. (2020); Kim et al. (2023); Salcines et al. (2024); Stafeeva et al. (2023); Pavlova et al. (2020).

to hybrid environments, compromising the quality of the teaching-learning process.

In terms of didactic and pedagogical skills, difficulties persist in adapting the curriculum to diverse contexts. Teaching is still based on traditional models with little incorporation of active methodologies, which limits innovation and the response to the heterogeneity of the student body.

Personal and socioemotional competencies depend on practical experience, without explicit training to enhance them. Factors such as stress and anxiety affect teacher performance, highlighting the need for strategies that promote leadership, empathy, and emotional self-regulation from initial training.

Despite the growing relevance of inclusion, training programs still present deficiencies in the preparation to address diversity. The absence of concrete tools for designing inclusive interventions and adapting teaching to students with different levels of ability and special needs was evident.

As for professional identity and ethics, their construction is linked to self-definition and commitment to teaching. However, deficits were identified in training for ethical decision-making, being stronger in teachers with greater exposure to reflective models.

Finally, evaluative and feedback competencies depend on traditional models, with little incorporation of formative and self-evaluative strategies. Feedback continues to be perceived as a corrective mechanism rather than as a learning opportunity, limiting its potential to improve teacher and student performance.

Quality of studies

Of the 38 studies evaluated using the Newcastle-Ottawa Scale (NOS), the methodological quality was found to be generally good. Most of the studies obtained scores between 6 and 8 stars, indicating adequate internal and external validity, although with some limitations in certain specific dimensions.

The detailed assessment of methodological quality is presented in Table 2, which summarizes compliance with the selection, comparability, and results criteria for each study. This analysis

highlights common strengths, such as adequate representativeness of the sample and rigor in the evaluation of the results, while the main areas for improvement include comparability between groups and justification of the sample size.

Although the studies analyzed present an acceptable methodological quality according to the NOS evaluation, some aspects could be improved, especially in the comparability of groups and the justification of the sample size. In addition, the lack of longitudinal studies and the heterogeneity in methodological approaches pose challenges for the consolidation of a solid evaluation framework in physical education teacher education. Future research should focus on a more robust design, with greater geographic diversity and a more structured comparison between competency assessment methods.

Discusión

Teaching competencies in physical education have been the subject of growing interest due to their impact on the quality of the teaching-learning process. This study sought to analyze the types of competencies assessed during physical education teacher training, exploring the relevance of the different competencies as a pillar of teacher training.

Firstly, communicative competencies are essential in teaching ([Gómez, 2022](#)), as they facilitate interaction with students and classroom management. While literature highlights their importance ([Alkaaf et al., 2020](#); [Aparicio et al., 2020](#)), studies show deficiencies in non-verbal communication ([Jovanović & Zdravković, 2017](#)), especially in kinetic regulation and the use of paralinguistic signals ([Samsutina, 2010](#)). These skills influence the perception of accessibility and teaching authority ([Georgakopoulos & Guerrero, 2010](#); [Gómez-González & Mendoza, 2018](#)), so their assessment should include strategies that measure both clarity in verbal expression and effectiveness in non-verbal communication, optimizing teaching ([Abekah et al., 2024](#); [Barkoukis et al., 2021](#)).

Additionally, technological and digital competencies have become more relevant in

Table 2
Results of the Methodological Quality of the Studies Through NOS.

Study	Total	a	b	c	d	e	Quality
Alkaaf et al. (2020)	7	*	*	**	*	**	Good
Amor & Serrano, (2019)	6	*		**	*	**	Good
Aparicio et al. (2020a)	7	*	*	**	*	**	Good
Aparicio et al. (2020b)	8	*	*	**	**	**	Very good
Aydin, (2020)	8	*	*	**	**	**	Very good
Bernate et al. (2021)	6	*		**	*	**	Good
Braksiek, (2022)	7	*	*	**	*	**	Good
Bronikowska & Korcz, (2019)	7	*	*	**	*	**	Good
Campos et al. (2011)	6	*		**	*	**	Fair
Cañadas et al. (2018)	7	*	*	**	*	**	Good
Cañadas et al. (2020)	7	*	*	**	*	**	Good
Ceyhan, (2022)	7	*		**	*	**	Good
Dudley & Baxter, (2009)	6		*	**	*	**	Fair
Fraille et al. (2018)	8	*	*	**	**	**	Very good
Gallardo-Fuentes et al. (2020)	7	*	*	**	*	**	Good
Hamodi et al. (2018)	7	*	*	**	*	**	Good
Hassan & Abdelfatah, (2023)	7	*	*	**	*	**	Good
Jansone et al. (2014)	7	*	*	**	*	**	Good
Kim & Kwak, (2022)	8	*	*	**	**	**	Very good
Kim et al. (2023)	7	*	*	**	*	**	Good
Kiremitci et al. (2022)	6	*	*	*	*	**	Good
Lacote-Gutierrez et al. (2024)	8	*	*	**	**	**	Good
Lui & Keating, (2021)	7	*	*	**	*	**	Good
Mombek et al. (2018)	8	*	*	**	**	**	Good
Montoya-Grisales et al. (2022)	7	*	*	**	*	**	Good
Mouratidou et al. (2008)	7	*	*	**	*	**	Good
Ojeda et al. (2019)	6	*		**	*	**	Good
Orlov et al. (2014)	6	*		**	*	**	Fair
Pavlova et al. (2020)	7	*	*	**	*	**	Good
Putnam et al. (2021)	8	*	*	**	**	**	Very good
Salcines-Talledo et al. (2024)	8	*	*	**	**	**	Very good
Shahril et al. (2015)	7	*	*	**	*	**	Good
Samsutina, (2010)	7	*	*	**	*	**	Good
Stafeeva et al. (2023)	7	*	*	**	*	**	Good
Stanescu & Stoicescu, (2013)	6		*	**	*	**	Fair
Teslenko & Sebaló, (2020)	7	*	*	**	*	**	Good
Vera-Assaoka & Castro, (2022)	8	*	*	**	**	**	Very good
Zhienbayeva (2019)	7	*	*	**	*	**	Good

a: Representativeness; b: Verification; c: Design and Analysis; d: Instruments; e: Statistical test.

teacher training, but a gap persists between the technical proficiency and its pedagogical integration ([Bernate et al., 2021](#); [Ceyhan, 2022](#)). The application of ICTs in planning and assessment remains limited in physical education ([Hassan & Abdelfatah, 2023](#)). The assessment of these competencies should prioritize their impact on teaching and learning, promoting their effective use in active methodologies and digital feedback strategies ([Astudillo et al., 2024](#); [Goodyear & Armour, 2018](#)).

In contrast, didactic and pedagogical competencies emerge as those with the greatest impact on teaching, as they are the foundation for planning, implementing, and evaluating teaching-learning processes in physical education ([Putnam et al., 2021](#); [Montoya-Grisales et al., 2022](#)). These competencies allow future teachers to structure learning experiences adapted to different skill levels, facilitating pedagogical differentiation and the implementation of active methodologies ([Kim & Kwak, 2022](#)). [Cañadas et al. \(2018\)](#) and [Jansone et al. \(2014\)](#) highlight that effective instructional design is key to improving educational outcomes, while [Dudley & Baxter \(2009\)](#) and [Shahril et al. \(2015\)](#) emphasize the need to constantly evaluate teaching effectiveness to introduce improvements in teaching practice.

In addition, evaluative and feedback competencies are determinant in the improvement of the teaching-learning process. Assessment not only measures performance but also guides learning, allowing adjustments in teaching according to the needs of students ([Gallardo-Fuentes et al., 2020](#); [Kim et al., 2023](#)). Several studies have pointed out that formative assessment is a key tool for strengthening self-regulation of learning and improving teaching through reflective and critical processes ([Treschman et al., 2024](#); [Stafeeva et al., 2023](#); [Pavlova et al., 2020](#)). In this sense, the teacher's ability to design effective assessment strategies directly impacts the quality of teaching, since it promotes the continuous adaptation of pedagogical methods to the particularities of the group of students ([Salcines et al., 2024](#); [Langelaan et al., 2024](#)).

Personal and socioemotional competencies are also fundamental in physical education

teaching, as they influence the teacher's ability to manage classroom dynamics, establish positive relationships with students, and foster motivating and inclusive learning environments ([Fraile et al., 2018](#); [Dyson et al., 2021](#)). [Muñoz-Arroyave et al. \(2020\)](#) highlight that strategies based on motor games can enhance teacher emotional management, while [Aydin \(2020\)](#) points out that emotional self-regulation and leadership have a direct effect on student motivation and performance. The assessment of these competencies in initial teacher training can favor their development, allowing future teachers to face the challenges of the school context with greater confidence.

Regarding competencies in inclusion and adaptation to diverse contexts, literature evidences that effective teaching in physical education requires the ability to design learning experiences accessible to all students ([Ojeda et al., 2019](#); [Pérez, 2023](#)). However, [Campos et al. \(2011\)](#) warn that these competencies are still insufficiently integrated in teacher education programs. The evaluation of inclusive strategies and the development of differential pedagogical approaches could improve the preparation of future teachers to face diversity in the classroom ([Ainscow, 2020](#); [Hendriksen et al., 2024](#)).

Moreover, professional identity and ethical competencies constitute a fundamental pillar in the training of physical education teachers. Self-perception of professional identity, clarity of teaching objectives, and commitment to teacher ethical conduct determine how teachers conduct their classes and establish relationships with their students ([Liu & Keating, 2021](#); [Orlov et al., 2014](#)). [Mouratidou et al. \(2008\)](#) emphasize the relevance of moral judgment in teaching decision making, while [Bronikowska & Korcz \(2019\)](#) warn about the need to strengthen ethics training to avoid classroom conflict mismanagement. [Sakiman & Yasin \(2023\)](#) suggest that teacher ethics can foster greater commitment to principles of equity and justice in teaching management.

Given the impact of these competencies on teaching, it is essential that their assessment not only serves to measure performance but also to improve teaching practice through

formative methodologies. The use of reflective assessments, self-assessment strategies, and digital tools can enhance the development of key competencies, favoring the integration of more adaptive and effective pedagogical approaches (Lacote-Gutierrez et al., 2024; Ceyhan, 2022). In addition, the incorporation of case studies and practices in diverse contexts can strengthen the ability of future teachers to apply the knowledge acquired in real situations (Braksiek, 2022; Hinojosa et al., 2020).

Finally, the analysis of the competencies evaluated in the training of PE teachers suggests that some categories have a more significant impact on teaching practice. Didactic and pedagogical competencies emerge as the central pillar of teaching, as they facilitate the planning, implementation, and adaptation of learning strategies. However, the growing emphasis on inclusive education and the use of technologies requires that competencies in inclusion and adaptation to diverse contexts, as well as digital competencies, become more prominent in teacher training (García-Valcárcel & Tejedor, 2020). In addition, socioemotional and professional identity competencies are crucial for managing diversity in the classroom and fostering a motivating learning environment. The current challenges of the educational system, such as the growing heterogeneity in classrooms and the digitalization of education, demand a more balanced assessment of these competencies, prioritizing those that allow future teachers to face complex educational scenarios effectively.

Conclusions

This study aimed to analyze the types of competencies evaluated during the training process of future Physical Education teachers (PET). The findings obtained are valuable for understanding the competency areas currently prioritized in teacher training, but they also reveal significant gaps that require attention in PE pedagogy programs.

In this sense, PET training should adopt a comprehensive approach that ensures the

development of essential competencies to respond to contemporary educational demands. Although didactic and pedagogical competencies emerge as the central pillar of training, the study has revealed significant gaps in assessing other key competencies. Effective communication, particularly non-verbal communication, remains a challenge in the teaching of PE, as its instruction and assessment are not sufficiently integrated in initial training. Likewise, the pedagogical use of digital tools continues to be limited, with emphasis on technical familiarization rather than their effective integration into teaching and assessment strategies.

Another relevant aspect identified is the lack of systematic strategies to assess competencies in inclusion and adaptation to diverse contexts. Despite their growing importance in current educational frameworks, deficiencies persist in training to design inclusive and differentiated interventions. In addition, the assessment of personal and socioemotional competencies, such as emotional regulation, leadership, and classroom management, depends largely on practical experience, without a structured approach to ensure their development from the early stages of teacher training.

Regarding evaluative and feedback competencies, a predominance of traditional models was identified, which limits their impact on learning improvement. Feedback is often perceived more as a corrective mechanism than as a strategy to enhance self-regulation and professional development of future teachers. In this sense, a greater integration of formative and self-evaluative methodologies that favor critical reflection on one's teaching practice is required. Therefore, it is essential to reconfigure teacher training programs to guarantee a more balanced and contextualized preparation that responds to the diversity of the student body and promotes a reflective professional practice oriented towards educational equity. This requires an effective alignment between curricular content and the demands of the current educational system, incorporating active methodologies, practical simulations, and digital tools that promote the authentic assessment of competencies.

Finally, future research should focus on designing and validating standardized instruments that allow rigorous assessment of key competencies in PE teacher education. Likewise, it is recommended to deepen the analysis of the impact of evaluative strategies on pedagogical practice, exploring how different evaluation approaches can influence teaching performance and the quality of teaching in physical education.

Limitations

This study has several limitations that should be considered in future research. First, the systematic review included only cross-sectional studies, which limits the analysis of the evolution of competencies over time. Second, the heterogeneity of methodological approaches in the studies analyzed makes it difficult to compare results. A third limitation is related to the reliance on self-reported methods in several included studies, which may be biased for different reasons. Fourth, the selected studies exhibit geographical bias, with a predominance of research in Europe and Latin America, while other contexts, such as Africa and Asia, are underrepresented, which limits the generalizability of the findings. Finally, this study does not delve into the relationship between competency assessment and its impact on pedagogical practice, which should guide future studies on how different evaluative approaches influence teaching performance in physical education.

Practical Recommendations

The systematic review highlights the need to strengthen key competencies in the initial training of Physical Education teachers. To improve communication, it is recommended to integrate simulations and video analysis to develop kinesic management and non-verbal communication. In the digital realm, the use of interactive platforms and self-assessment tools optimizes teaching in hybrid environments. Socioemotional competencies can be enhanced through mentoring programs and workshops on leadership and emotional regulation. Likewise, didactic planning should prioritize active and adaptive

methodologies to respond to diverse contexts. As for evaluation, it is recommended to incorporate formative strategies and reflective self-evaluation. Finally, training in professional ethics and the construction of teacher identity should include case studies and contextualized dilemmas.

Future Lines of Research

Future research can focus on the validation of standardized tools to assess teaching competencies in physical education, analyzing their impact on professional performance. It is also important to explore the integration of technologies in teaching and evaluation, as well as strategies that strengthen socioemotional and ethical competencies. Research on inclusive practices will allow for improved attention to diversity in educational contexts. Finally, exploring the use of innovative methodologies, such as problem-based learning and reflective self-evaluation, can enhance the alignment between initial training and current educational system demands.

Data Availability Statement

The data are provided as supplementary materials 1 and 2 by accessing the following link <https://doi.org/10.6084/m9.figshare.28426238>.

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