

# Teacher Training and Inclusive Physical Education: A Systematic Review

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## **Abstract:**

The central purpose of this study is to compile and analyze the models, approaches, and trends in teacher training in the field of inclusive physical education in the Latin American context, through a systematic literature review. The methodology was structured according to the PRISMA protocol guidelines, ensuring a systematic and transparent approach in the identification and selection of relevant studies. To this end, prestigious academic databases such as PubMed, Web of Science,

SPORTDISCUS, and ERIC were consulted, considering publications available in English and Spanish from the last five years. The results provided significant scientific evidence on the models, approaches, and trends that underpin teacher training for professionals in the field of inclusive physical education, with an emphasis on Latin America. These findings reflect theoretical models encompassing universal design for learning; cultural competence; inclusive sport; inclusive play; and the social approach to disability. They also include pedagogical approaches of a critical-social, justice and human rights, and intercultural nature. The study highlights the importance of service, reflection, and cooperation, expressed in trends toward a social and human rights model, and in the development of attitudes. In pedagogical terms, the study emphasizes the need for a multidimensional approach to models, approaches, and trends to train professionals who foster the inclusive nature of physical education. For the Latin American context, the challenge lies in contextualizing these approaches and imbuing them with its own identity.

**Keywords:** *initial training, inclusive physical education, trends, approaches, models*

## **Introduction**

Vaillant's findings (2019) indicate that, “among the challenges of teacher training in Latin America, the organizational structure stands out, presenting a strong dichotomy linked to the priorities of the countries” (p. 37). Teacher training is sometimes offered at universities through faculties of education. There are also teacher training colleges and non-university tertiary-level teacher training institutes. A second challenge is the selection of teacher candidates. Candidates are frequently required to demonstrate strong performance in mathematics and language, as well as interpersonal skills and a strong motivation to teach and learn. More recently, some Latin American countries have included personality tests among their selection mechanisms to avoid potential negative psychological effects on their students. The third challenge is related to curricular guidelines because, in many Latin American countries, curricula are characterized by an accumulation of conceptual knowledge in the disciplinary and pedagogical fields.

Inclusive education has become a cornerstone in building equitable and high-quality education systems that respond to the diverse needs, interests, and abilities of all students. This paradigm, far from being a mere statement of principles, implies a profound transformation of school cultures, policies, and practices. In this context, Physical Education (PE), due to its experiential, bodily, and

social nature, stands as a privileged space for promoting participation, equity, and the recognition of difference.

However, it can also reproduce barriers and mechanisms of exclusion, especially for students with disabilities or other forms of functional diversity. Therefore, achieving genuine Inclusive Physical Education (IPE) is presented not only as an ethical ideal, but also as a legal and pedagogical imperative supported by international frameworks such as the Convention on the Rights of Persons with Disabilities and the Sustainable Development Goals.

The main challenge in fulfilling this imperative lies in the effective preparation of teachers; teacher training constitutes the cornerstone upon which educators build their frameworks, beliefs, and professional competencies. It is at this stage that the foundations of a reflective, critical, and diversity-sensitive pedagogical practice can be laid, or, conversely, traditional, homogenizing, and exclusionary models can be perpetuated.

In 2019, Reina et al. concluded that “one of the most significant barriers to the implementation of inclusive education is the perception of insufficient preparation on the part of teachers” (p. 281). This highlights a potential disconnect between theoretical discourses on inclusion and the practical tools that students in faculties of education and sports science receive.

In the Latin American context, this problem takes on specific nuances. The region, characterized by its vast cultural diversity and profound socioeconomic inequalities, faces the challenge of designing educational proposals that are contextually relevant and respond to its particular educational realities. While there is a growing consensus on the importance of EFI, but its operationalization in teacher training curricula reveals notable gaps and heterogeneities. Some programs address it transversally, others through isolated subjects, and in many cases, “an approach focused on curricular adaptation persists from a rehabilitative rather than a pedagogical perspective.” (Estévez et al., 2022, p.1067).

Given the above, it is evident that, although there has been significant progress in inclusive physical education, there is still a long way to go. The continuous updating and refinement of pedagogical, methodological, and didactic knowledge are essential to guarantee inclusive educational practices that promote the equitable participation of all students, regardless of their abilities or circumstances.

In this regard, Tejero, et al.(2022) proposes that “it is necessary to develop strategies that are sufficiently effective to promote a more inclusive educational environment, improving the competence of the Physical Education teacher and modifying exclusionary attitudes on the part of peers” (p. 2). Consequently, the more strategies the teacher has, the more opportunities there will be to find answers to different educational needs.

In contemporary Latin America, it is essential to identify the prevailing models, approaches, and trends in teacher training for Inclusive Physical Education. This will allow us to visualize not only innovative experiences and best practices but also the conceptual frameworks guiding the transformation of teacher education in the region. Different perspectives are critically analyzed, “ranging from models based on social competence and participation to those that emphasize universal design for learning or critical pedagogy of inclusion” (Reina et al., 2019, p. 279). Understanding these trends is crucial for guiding curricular decision-making, the design of educational policies, and future research. This work aims to contribute to the academic and professional dialogue, underscoring, according to Molina & Sandoval (2019), “the need for teacher training in Inclusive Physical Education to shift from a paternalistic 'integration' approach toward an emancipatory and community-based 'inclusion' model” (p. 197). This empowers teachers to create learning environments where every student, without exception, can experience, enjoy, and benefit from physical and sporting activity.

Study objectives:

To compile and analyze the main models, theoretical approaches and trends on teacher training in inclusive physical education in the Latin American context.

To analyze the main models, theoretical approaches and trends on teacher training in inclusive physical education in the Latin American context

## **Methodology**

This is a documentary study, based on a “Systematic Review,” which is considered “a form of research that compiles and provides a summary on a specific topic (aimed at answering a research question); it must be carried out according to a pre-established design” (Aguilera-Eguía, et al., 2024, p. 1125). The PRISMA 2020 protocol was used, implementing a flowchart to graphically

represent the critical path of the systematic review, its thoroughness, and the rigor of the process. Serrano, et al., 2022, p. 57).

The documentary search strategy was carried out by consulting databases such as Dialnet, Scielo, Redalyc, Latindex, ScienceDirect, Scopus, Web of Science, ERIHPlus, and Communication Source. Keywords used included: Inclusive Physical Education, Adapted Physical Education, Physical Education for People with Disabilities, Physical Education for People with Special Educational Needs (from the category “Inclusive Physical Education”); and Teacher Training; Pedagogical Strategies; Educational Experiences; Inclusive Strategies; Inclusive Culture.

The information classification process considered whether it had been generated within the last five years; scientific articles published in academic journals, books or edited articles, and research reports published in academic repositories. It also considered whether the information presented theoretical and methodological frameworks for the two study categories and their components, in either Spanish or English.

The selection criteria considered were inclusion and exclusion criteria such as:

Inclusion criteria:

- ✓ Open access materials or materials available in Latin American university libraries and specialized databases
- ✓ Published in the last five years
- ✓ Spanish or English language
- ✓ That are directly related to the research objective.

Exclusion criteria:

- ✓ Materials that are not found in specialized databases
- ✓ More than five years since publication
- ✓ Language other than Spanish or English
- ✓ That are not related to the overall research objective.

The process of obtaining and presenting results was based on the interpretation and analysis of the data found in the research, specifically the descriptive analysis (authors, year, country, use of inclusive practices, and results for students with disabilities). Tables and graphs were used to visualize trends in the practices and their outcomes. The narrative synthesis of the findings and the qualitative description of the connections and explanations in the studies were also included.

The discussion of the results began with the findings obtained, which were then interpreted and compared with other research. The main findings were summarized, and gaps and areas for future research were identified. The limitations of the study were also considered.

## Results and discussion

### 1. List of selected studies

Table 1. Selected studies, authors, years, type of studies and category addressed.

#	Studies	Authors- Year	Type of study	Category that addresses
1	Continuing education in inclusive schools at the European level.	Angulo & Conde (2022)	Article	Tendencies
2	Teacher training for Physical Education teachers in inclusive education.	Benítez-Sillero, et al., (2021)	Article	Models
3	The social model of disability: a paradigm shift and the reform of Article 49 CE.	de los Cobos (2022)	Article	Models
4	Analysis of physical education classes in the context of inclusive education.	Feraud et al., (2024)	Article	Approaches
5	Cooperative learning and autism spectrum disorder.	Fernández et al., (2020)	Article	Tendencies
6	Physical education teacher training for educational inclusion in Latin America: a systematic review.	Ferreira (2021)	Article	Models
7	Challenges of Continuing Teacher Training: a systematic review.	Galván et al., (2023).	Article	Tendencies
8	The purpose of tutoring in the development of the practicum: To accompany and facilitate the process of acquiring professional skills.	García & Sepúlveda (2022)	Article	Approaches

9	The other sport... Socially inclusive.	Gomez (2022)	Article	Models
10	Physical education and disability: A systematic review of research.	Haegle & Kirk (2021)	Article	Models
11	Teacher training from a critical-social perspective. Between reproduction and resistance. Blank spaces.	Hernández & Flores (2021)	Article	Approaches
12	Physical education teacher training for inclusion: from theory to critical practice.	Hernández & López (2020)	Article	Approaches
13	Inclusive Physical Education: a look from the social model of disability and human rights.	López & Reina (2021)	Article	Approaches
14	Service-Learning in the teacher training of physical education teachers for educational inclusion.	Molina & Sandoval (2019)	Article	Approaches
15	Continuing education for professionals: the importance of developing research skills in teachers to strengthen university education.	Moreno (2021)	Article	Tendencies
16	Cooperative learning of children with physical disabilities in Physical Education classes.	Narvaez et al., (2025)	Article	Approaches
17	Inclusive physical education in Latin America: a systematic review.	Ocampo (2021)	Article	Models
18	Curricular guidelines for physical education in Colombia: A systematic review.	Quilindo (2023)	Article	Tendencies
19	Inclusive physical education and bullying of people with disabilities	Peláez (2021)	Bachelor's thesis	Tendencies
20	Continuing professional development for teachers in higher education.	Pupo et al., (2021)	Article	Tendencies
21	Training in adapted physical activity: from the medical model to the social model of disability.	Queen (2020)	Article	Models
22	Attitudes and behavioral intentions towards inclusion in physical education: effect of the practice modality and gender?	Reina, et al., (2019)	Article	Tendencies
23	Exploring pre-service physical education teacher competence, self-efficacy, and knowledge in teaching students with disabilities.	Sato et al., (2022)	Article	Models
24	Professional development in adapted physical education: A systematic review.	Sato, et al., (2022)	Article	Tendencies

25	Towards a decolonial physical education: contributions from critical interculturality in Latin America.	Siede, & González (2022)	Article	Approaches
26	Effects of a disability awareness program in Physical Education.	Tejero et al., (2022).	Article	Tendencias
27	Bibliometric analysis of the development of Physical Education didactics.	Torres et al. (2024)	Article	Approaches
28	Evaluation of educational inclusion in basic and secondary educational institutions, through the UNESCO Inclusion Index.	Quintana, PA (2024).	Article	Tendencias
29	Physical education teacher training for educational inclusion in Chile.	Vásquez et al., (2019).	Article	Models
30	Trends in teacher training in physical education for addressing diversity in Latin America.	Vásquez et al., (2023).	Article	Approaches

## 2. Representation of the types of study

-Scientific Articles: 29 studies (96.6%)

-Undergraduate Thesis: 1 study (3.3%)

The evidence base is overwhelmingly dominated by peer-reviewed scientific articles, indicating that research in this field is active, undergoes scientific validation, and is primarily communicated through formal academic channels. The presence of a thesis adds complementary perspectives (teacher training and global policy framework), but these are marginal in volume.

## 3. Distribution by year



Figure 1: Distribution of studies by year

A very marked peak in scientific productivity is observed in 2021 and 2022 (58% of the combined total). This suggests a recent and growing interest in the topic, possibly driven by greater social awareness of inclusion, the implementation of new educational policies, or the academic response to the challenges of the pandemic. Production remains active in 2023–2025, confirming that it is a current line of research.

### 3. Categories or keywords

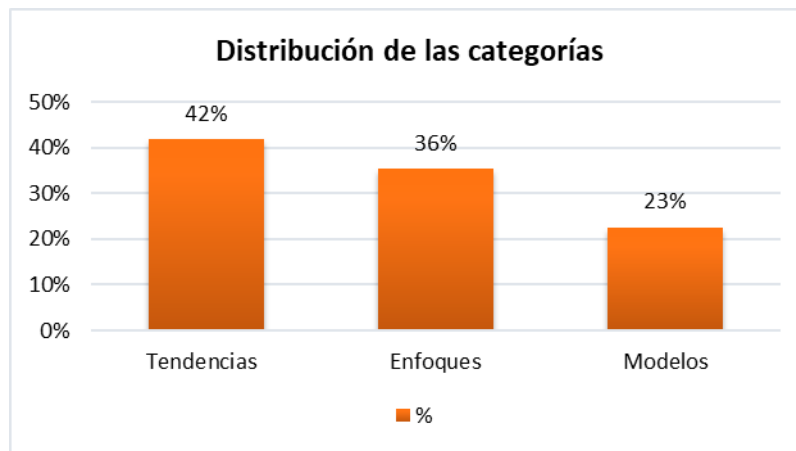


Figure 2: Distribution of categories

The "Trends" category (13 studies) is the most frequent, indicating that current literature focuses on identifying, reviewing, and analyzing the direction the field is taking (teacher training, attitudes, awareness, bullying). "Approaches" (11 studies) follows closely behind, referring to the methodologies and strategies applied directly in the classroom (cooperative learning, service learning, decoloniality). "Models," although less frequent (7 studies), is crucial, as it addresses the theoretical and conceptual frameworks that underpin practice (social vs. medical model).

### 4. Journals and Databases

**Table 2** Frequency of major journals and databases

Magazine	Studies	%	Database
Challenges	4	12.9%	Scopus, Dialnet, MIAR
Pedagogical Studies	2	6.5	Scopus, SciELO
Conrad	2	6.5	Latindex, MIAR
European Physical	2	6.5	Web of Science (SSCI), Scopus

Education Review			
Journal of Sport and Health Research:	1		Scopus, ESCI (Web of Science)
Notes. Physical Education and Sports	1		Scopus, ESCI (Web of Science)
Culture, Science and Sport	1		Web of Science (SSCI), Scopus
Quest:	1		Web of Science (SSCI), Scopus
Journal of Teaching in Physical Education	1		Web of Science (SSCI), Scopus

Other journals (1 study each): Human Review, Lex Social, University Science and Technology, EFEI, Espacios en Blanco, Sportis, Sport TK, Revista Espacios, PODIUM, Revista Española de Educación Física y Deportes, GADE.

*Main models, trends and theoretical approaches on teacher training in inclusive physical education. Trends and challenges.*

Educational inclusion in physical education faces unique challenges due to the physical, cognitive, and social barriers that students with Special Educational Needs (SEN) may encounter. To overcome these difficulties, models, trends, and theoretical approaches to teacher training that promote adapted pedagogical practices are identified.

## **I. Theoretical models of teacher training in Inclusive Physical Education**

### **I.1. Universal Design for Learning (UDL) in EFI:**

It is a model originating from architecture and general education, which has been effectively adapted to Physical Education. It proposes designing curricula, activities, and learning environments that are accessible to everyone from the outset, eliminating barriers before they arise. It is based on three fundamental principles: providing multiple forms of representation (the "what" of learning), multiple forms of action and expression (the "how"), and multiple forms of motivation and engagement (the "why").

Its application in teacher training is realized by teaching professionals to plan their lessons by offering variations in rules, equipment, space, and participation from the very beginning, instead of making reactive adaptations for a specific student. This model proposes three principles: multiple representation, diverse action and expression, and affective engagement. In EFI (Educational

Physiology), this is realized through the use of diverse materials, flexible rules, and differentiated assessment.

#### I.2. The Model of Cultural Competence and Humility:

This model emphasizes the need for teachers to develop awareness, attitudes, and skills to work effectively with students from diverse cultural, linguistic, socioeconomic, and ability backgrounds. "Cultural humility" implies a commitment to critical self-evaluation and to addressing power imbalances in the teacher-student relationship. The training includes autobiographical reflection, case studies, and the development of empathy and genuine respect for differences, understanding that culture also includes "disability culture."

#### I.3. The Inclusive Sport Education Model:

Designed for pre-professional internships, this model simulates an authentic sports season where students take on various roles (player, coach, referee, scorer, manager). To make it inclusive, the rules are modified, mixed and heterogeneous teams are used, and every role is valued, not just that of star player. This model is applied in training when students are coached to structure seasons, teach their peers (coaching role), and create a learning community where everyone has a vital responsibility for the group's success.

#### I.4. The Comprehensive Teaching Model of Inclusive Play:

Teachers learn to design modified games (play formats) that maintain the essence of the sport but are inherently more accessible, promoting participation and enjoyment for everyone. Tactical understanding of the game is prioritized over pure technical execution. By focusing on decision-making and the logic of the game, it allows students with varying levels of motor skill to participate in the same cognitive-tactical challenge. The rules and playing area can be easily modified to include everyone (e.g., lower baskets, larger and slower balls).

#### I.5. The Social Model of Disability applied to PE:

It is the foundation of all training, teaching students to critically analyze physical and social environments, challenge stereotypes, and become agents of change for social justice both inside and outside of school. This model posits that "disability" is not a deficit of the person, but rather the result of attitudinal, physical, and social barriers present in the environment. The professional's

mission is to identify and eliminate these barriers in the gymnasium, on the track, or in the rules of the game. It is associated with other more specific models such as: the Adapted Physical Education (APE) vs. Inclusive Physical Education Model; the Social Model of Disability; and the Social Competence Model.

In Latin America, the adoption of these models is emerging and is influenced by a strong human rights context and struggles for social equity. They are identified by characteristics such as:

- ✓ **Community and Social Perspective:** There is a trend toward complementing international models with Latin American pedagogical perspectives, such as Paulo Freire's Pedagogy of Liberation, emphasizing education as a practice of freedom and social transformation. This training aims to create critical professionals who challenge exclusionary structures.
- ✓ **Implementation challenges:** Despite progress, challenges persist, such as a lack of resources, insufficient training of university faculty, still very traditional curricula, and resistance to cultural change. Research indicates that in many programs, inclusion is treated as an isolated course rather than as a cross-cutting principle throughout the entire training.
- ✓ **Models in Development:** specific proposals from the region are emerging that integrate indigenous games, cultural diversity and popular knowledge as pedagogical resources for inclusion, moving away from the mere replication of Anglo-Saxon models.

## II. Dominant pedagogical approaches in teacher training in Inclusive Physical Education

Teacher training for new professionals in Inclusive Physical Education must move beyond the traditional focus on technique and performance, adopting socio-pedagogical frameworks that respond to human diversity. Internationally, and particularly in Latin America, current approaches are characterized by their critical, social, and human rights perspective.

**II.1. Critical-Social and Social Justice Approach:** This approach questions the structures that generate exclusion within and outside the sports field. It does not simply "include" the individual in a pre-existing system, but rather seeks to transform that system to make it equitable. Training under this paradigm teaches professionals to identify and challenge attitudinal, physical, and programmatic barriers, as well as the power dynamics that perpetuate discrimination based on

disability, gender, ethnicity, or socioeconomic status. This approach is represented by Hernández & López (2020) and Hernández & Flores (2021). Both use inclusive education as a tool to challenge inequalities and empower marginalized students.

II.2. Human Rights-Based Approach: This framework understands physical education, sport, and recreation not as a luxury, but as a fundamental right recognized in international instruments such as the Convention on the Rights of Persons with Disabilities. Training is geared towards ensuring that students learn to guarantee this right, moving from a charitable or medical model (which pathologizes difference) to a social model that values diversity and “demands universal accessibility and the design of activities from a multidimensional human perspective” (López & Reina, 2021, p. 18).

II.3. Decolonial and Intercultural Approach: Specifically relevant to Latin America, this approach challenges the hegemony of Eurocentric models of physical education and sport. It promotes the incorporation of ancestral and popular knowledge, games, and bodily practices of Indigenous peoples and local communities. Within this approach, Siede & González (2022) assert that training includes reflecting on how these diverse practices can be part of a truly inclusive physical education that respects and celebrates cultural identities (p. 72). It has an ecological focus, as it analyzes the interaction of individual, school, and community factors in inclusion in PE.

II.4. Service-Learning (SL) Approach and Reflective Practice: This is the methodological pillar for operationalizing the previous approaches. Training ceases to be purely theoretical and becomes linked to the community. Students develop real-world projects in diverse contexts (regular schools, community centers, associations of people with disabilities), where they must design, implement, and evaluate inclusive proposals. According to Molina & Sandoval (2019), “guided reflection on these practices is fundamental for developing critical, empathetic, and problem-solving skills” (p. 201).

II.5 Cooperative Learning Approach: It is defended in 2025 by Narvaez, et al., highlighting “collaborative work with other disciplines (occupational therapy, psychology, social work, the culture of modifying rules, spaces and equipment to integrate people with disabilities into conventional sports”. (p. 6).

Narvaez et al. (2025) also state that, in Latin America, the implementation of these approaches faces particular challenges, such as structural social inequality, lack of resources, and the persistence of traditional models in many universities (p. 7). However, there is a growing body of academic work and professional movements advocating for:

- The cross-cutting integration of inclusion throughout the curriculum, not just in an isolated subject.
- The use of accessible and low-cost technologies to adapt activities and materials.
- Participatory action research, where teachers investigate with communities and not about them, to generate contextually relevant knowledge.

### III. Current Trends in Teacher Training in Inclusive Physical Education

Some specialists in the field believe that teacher training in Inclusive Physical Education (IPE) is undergoing a paradigm shift globally. The focus is moving from "integration" (adapting the individual to the existing system) to "full inclusion" (transforming the system to embrace everyone). This evolution is reflected in key trends such as: the shift from the Medical Model to the Social and Human Rights Model; the focus on Inclusive Teaching Competencies; Active and Experiential Teaching Methodologies; and Attitude Development.

#### III.1. Transition from the Medical Model to the Social and Human Rights Model

The most crucial trend is the abandonment of the medical-rehabilitative model, which pathologizes disability, and the adoption of the social model. This model understands that barriers are not in the person, but in the environment (physical, attitudinal, curricular). Therefore, training “no longer focuses solely on 'treating' deficiencies, but on empowering teachers to identify and eliminate barriers, guaranteeing the fundamental right to participation for all students” (Quintana, 2024, p. 11). This trend is associated with an “intersectional perspective that addresses the interaction of gender, ethnicity, and disability in experiences of exclusion in EF”. Quilindo, 2023, p. 163).

#### III.2. Focus on Inclusive Teaching Competencies

Competency-based approach: training teachers in specific competencies for inclusion (e.g., designing adaptations, using accessible ICTs).

Curricula are being redesigned to develop specific competencies that go beyond technical knowledge. These include:

- ✓ Attitudinal Competencies: Promote values of empathy, equity, social justice and respect for diversity.
- ✓ Universal Design for Learning (UDL) Competencies: To train in the creation of multiple and flexible activities, materials and assessments that address the diversity of learners from their conception, without the need for subsequent adaptations.
- ✓ Collaborative Competencies: Training to work as a team with other professionals (educators, therapists, psychologists) and, especially, with students and their families.

III.3. Active and Experiential Teaching Methodologies. Evidence-Based Training (EBT): use of empirical research to guide inclusive practices (e.g., effectiveness of UDL in PE).

- ✓ Problem-Based Learning (PBL) and Real Cases: Situations from real educational practice are presented so that students can design inclusive solutions.
- ✓ Inclusive Professional Practices: It is essential that teaching practices take place in diverse educational contexts that effectively implement inclusion, and not only in special education centers. Service Learning (SL): combines theory with real-world projects in diverse communities (e.g., workshops with special education schools). Use of ICT to support participation.

#### III. 4. Emphasis on Attitude Training

Research shows that the strongest predictor of successful inclusive teaching practice is a positive attitude; where “training programs dedicate explicit efforts to working on teachers’ beliefs, prejudices and perceptions, through critical reflection and direct and positive contact with diversity.” (Reina et al., 2019, p. 281)

## Conclusions

1. The most effective pedagogical models in teacher training in EFI require a multidimensional approach that facilitates the design of pedagogical practices for diversity:
2. Current socio-pedagogical approaches, led by critical and human rights perspectives, seek to train professionals as agents of change: facilitators who not only know how to adapt a game,

but are able to co-construct, with communities, spaces where bodily, cognitive and cultural diversity is the foundation of pedagogical practice in Inclusive Physical Education.

3. Current trends in teacher training in Inclusive PE at the international level and in Latin America are moving towards a holistic model that combines the human rights framework, the development of practical teaching skills and in-depth work on attitudes.
4. For Latin America, the challenge and the opportunity lie in contextualizing these models, trends, and approaches imbued with its own identity, and ensuring that training ceases to be theoretical and becomes a living, critical, and transformative practice that prepares professionals to build physical activity environments truly for everyone.

## **Contribution of the review**

The study highlights the need to understand the main models, approaches, and trends in teacher training in EFI; as well as their contextualization in the Latin American space.

## **Limitations of the study**

The study for next stages may include the perspective of models, trends and approaches applied to adapted sport as a continuation of physical education.

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