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## Inclusion as a co-produced accomplishment: a stakeholder-sensitive systematic review of barriers and facilitators in inclusive physical education

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### ABSTRACT

Inclusive physical education (IPE) is considered by many to be the best way to allow people with disabilities, equal opportunities for engaging in physical activities but its actual implementation varies greatly within educational systems. This systematic review was conducted to uncover the barriers and facilitators to IPE implementation and to see how various stakeholders influence the process. The study was carried out in line with the PRISMA (2020) guidelines. Through a structured search of the Scopus database, 357 articles were found; after excluding 14 duplicates and through successive screening, 18 studies published between 2021 and 2025 were selected according to the inclusion and exclusion criteria. Barriers and facilitators were synthesised using a socio-ecological framework distinguishing individual, relational, and structural determinants. The corpus (n = 18) was predominantly qualitative and spanned twelve countries, integrating the perspectives of teachers, pre-service teachers, and students with disabilities. Across the included studies, inadequate teacher preparation was the most consistently reported barrier, while practicum-based teacher education emerged as the most strongly evidenced facilitator. Notably, multiple studies converged on the finding that physical placement in mainstream classes did not, by itself, secure social belonging. Thematic analysis unfolded that lack of sufficient initial and continuous teacher training, poor structural settings, and inflexible pedagogical conventions are still major obstacles, whereas focused teacher education, reflective and individualized teaching methods, and nurturing school environment act as facilitators. Results show that physical inclusion alone is not sufficient to bring about social inclusion. This review offers an integrated, stakeholder-aware narrative on IPE implementation, provides useful advice for teacher training, and lays down a research agenda emphasizing student voice and longitudinal designs.



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## Introduction

Physical education (PE) is a unique element of compulsory schooling as it is the only curricular avenue through which students incarnate learning, develop their motor skills, and engage socially together with their peers. Worldwide, educational systems have embraced inclusive education as a matter of human rights and social justice, and PE is gradually being viewed as a means through which every student, including those with

disabilities, can be given substantial and equitable opportunities for participation (D'elia, 2021; Richardson et al., 2023). Inclusive PE is not just about being physically in the same space; it is about the kinds of participation, belonging, and learning that disabled and non-disabled students share together (Croston & Hills, 2017; Apeldo, 2019). As national curricula and international policy frameworks continue to prioritise equity, understanding how inclusive physical education (IPE) is implemented in daily practice has become a major issue for academics and practitioners (Engelbrecht et al., 2025).

Nonetheless, the execution of IPE is still irregular and in many cases does not achieve the expectations that have been set. Teachers mention that they are at a loss as to what extent they can adapt activities; how to handle the diverse skills of a class; and how to strike a balance between the demands of achievement and participation (Petrie et al., 2018; Maher & Fitzgerald, 2020). Students with disabilities still report that even in the places which are supposed to be inclusive, they feel marginalised, excluded, and invisible (Tanure Alves et al., 2024; Holland et al., 2023). This continuous gap between policy objectives and classroom realities is the problem that the present review seeks to address: although the conditions for inclusion in PE have been studied in depth in many separate research, the documentation of these conditions fragmented across different populations, countries, and methodologies.

Several angles have been explored in research on inclusive physical education. Most of the work has focused on understanding teachers' attitudes towards, self-efficacy in, and concerns about, the inclusion of students with disabilities. Generally results show that attitudes are moderately positive, but only when teachers have received training and gained experience (Alhumaid, 2022; Braksiek, 2022; Wang et al., 2020). Another angle has been to look at professional preparation, with an emphasis on how initial teacher education and continuing professional development may condition teachers' readiness for inclusive teaching (Makopoulou, 2018; Neville et al., 2020; Maher et al., 2022). More recently, attention has shifted on the voices and experiences of students themselves, highlighting learners with autism, sensory impairments, and intellectual disabilities (Lesslie & Blagrove, 2024; Meier et al., 2023; Zimlich & Reuter, 2024).

At the conceptual level, a number of frameworks have been refined and, at methodological levels, researchers have been increasingly using qualitative and participatory designs to portray the meanings of inclusion as understood by participants (Martos-Garcia et al., 2023; Sandbichler et al., 2025). Others have been conducting experiments with targeted interventions, ranging from cooperative activities and adapted aquatic programs to maker-based and arts-integrated approaches, all intended to increase participation (Lee et al., 2022; Kwon et al., 2025; Sindiani & Hutzler, 2025). Pedagogical models such as Universal Design for Learning have become popular as possible solutions that enable disabled and non-disabled students to be taught together (Haegele et al., 2024; Grenier et al., 2025). Instruments that measure the inclusiveness of PE environments have also been made and cross-culturally validated (Giese et al., 2022).

Unlike prior syntheses that are either bibliometric or confined to a single disability or stakeholder group (e.g., Barros et al., 2023), this review makes an integrative contribution: it is, to our knowledge, the first to place teacher-preparation determinants in direct dialogue with students' lived experiences within a single socio-ecological framework, thereby reframing inclusion as a co-produced rather than teacher-delivered outcome. Consequently, the field lacks an integrated account that brings teachers' preparation and perceptions into dialogue with students' lived experiences. Without such integration, recommendations risk privileging the perspective of one group, for instance treating teacher training as a panacea while overlooking the structural and relational conditions that students identify as decisive (Brunssen & Kastrop, 2025).

A second, theoretical and methodological limitation concerns the conceptual treatment of inclusion itself. Studies vary considerably in how they define inclusion, ranging from placement-oriented conceptions to relational and social-justice framings, which complicates comparison and cumulative knowledge-building (Drury et al., 2023; Mihajlovic, 2017). Moreover, the dominance of cross-sectional and self-report designs constrains causal inference, and the relative scarcity of longitudinal and intervention research limits understanding of how facilitators operate over time (Makopoulou et al., 2021; Thoren et al., 2021). These limitations underscore the need for a synthesis that is explicit about conceptual variation and attentive to methodological strengths and weaknesses.

The urgency of this review is heightened by the contemporary policy environment, in which inclusion is increasingly mandated yet inconsistently resourced, and by a rapid recent growth in empirical output that has not been consolidated (Haegele & Yun, 2025; Sumaryanti et al., 2018). Synthesising the most recent evidence is therefore timely both for advancing theory and for informing the design of teacher preparation, curriculum, and policy. Against this backdrop, the present systematic review consolidates peer-reviewed evidence published between 2021 and 2025 to provide a coherent, stakeholder-sensitive account of what hinders and what enables inclusive physical education.

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Accordingly, the first aim of this review is to identify the principal obstacles that impede inclusive practice across diverse educational settings. This contribution clarifies whether barriers are predominantly individual, relational, or structural, and thereby informs where intervention is most needed. The corresponding research question is stated below.

RQ1: What are the main barriers to the implementation of inclusive physical education across different educational contexts? The second aim is to determine which conditions, resources, and practices support successful implementation. By foregrounding facilitators rather than deficits alone, the review offers an asset-based orientation that can guide professional development and school improvement (Tristani et al., 2021; Sullivan et al., 2025).

RQ2: What factors facilitate the successful implementation of inclusive physical education in schools? The third aim is to examine how the perspectives of different stakeholders converge and diverge in shaping implementation, an angle that distinguishes this review from prior single-group syntheses. Integrating teacher, pre-service teacher, and student viewpoints constitutes the principal novelty of this work and enables recommendations that are simultaneously pedagogically and experientially grounded (Beťák et al., 2025; Nemček, 2024). RQ3: How do the perspectives of physical education teachers, pre-service teachers, and students with disabilities shape the implementation of inclusive physical education?

## Method

A systematic literature review (SLR) was selected as the most appropriate design because the research questions require the transparent, replicable, and comprehensive aggregation of a dispersed evidence base. The SLR approach minimises selection bias and enhances the trustworthiness of conclusions relative to narrative reviews (Tranfield et al., 2003). The review was conducted and reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses 2020 statement (Page et al., 2021), which refined the earlier reporting standard (Moher et al., 2009). The PRISMA framework structured each phase of identification, screening, eligibility assessment, and inclusion, ensuring methodological accountability throughout.

A Boolean search string was constructed around three conceptual blocks: the setting (physical education), the inclusion construct, and the implementation determinants. Truncation was used to capture lexical variants, and the search was applied to the title, abstract, and keyword fields. The exact string was as follows: ("inclusive physical education" OR "inclusive physical education program" OR "inclusive PE" OR "adapted physical education" OR "inclusive sport education") AND (barrier\* OR challenge\* OR obstacle\* OR constraint\* OR limitation\* OR facilitator\* OR enabler\* OR support\* OR determinant\* OR factor\* OR implementation OR adoption)). The field code TITLE-ABS-KEY restricted retrieval to records in which the relevant terms appeared in the title, abstract, or indexed keywords. Wildcard truncation (e.g., barrier\*, facilitat\*, implement\*) ensured the inclusion of singular, plural, and morphological variants. No additional language or date limiters were embedded in the string itself; eligibility limiters were applied at the screening stage as detailed below.

Scopus served as the single, primary information source for study selection because of its broad multidisciplinary coverage of peer-reviewed sport pedagogy, education, and disability journals and its reliable, structured metadata export. The search was executed in a single session, and the complete bibliographic metadata, comprising authors, titles, source titles, publication years, document types, abstracts, keywords, and digital object identifiers, were exported for screening. The exported metadata constituted the authoritative evidence base for all selection decisions and for the construction of the PRISMA flow. Scopus was selected as the primary source given its broad, structured indexing of peer-reviewed sport-pedagogy and disability journals and its reliable metadata export. We acknowledge that restricting retrieval to a single database may have omitted records indexed only in ERIC or SPORTDiscus; this constraint is revisited in the limitations.

Eligibility was governed by predefined inclusion and exclusion criteria, summarised in Table 1. These criteria operationalised the review's scope by restricting inclusion to peer-reviewed empirical or critical scholarship that directly addressed barriers and/or facilitators to inclusive physical education in educational settings.

Study selection proceeded through three sequential stages. In the identification stage, all records retrieved from Scopus were compiled and duplicate records were removed. In the screening stage, the titles and abstracts of the remaining records were examined against the eligibility criteria, and records that were clearly outside the review's scope were excluded. In the eligibility stage, the full texts of potentially relevant reports were assessed in detail, and those that did not satisfy all criteria were excluded with documented reasons. Records were retained only when they demonstrably addressed the implementation of inclusive physical education from the

perspective of teachers, pre-service teachers, or students. Screening decisions were guided by the predefined criteria, and ambiguous cases were re-examined against the full text before a final decision was reached.

**Table 1.** Inclusion and exclusion criteria.

Criterion	Inclusion	Exclusion
Language	English-language publications	Non-English publications
Document type	Peer-reviewed journal articles	Conference papers, book chapters, editorials, notes
Publication period	2021–2025	Published before 2021
Subject area	Physical education, sport pedagogy, adapted physical activity, education	Unrelated disciplines or non-educational contexts
Focus	Directly addresses barriers and/or facilitators to inclusive PE implementation	Instrument/technology validation, pure motor-assessment, or bibliometric studies without implementation focus
Accessibility	Full text available	Abstract-only records
Relevance	School or teacher-education PE context	Tangential mention of inclusion only

The methodological adequacy of full-text reports was appraised using the FICO framework, which evaluates each study across four dimensions: Focus (clarity of aims and alignment with inclusive PE), Information (transparency of design, sampling, and data collection), Context (appropriateness and description of the educational setting), and Outcome (clarity and credibility of reported findings). Each dimension was rated as adequately, partially, or insufficiently addressed. Studies that insufficiently addressed two or more dimensions were not retained for synthesis. Application of this threshold ensured that the synthesised corpus met a consistent minimum standard of methodological transparency while accommodating the diverse designs represented in the field.

A standardised extraction template was applied to each included study to capture the following fields: author(s) and publication year; country or context; study design and methodological orientation; sample composition and disability focus; the intervention, programme, or phenomenon examined; outcome measures or analytic focus; and the principal findings relating to barriers and facilitators. Extracted data populated the descriptive tables and informed the thematic synthesis. Where a study reported multiple relevant outcomes, all findings pertinent to the review questions were extracted to preserve analytic completeness.

To complement the thematic synthesis with a descriptive overview of the corpus, simple bibliometric profiling was undertaken using the exported metadata. The temporal distribution of publications, the geographic distribution of study contexts, and the distribution of methodological orientations and stakeholder foci were tabulated and visualised. This descriptive mapping was intended to characterise the shape of the evidence base rather than to model co-citation or co-authorship networks, and it provides context for interpreting the substantive findings.

Given the methodological heterogeneity of the included studies, a thematic synthesis approach was adopted (Thomas & Harden, 2008). The findings sections of each study were treated as primary data and subjected to a three-stage process of line-by-line coding, the development of descriptive themes, and the generation of higher-order analytical themes organised around the research questions. Coding was informed by the principles of reflexive thematic analysis (Braun & Clarke, 2006). Themes were iteratively reviewed against the source studies to ensure that the synthesis remained grounded in the reported evidence and that areas of agreement, contradiction, and nuance were preserved.

The review complied with the PRISMA 2020 checklist for transparent reporting (Page et al., 2021). The selection process is documented in full in the PRISMA flow diagram presented in Figure 1, and all numerical values reported in the abstract, methods, and results are mutually consistent with that diagram. The complete reference list documents every source cited in the synthesis.

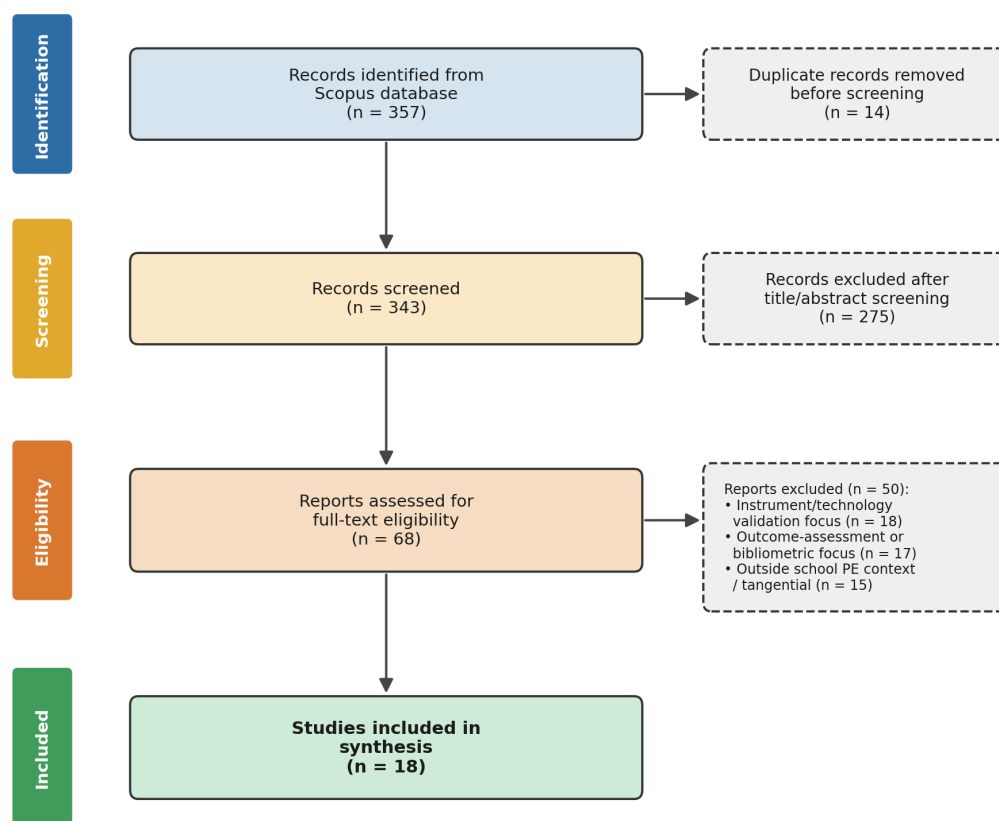


Figure 1. PRISMA 2020 flow diagram of the study selection process (adapted from Page et al., 2021).

## Results and Discussions

The structured search of Scopus identified 357 records. Following the removal of 14 duplicate records, 343 records proceeded to title and abstract screening, at which stage 275 records were excluded for failing to address inclusive physical education or its implementation determinants. The full texts of the remaining 68 reports were assessed for eligibility, and 50 were excluded with reasons: 18 reports focused on the validation of measurement instruments or technological tools rather than implementation; 17 reported isolated motor-assessment outcomes or bibliometric mapping without an implementation focus; and 15 fell outside a school or teacher-education PE context or mentioned inclusion only tangentially. Eighteen studies satisfied all eligibility criteria and were retained for synthesis. These figures are consistent across the abstract, this section, and Figure 1.

The 18 included studies were published between 2021 and 2025, with a marked concentration in the two most recent years (Figure 2), reflecting the field's rapid recent growth. The studies were geographically diverse, spanning twelve countries across North America, Europe, the Middle East, South America, and Southeast Asia (Figure 3). Methodologically, the corpus was predominantly qualitative, complemented by survey-based and quasi-experimental designs and one critical review (Figure 4). Table 2 summarises the descriptive characteristics and principal findings of each study, and Table 3 classifies the studies by research design, thematic focus, and outcome.

**Table 2.** Summary of included studies (n = 18).

Title	Author(s)	Year	Country	Method	Key Findings
Identifying Facilitators and Barriers in Quebec Schools to Promote Inclusive Physical Education	Hebinck et al.	2023	Canada	Cross-sectional survey	Most educators (79.5%) included children with functional limitations, yet 39.4% felt uninformed and ill-

Title	Author(s)	Year	Country	Method	Key Findings
"If only balls could talk...": barriers and opportunities to participation for students with blindness and visual impairment in specialized PE	Meier et al.	2023	Austria	Participatory qualitative	equipped; limited training, knowledge, and resources were key barriers, while educator commitment facilitated inclusion.  Students with blindness/visual impairment perceived persistent participation barriers even in specialised settings and called for adapted equipment and digital solutions to enable meaningful participation.
Discourses of resistance: pre-service teachers' reflections on the challenges of inclusion in physical education	Thorjussen & Wilhelmsen	2025	Norway	Qualitative (textual analysis)	Identified discourses of resistance to PE transformation and to gender diversity, showing how pre-service teachers' entrenched beliefs hinder learner-centred inclusive pedagogy.  Teachers' background knowledge and skills, experience with varied disabilities, and inclusive pedagogy shaped practice; experience was central to developing pedagogical knowledge and overcoming barriers.
A thematic analysis of teachers' experience in inclusive physical education teaching	Suryobroto et al.	2022	Indonesia	Qualitative thematic analysis	'Inclusive' strategies produced both inclusion and marginalisation; strategies should be individualised to each student's needs rather than applied as blanket recommendations.
"Everybody Wants to be Included": Experiences with 'Inclusive' Strategies in Physical Education	Holland et al.	2023	USA	Interpretative phenomenological analysis	Interpersonal and environmental influences shaped
Fear of mistakes: Physical education and	Lesslie & Blagrove	2024	USA	Qualitative interviews	

Title	Author(s)	Year	Country	Method	Key Findings
activity experiences of autistic teenagers					PE experiences; fear of mistakes and social dynamics limited participation, indicating a need for programming modifications.
The invisible student in physical education classes: voices from Deaf and hard of hearing students on inclusion	Tanure Alves et al.	2024	Brazil	Qualitative interviews	Deaf and hard-of-hearing students felt invisible and not understood; the absence of sign-language strategies and teacher interaction rendered PE a place of non-acceptance.
'We Just Do What the Teacher Says'—Students' Perspectives on Participation in 'Inclusive' Physical Education Classes	Sandbichler et al.	2025	Austria	Qualitative interviews	Participation was a negotiated process shaped by teacher orientation, student agency, and body/performance norms; some students benefited while others met structural and symbolic barriers.
Perspectives of Students with intellectual disabilities on Inclusive Physical Education in Germany	Zimlich & Reuter	2024	Germany	Qualitative thematic analysis	Student perspectives depended strongly on the school setting; physical inclusion did not guarantee social inclusion, supporting co-teaching and whole-school inclusion.
Primary and middle school students' views on inclusive physical education: Perceptions, practices, and future directions	Russo et al.	2025	Italy	Survey (questionnaire)	Well-being, collaboration, and attention to students with disabilities emerged as key factors; perceived well-being varied by school level and sex, underscoring enjoyable inclusive climates.
Physical Education Teachers' Representations of Their Training to Promote the Inclusion	Celestino et al.	2024	Portugal	Survey (mixed questions)	Most teachers reported inadequate initial training for inclusion; both initial and

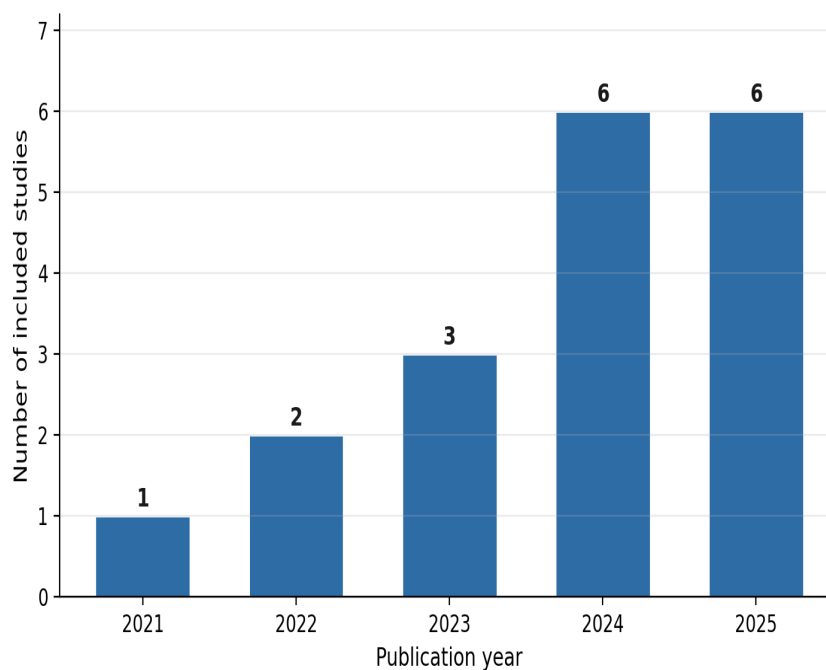
Title	Author(s)	Year	Country	Method	Key Findings
of Students with Disabilities					continuous training emerged as decisive, signalling teacher preparation as a core barrier and facilitator.
Exploring educators' preparedness and program implementation in adapted physical education classes for individuals with autism spectrum disorder	Orhan et al.	2024	Turkey	Qualitative interviews	Educators relied on existing knowledge and required further training for autism; despite gaps they observed positive impacts, underscoring the need for professional development.
Training needs of educators for students with visual impairments and additional disabilities: A qualitative inquiry	Grenier et al.	2025	USA	Qualitative focus groups	Identified barriers to participation and training needs for students with visual impairment and additional disabilities, advocating Universal Design for Learning and flexible curricula. A PETE concept based on typical inclusive-PE requirement situations significantly improved pre-service teachers' situation-specific skills in recognition, individual support, and participation.
Qualification of prospective PE teachers for inclusive PE: development and evaluation of a PETE concept	Erhorn, Wirszing, & Langer	2025	Germany	Quasi-experimental	A seminar combined with a supervised school internship sustained and enhanced pre-service teachers' situation-specific skills for inclusive PE, supporting practice-based teacher education.
Effects of a School Internship on Situation-Specific Skills for an Inclusive PE— Evaluation of a PETE Concept for Prospective PE Teachers	Erhorn, Langer, et al.	2025	Germany	Quasi-experimental (longitudinal)	Universal Design for Learning is widely advocated but empirically under-supported in PE; the
Universal design for learning in physical education: Overview and critical reflection	Haegele et al.	2024	USA	Critical review	

Title	Author(s)	Year	Country	Method	Key Findings
An investigation into the effects of short-course professional development on teachers' and teaching assistants' self-efficacy	Makopoulou et al.	2021	United Kingdom	Repeated-measures design	<p>authors call for theoretically guided, rigorous research before treating it as a panacea.</p> <p>Short-course continuing professional development improved self-efficacy in the short term, but lasting benefits depended on prior efficacy, experience, and course quality, requiring tailored delivery.</p> <p>Attitudes toward inclusion were moderately positive; gender, prior disability-specific training, and knowledge of legislation predicted attitudes, informing teacher-preparation design.</p>
Predictors of Physical Educators' Attitudes toward including Students with Disabilities in Inclusive Classes	Alhumaid	2022	Saudi Arabia	Cross-sectional survey	<p>Attitudes toward inclusion were moderately positive; gender, prior disability-specific training, and knowledge of legislation predicted attitudes, informing teacher-preparation design.</p>

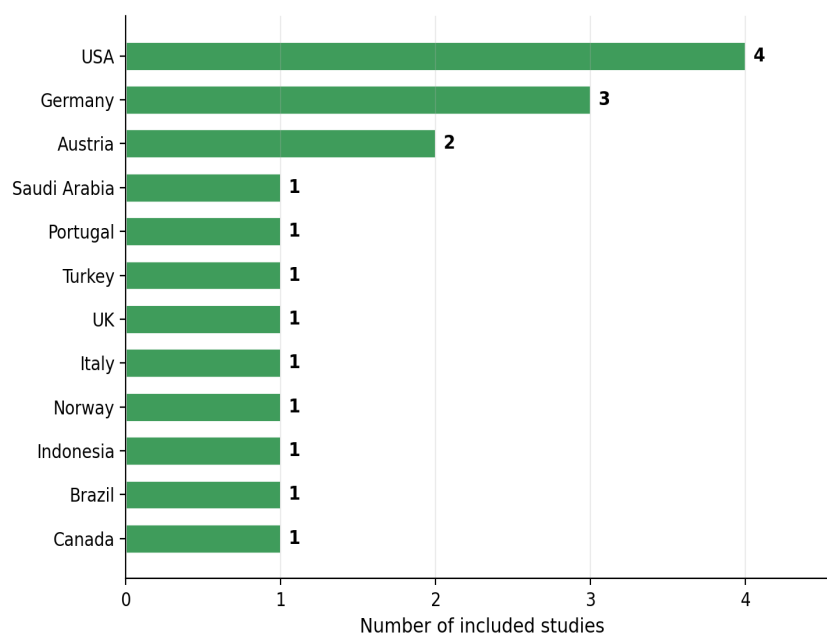
**Table 3.** Study classification by research design, thematic focus, and outcome.

Author(s)	Year	Country	Research Design	Theme/Focus	Outcome
Hebinck et al.	2023	Canada	Cross-sectional survey	Teacher perceptions of barriers/facilitators	Mapped educator-identified barriers and facilitators
Meier et al.	2023	Austria	Participatory qualitative	Student voices (visual impairment)	Persistent barriers; demand for adapted and digital solutions
Thorjussen & Wilhelmsen	2025	Norway	Qualitative textual	Pre-service teacher beliefs	Discourses of resistance to inclusive transformation
Suryobroto et al.	2022	Indonesia	Qualitative thematic	Teacher experience	Experience underpins inclusive pedagogical competence
Holland et al.	2023	USA	Phenomenological (IPA)	Student voices (orthopedic)	Strategies yield both inclusion and marginalisation
Lesslie & Blagrove	2024	USA	Qualitative interviews	Student voices (autism)	Interpersonal/environmental barriers; fear of mistakes
Tanure Alves et al.	2024	Brazil	Qualitative interviews	Student voices (Deaf/HoH)	Communication barriers; feelings of invisibility

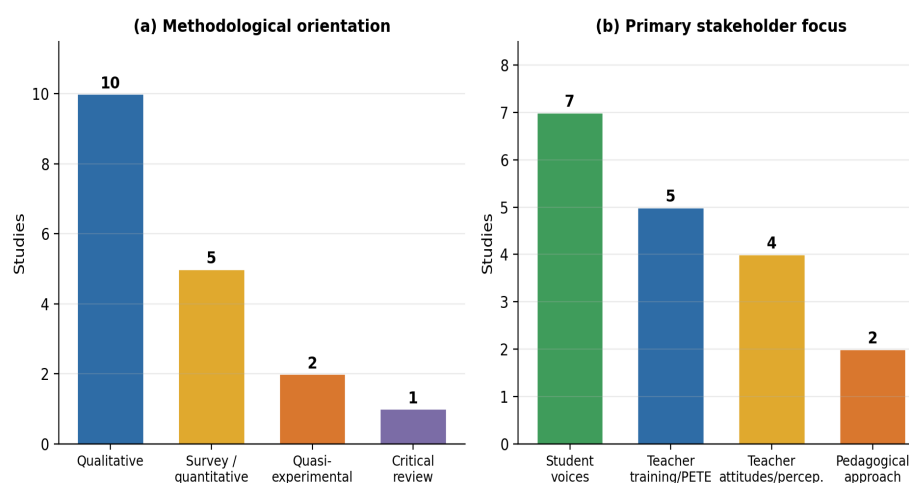
Author(s)	Year	Country	Research Design	Theme/Focus	Outcome
Sandbichler et al.	2025	Austria	Qualitative interviews	Student participation	Participation negotiated; structural/symbolic barriers
Zimlich & Reuter	2024	Germany	Qualitative thematic	Student voices (intellectual disability)	Physical inclusion ≠ social inclusion
Russo et al.	2025	Italy	Survey	Student perceptions/climate	Well-being and collaboration as facilitators
Celestino et al.	2024	Portugal	Survey (mixed)	Teacher training	Initial/continuing training decisive
Orhan et al.	2024	Turkey	Qualitative interviews	Teacher preparedness (autism)	Training gaps despite perceived impact
Grenier et al.	2025	USA	Focus groups	Teacher training needs	UDL and flexible curricula advocated
Erhorn, Wirszing, & Langer	2025	Germany	Quasi-experimental	PETE intervention	Improved situation-specific skills
Erhorn, Langer, et al.	2025	Germany	Quasi-experimental	PETE intervention + internship	Sustained skill gains via practicum
Haegele et al.	2024	USA	Critical review	Pedagogical framework (UDL)	Weak empirical base for UDL in PE
Makopoulou et al.	2021	United Kingdom	Repeated-measures	CPD/self-efficacy	Short-term efficacy gains; quality-dependent
Alhumaid	2022	Saudi Arabia	Cross-sectional survey	Teacher attitudes	Training and policy knowledge predict attitudes



**Figure 2.** Temporal distribution of the included studies by publication year (2021–2025).



**Figure 3.** Geographic distribution of the included studies by country of study context.



**Figure 4.** Distribution of included studies by (a) methodological orientation and (b) primary stakeholder focus.

## Thematic Synthesis

### Findings for RQ1: Barriers to Implementation

Synthesis of the included studies indicates that the barriers to inclusive physical education operate at three interlocking levels: the individual, the relational, and the structural. At the individual level, the most consistently reported barrier is inadequate teacher preparation. Celestino et al. (2024) found that a large majority of experienced Portuguese teachers judged their initial training to have left them without the essential competencies to teach students with specific needs, and Orhan et al. (2024) similarly reported that adapted PE educators in Turkey relied on prior personal experience because their formal preparation was insufficient. Survey evidence from Canada reinforces this pattern: although most physical educators reported including children with functional limitations, a substantial proportion felt neither informed nor equipped to do so (Hebinck et al., 2023). These findings converge on the conclusion that knowledge and skill deficits are a primary and widely distributed barrier.

At the relational level, barriers arise from the social dynamics of the gymnasium and from communication breakdowns between teachers and students. Deaf and hard-of-hearing students described feeling invisible and unable to understand instructions when teachers did not adapt communication or engage with interpreters, transforming PE into a space of non-acceptance (Tanure Alves et al., 2024). Autistic teenagers reported that fear of making mistakes, together with the responses of peers and teachers, constrained their willingness to participate

(Lesslie & Blagrove, 2024). Importantly, even strategies intended to support inclusion could produce marginalisation when applied without sensitivity to the individual, as students with orthopedic impairments experienced certain modifications as embarrassing or othering (Holland et al., 2023). This indicates that relational barriers are not simply the absence of support but can be an unintended consequence of poorly individualised support.

At the structural level, barriers reside in entrenched norms, resourcing, and the organisation of schooling. Pre-service teachers articulated discourses of resistance that naturalised existing arrangements and resisted the transformation of PE toward greater diversity, suggesting that barriers are reproduced through professional socialisation (Thorjussen & Wilhelmsen, 2025). Students themselves identified how prevailing body and performance norms structured their participation, such that inclusion remained contingent on teacher orientation and institutional conditions (Sandbichler et al., 2025). A particularly consequential structural finding is that physical placement does not guarantee social belonging: students with intellectual disabilities reported that being present in mainstream classes did not translate into social inclusion (Zimlich & Reuter, 2024). Taken together, these studies demonstrate that addressing barriers requires intervention beyond the individual teacher, extending to the relational climate and the structural organisation of PE.

### **Findings for RQ2: Facilitators of Implementation**

The facilitators identified across the corpus mirror and respond to the barriers, clustering around teacher education, reflective and individualised pedagogy, and supportive school climates. Teacher education emerged as the most prominent facilitator. Two linked German studies demonstrated that a physical education teacher education (PETE) concept built around typical inclusive-PE requirement situations produced statistically significant gains in pre-service teachers' situation-specific skills, and that adding a supervised school internship sustained these gains over time (Erhorn, Wirszing, & Langer, 2025; Erhorn, Langer, et al., 2025). Continuing professional development was likewise shown to raise teachers' self-efficacy, although its effects were short-lived and contingent on course quality and participants' prior efficacy, indicating that the design and tailoring of professional learning are themselves facilitating conditions (Makopoulou et al., 2021).

Pedagogical approaches that prioritise flexibility and individualisation constitute a second facilitator. Universal Design for Learning was advocated as a framework for accommodating diverse learners and was recommended alongside flexible curricula for students with visual impairment and additional disabilities (Grenier et al., 2025). A critical caveat, however, is that the empirical evidence underpinning Universal Design for Learning in PE remains thin, and Haegele et al. (2024) cautioned against treating it as a panacea in advance of rigorous evaluation. The synthesis therefore positions individualised pedagogy as a promising but not yet fully substantiated facilitator. Teachers accumulated experience also functioned as a facilitator by deepening the pedagogical knowledge needed to respond to varied disabilities (Suryobroto et al., 2022).

Supportive relational and institutional climates form a third facilitator. Student-focused evidence indicates that perceived well-being, collaboration, and explicit attention to students with disabilities are associated with more positive PE experiences, suggesting that an enjoyable and collaborative class climate enables inclusion (Russo et al., 2025). The finding that physical inclusion does not automatically yield social inclusion points to co-teaching and whole-school approaches as structural facilitators that extend responsibility beyond the individual teacher (Zimlich & Reuter, 2024). Finally, teachers' attitudes, which were moderately positive and predicted by prior disability-specific training and knowledge of inclusion policy, represent a malleable facilitator that teacher preparation can deliberately cultivate (Alhumaid, 2022).

### **Findings for RQ3: Stakeholder Perspectives**

Integrating perspectives across stakeholder groups reveals both convergence and divergence. Teachers and pre-service teachers tended to frame implementation in terms of competence, preparation, and the manageability of heterogeneous classes, locating the principal challenge in their own readiness and in the resources available to them (Hebinck et al., 2023; Celestino et al., 2024; Thorjussen & Wilhelmsen, 2025). Students, by contrast, framed implementation in terms of belonging, recognition, and the quality of their relationships with teachers and peers, foregrounding experiential dimensions that teacher-centred accounts can overlook (Meier et al., 2023; Tanure Alves et al., 2024; Sandbichler et al., 2025). This divergence is analytically important because it shows that a focus on teacher competence alone, while necessary, is insufficient to capture what students identify as decisive.

At the same time, the perspectives converge on the conclusion that the teacher is the pivotal mediating agent of inclusion. Students attributed both positive and negative experiences substantially to teacher behaviour, communication, and orientation (Lesslie & Blagrove, 2024; Zimlich & Reuter, 2024), while teacher-focused studies located the key levers of change in teacher preparation and self-efficacy (Erhorn, Wirszing, & Langer, 2025; Makopoulou et al., 2021). The synthesis therefore suggests that effective implementation depends on

aligning teacher preparation not only with pedagogical content knowledge but also with the relational and recognition needs that students articulate. Stakeholder integration thus reframes inclusion as a co-produced accomplishment rather than a teacher-delivered service.

### **Comparative and Critical Analysis**

Methodologically, the corpus is dominated by qualitative designs, which afford rich, situated insight into the meanings of inclusion but limit generalisation, and by cross-sectional surveys, which capture breadth at the expense of causal and temporal inference. Quasi-experimental teacher-education studies represent a methodological strength of the most recent literature, offering tentative evidence of intervention effects (Erhorn, Wirszing, & Langer, 2025; Erhorn, Langer, et al., 2025), yet they remain few and are concentrated in a single national context. The presence of a critical review interrogating a dominant pedagogical framework signals a welcome reflexivity in the field (Haegele et al., 2024). Over the period examined, the literature appears to be evolving from describing attitudes and barriers toward designing and evaluating responses, a maturation that nonetheless remains uneven and under-powered for strong causal claims.

### **Discussion**

Interpreted as a whole, the evidence suggests that inclusive physical education is constrained less by any single deficit than by the misalignment of teacher preparation, pedagogical design, and school structures with the participation and recognition needs of disabled students. The recurring finding that physical placement does not secure social belonging is theoretically significant because it challenges placement-oriented conceptions of inclusion and supports relational and social-justice framings that define inclusion through the quality of participation rather than mere presence (Croston & Hills, 2017; Drury et al., 2023).

We do not claim to test interaction effects statistically; rather, the synthesis shows that individual, relational, and structural determinants co-occur and are mutually reinforcing across the included studies. This interpretive reading extends the bio-psychosocial account of Zimlich and Reuter (2024) by adding two dimensions their single-context study could not capture: the role of pre-service professional socialisation in reproducing structural barriers, and the co-production of inclusion across teacher and student perspectives. (Mihajlovic, 2017; Maher & Fitzgerald, 2020). Practically, the findings carry clear implications for teacher preparation, curriculum, and policy. Initial teacher education should be redesigned around the authentic requirement situations of inclusive PE and coupled with supervised practicum experiences, given the evidence that such designs build durable, situation-specific competence (Erhorn, Langer, et al., 2025). Continuing professional development should be tailored, sustained, and quality-assured rather than delivered as isolated short courses (Makopoulou et al., 2021; Neville et al., 2020). Practitioners should individualise rather than standardise inclusive strategies, since uniform modifications can inadvertently marginalise (Holland et al., 2023), and schools should adopt co-teaching and whole-school approaches that distribute responsibility for inclusion (Sullivan et al., 2025).

Situated against prior reviews, which have largely been bibliometric or confined to single populations such as autism (Barros et al., 2023), the present synthesis offers a more integrative, stakeholder-spanning account. It corroborates earlier observations that teacher attitudes and self-efficacy are pivotal (Braksiek, 2022; Wang et al., 2020) while extending them by foregrounding the student-identified relational conditions that those attitudes must address. In this respect the review both confirms and complicates the prevailing emphasis on teacher preparation.

The literature also contains notable contradictions. Strategies promoted as inclusive were experienced by some students as exclusionary (Holland et al., 2023), and a framework widely championed for inclusion, Universal Design for Learning, was found to rest on a fragile empirical base (Haegele et al., 2024). These tensions likely reflect variation in how inclusion is conceptualised and in how faithfully strategies are implemented, underscoring that the effect of any practice is mediated by context and individualisation. Three research gaps are evident. First, the near-absence of longitudinal designs limits understanding of how facilitators operate and decay over time. Second, intervention evidence is geographically narrow and rarely extends beyond teacher-education settings into sustained classroom change. Third, the perspectives of students with the most significant or multiple disabilities, and of families, remain comparatively under-represented relative to teacher-focused work (Grenier et al., 2025; Nemček, 2024).

This review has at least three limitations. It drew on a single database (Scopus), which, although comprehensive, may have omitted relevant work indexed elsewhere. It was restricted to English-language journal articles published from 2021 onward, potentially excluding pertinent grey literature, non-English scholarship, and seminal earlier studies. Finally, the predominance of qualitative and self-report evidence in the corpus constrains the strength of causal claims that the synthesis can support. Future research should accordingly prioritise longitudinal and mixed-methods designs that trace implementation over time; multi-site intervention

studies that test transferable teacher-education and whole-school models across contexts; and participatory designs that systematically centre the voices of students with diverse and complex disabilities and their families. In summary, the evidence indicates that the principal barriers to inclusive physical education are inadequate teacher preparation, unsupportive relational climates, and rigid structural norms (RQ1), whereas the principal facilitators are authentic, practicum-based teacher education, individualised and reflective pedagogy, and supportive, collaborative school climates (RQ2).

## Conclusions

This systematic review synthesised 18 studies published between 2021 and 2025 to clarify what hinders and what enables inclusive physical education. In answer to the first research question, the main barriers are inadequate initial and continuing teacher preparation, relational and communicative obstacles in the gymnasium, and entrenched structural and body-performance norms. In answer to the second, implementation is facilitated by authentic, practicum-based teacher education, individualised and reflective pedagogy, supportive attitudes, and collaborative, whole-school climates. The review's core contribution is an integrated, stakeholder-sensitive account showing that physical inclusion does not guarantee social inclusion and that teachers mediate a co-produced process. Practically, it argues for redesigning teacher preparation around authentic inclusive situations and individualised practice. The findings are bounded by reliance on a single database and recent English-language sources. Future research should pursue longitudinal, multi-site, and participatory designs that centre student voice.

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