

Evaluation of the Moroccan Primary Physical Education Curriculum: Insights from University Trainers' and Primary Teachers' Perceptions

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ABSTRACT

This study investigates the gap between curriculum design and classroom implementation in Moroccan primary Physical Education (PE), particularly in a system relying on generalist teachers. Guided by Provus' Discrepancy Evaluation Model, it examines the alignment among the prescribed curriculum, teacher training, and teaching practices. A qualitative multi-method case study was conducted through documentary analysis, semi-structured interviews with teacher trainers (n = 4), and focus groups with primary school teachers (n = 10). Thematic analysis revealed substantial discrepancies across design and implementation stages. The curriculum presents conceptual ambiguities and lacks coherent assessment frameworks, while limited resources and insufficient teacher preparation constrain effective implementation. Consequently, classroom practices tend to emphasize competitive activities rather than holistic student development. Findings suggest that implementation challenges stem not only from teachers' practices but also from broader systemic inconsistencies. The study highlights the need for curriculum coherence, strengthened teacher training, and closer alignment between educational policy and practice.

1. Introduction

Physical Education (PE) is widely recognized as a key component of holistic education, contributing significantly to children's physical, cognitive, social, and emotional development (Bailey et al., 2009). Through structured physical activities, it not only supports the development of motor skills but also encourages values such as cooperation, resilience, and the adoption of healthy lifestyles. International organizations such as UNESCO (2021) have called on governments to invest in inclusive and well-balanced PE curricula, recognizing PE as a privileged setting for promoting active and healthy lifestyles among young people. In line with this, a scoping review mapping international recommendations confirmed that evidence-based strategies must be effectively embedded in curriculum design and teaching practice to ensure that PE classes genuinely contribute to students' long-term health behaviours (Bandeira et al.,

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2022). In addition, research has shown that PE can positively influence cognitive outcomes, including attention and academic performance (Trudeau & Shephard, 2008; Peiris et al., 2022), as well as socio-emotional aspects such as self-esteem and emotional regulation (Bailey, 2006). Recent systematic reviews have further confirmed that PE-based interventions produce measurable outcomes across psychomotor, cognitive, affective, and social learning domains (Dudley et al., 2022), reinforcing PE's role as a multidimensional educational tool essential to children's holistic development.

However, the benefits of PE largely depend on how effectively it is implemented in schools. In many education systems, there is a noticeable gap between what is intended in official curricula and what actually takes place in classrooms. This so-called "theory-practice gap" is particularly evident in primary education, where PE is often taught by generalist teachers. These teachers frequently report limited confidence and insufficient preparation to teach PE, which can negatively affect the quality of instruction (Morgan & Bourke, 2008; Spittle et al., 2022). Research consistently shows that generalist teachers tend to have lower levels of confidence to teach primary PE compared to specialists, a barrier which directly affects the quality of PE programs delivered in schools (Truelove et al., 2021). Previous studies have also pointed out that initial teacher training programs often do not provide enough practical and pedagogical grounding in PE, leaving teachers underprepared for classroom realities (Faucette & Patterson, 1989; Tsangaridou et al., 2024). A systematic review of pre-service PE teacher education confirmed that this remains a significantly under-researched area despite its centrality to PE quality (Chen et al., 2024). Furthermore, Kingston et al. (2023), in a scoping review of quality PE programmes in primary schools, identified teachers as one of the most critical factors determining programme effectiveness, alongside curriculum design and school leadership.

The Moroccan context illustrates this challenge in a particularly relevant way. Over the past two decades, the country has introduced major educational reforms, including the National Charter for Education and Training and the Strategic Vision 2015–2030, both of which emphasize improving educational quality and strengthening teacher training. Notably, research on Moroccan physical and sports education at the middle school level has highlighted a deficit in initial teacher training in the field of health education and a lack of in-service professional development, revealing a persistent gap between the intentions embedded in official curricula and the realities of classroom practice (Agorram et al., 2021). Despite these reform efforts, observations from the field continue to suggest a gap between the official PE curriculum, the training provided to teachers, and actual teaching practices in schools. This situation reflects a well-documented issue in curriculum studies: the difference between the prescribed curriculum and the enacted curriculum (Perrenoud, 1993). In practice, teachers often adapt or reinterpret official guidelines depending on contextual constraints, available resources, and their own understanding, which can lead to inconsistencies in implementation (Spillane et al., 2002). A bibliometric analysis of Scopus-indexed research on curriculum and PE further underscores the growing scholarly interest in understanding these dynamics, particularly the role of curriculum design in shaping PE practice internationally (Gazali et al., 2023).

Although the existence of such gaps is widely acknowledged, much of the existing research remains descriptive. In other words, studies tend to highlight that discrepancies exist, but they provide limited insight into where and why these gaps occur within the system. As a result, the underlying causes of implementation difficulties are not always clearly identified. This lack of diagnostic depth often leads to broad recommendations, such as improving teacher training or increasing resources, without precisely targeting the specific weaknesses within the system. In this context, curriculum evaluation can be understood as a systematic process aimed at assessing the effectiveness of educational programs through the analysis and comparison of

expected standards and actual performance (Gay, 2004; Provus, 1969). To address the limitations of purely descriptive approaches, the present study adopts the DEM developed by Provus (1969). This model provides a structured way to examine educational programs by comparing intended standards with observed practices across different stages, including design, implementation, and outcomes. It is grounded in an Input–Process–Output logic, where the quality of inputs (such as teacher preparation and resources) influences teaching processes, which in turn affect educational outcomes. The DEM is particularly useful for analyzing complex educational situations such as PE in primary schools. It allows for the identification of specific discrepancies at different stages of the system. For example, challenges related to generalist teachers can be interpreted as issues related to inputs and processes, while inconsistencies in curriculum design can be linked to the initial stage of program development. Similarly, differences between intended and actual learning outcomes, such as an emphasis on competition rather than holistic development, can be examined at the level of program results.

Based on this framework, the present study aims to provide a systematic evaluation of the Moroccan primary PE system, focusing on both the national curriculum and initial teacher training. More specifically, it seeks to identify discrepancies between intended standards and actual practices across three key stages: program design, program implementation, and program outcomes. By moving beyond a purely descriptive perspective, this research aims to offer a clearer understanding of the structural factors that contribute to the implementation gap in PE. Ultimately, it intends to generate targeted, evidence-based recommendations to improve curriculum coherence, teacher preparation, and the overall quality of PE in Moroccan primary education, while also proposing an analytical approach that may be relevant to other educational contexts.

2. Material and Methods

This study employed a qualitative, multi-method case study design to conduct a comprehensive discrepancy evaluation of the Moroccan primary PE system, bounded by the integrated pathway from initial teacher training to curricular implementation. The qualitative approach was essential for capturing the complex, nuanced perceptions and lived experiences of key actors, thereby uncovering the underlying reasons for observed disparities between policy and practice (Denzin & Lincoln, 2018). This design was strategically aligned with the core requirements of the DEM, whose fundamental principle of comparing performance against standards at specific program stages necessitates a research strategy capable of capturing triangulated data from multiple sources. The research framework was therefore meticulously structured to gather evidence corresponding to critical DEM stages: documentary analysis established the official standard for Program Design (Stage I) through examination of the prescribed curriculum and training module; semi-structured interviews with university trainers provided data on the Installation (Stage II) of the training module and its effectiveness in producing Intermediate Products (Stage III); while a focus group with practicing teachers yielded insights into the Installation (Stage II) of the curriculum in schools and its Terminal Products (Stage IV) on student outcomes. This integrated approach ensures the research moves beyond superficial problem description to a diagnostic analysis that precisely locates and characterizes discrepancies across the educational system's lifecycle, generating empirically grounded findings directly actionable for systemic improvement.

2.1. Context and Participants

This study was conducted within the distinctive context of Moroccan primary education, characterized by the delivery of PE through generalist classroom teachers rather than

specialized PE instructors. This approach follows comprehensive educational reforms that restructured teacher training under university-based faculties, creating a unique ecosystem for PE implementation. The research focused on the "program" encompassing the complete pathway from initial teacher preparation, specifically through the "PE and Psycho-socio-motor Development" module in the Primary Education Bachelor's degree, to the practical application of the national PE curriculum in diverse school environments.

To capture comprehensive insights across this educational continuum, a purposive, criterion-based sampling strategy was employed to select participants directly involved in different stages of the program's lifecycle. The participant cohort comprised two distinct groups: four university trainers responsible for delivering the targeted training module for at least one academic year, and ten practicing primary school teachers currently implementing PE curriculum in their generalist teaching roles. The teacher participants were strategically selected from varied socio-geographic contexts to ensure representation of both urban and rural implementation challenges, and were divided into two focus groups of five participants each to facilitate richer discussion and more nuanced data collection through comparative group dynamics. The participant overview is presented in Table 1.

Table 1. Participant Overview

Participant Group	Sampling Criteria	Number (n)	Key Characteristics	Data Collection Method
University Trainers	Responsible for delivering the training module for ≥ 1 year	4	PhDs in Sports Sciences; 3–10 years of teaching experience	Individual Interviews
Primary School Teachers	Generalist teachers currently teaching PE in public primary schools	10 (5 per group)	5–15 years of experience; urban and rural public schools in the Rabat-Salé-Kénitra and Casablanca-Settat regions	Two Focus Groups

This sampling approach and group configuration ensured sufficient information power while allowing for meaningful comparison between the two focus groups, enhancing the study's ability to identify both consistent and context-specific discrepancies across the educational system. All participants engaged through a rigorous informed consent process, with strict maintenance of ethical principles of anonymity and confidentiality, following appropriate institutional review board approvals.

2.2. Data Collection and Procedures

Data collection unfolded through a carefully sequenced triangulation of methods Denzin (1970), strategically aligned with the DEM framework to investigate the Moroccan PE system across its complete lifecycle. The process commenced with a documentary analysis of the official Prescribed PE curriculum for Moroccan Primary Schools and the "PE and Psycho-socio-motor Development" module syllabus, utilizing a researcher-developed analytical grid specifically designed to evaluate Program Design (DEM Stage I). This custom instrument facilitated a systematic examination across five critical domains, conceptual coherence, structural logic, objective formulation, content objective alignment, and assessment coherence, with each document undergoing independent analysis by two researchers to ensure rigorous identification of design standards and inherent discrepancies.

To investigate the program's installation and intermediate outcomes, semi-structured interviews were conducted with all four university trainers (Table 2), employing a protocol specifically designed to elicit detailed perspectives on implementation challenges and training effectiveness. These individual sessions, lasting 45-60 minutes each and conducted in Arabic with subsequent professional translation, directly targeted DEM Stages II and III through carefully structured themes that explored the translation of design into practice and the development of teacher competencies.

Table 2. Semi-Structured Interview Guide Themes Aligned with DEM

DEM Stage	Interview Theme	Example Question
II (Installation)	Pedagogical Experience & Contextual Challenges	"What challenges do you face in delivering the module's content, considering students' prerequisites and available resources?"
II (Installation)	Adequacy of Teaching Modalities & Content	"How, if at all, do you adapt the planned teaching methods and content to the target audience?"
III (Interim Product)	Evaluation of Learning Outcomes	"To what extent do the current assessment methods capture the practical competencies the module aims to develop?"

Complementing these individual perspectives, two focus groups with five primary school teachers each provided rich insights into curriculum implementation at the classroom level, strategically organized to foster dynamic discussion while maintaining manageable group dynamics (Table 3). Facilitated through a structured protocol, these 90-minute sessions captured collective experiences regarding DEM Stages II and IV, exploring implementation constraints and observed student outcomes across diverse educational contexts.

Table 3. Focus Group Guide Themes Aligned with DEM

DEM Stage	Focus Group Theme	Prompt
II (Installation)	Implementation Constraints & Resources	"Describe the resources, time, and infrastructure you have for PE and how they affect your teaching."
II (Installation)	Enacted Pedagogical Methods	"What teaching strategies do you actually use in your PE lessons, and what informs these choices?"
IV (Terminal Product)	Perceived Student Outcomes & Impact	"What specific changes in your students' skills, attitudes, and behaviors do you attribute to your PE lessons?"

Following data collection, the documentary materials, interview transcripts, and focus group discussions were analyzed using a deductive thematic analysis guided by Provus DEM. The analytical grid used for the documentary analysis was developed by the research team based on the theoretical standards underpinning the DEM and further informed by the National Pedagogical Standards for the Bachelor's Degree in Education, from which several criteria and indicators considered essential for evaluating curriculum quality, internal coherence, and pedagogical alignment were adapted and incorporated into the grid. The preliminary version of the instrument was refined through iterative discussions among the research team to ensure its relevance and alignment with the objectives of the study before being applied to the official curriculum and training module documents. Interview and focus group recordings were transcribed verbatim in Arabic and subsequently translated into English for reporting purposes. The transcripts were read repeatedly to achieve data familiarization before being coded according to the four stages of the DEM. Within each stage, recurring patterns, discrepancies,

and explanatory themes were identified and continuously compared across the documentary analysis, interviews, and focus groups to strengthen the consistency and depth of the interpretation through methodological triangulation. To enhance the trustworthiness of the findings, the documentary analysis was conducted independently by two researchers, while the coding and interpretation of the qualitative data were collaboratively reviewed and discussed until consensus was reached. Credibility was further reinforced through the convergence of evidence from multiple data sources, whereas the detailed description of the research context, participant characteristics, and data collection procedures supports the transferability of the findings to similar educational settings.

3. Results

The findings of this discrepancy evaluation are presented according to the stages of the Provus DEM, systematically identifying the gaps between the program's standards and its performance across design, installation, and products.

3.1. Discrepancies in Program Design (Stage I)

The analysis of the prescribed documents against standards of conceptual coherence, structural logic, and internal consistency revealed fundamental discrepancies in the program's design phase.

The standard for a coherent program design requires terminological precision and a logical architecture. However, the documentary analysis revealed significant conceptual ambiguity, notably an unjustified alternation between the terms "Physical Education" and "Physical Education and Sport" within the official curriculum. This was compounded by a blurred distinction between "pedagogical orientations" and "didactic programs," creating semantic imprecision from the outset. Structurally, the curriculum exhibited an illogical sequence where targeted skills were presented after the statement of objectives, weakening its vertical coherence. Furthermore, the training module's general objective was formulated as a descriptive paragraph lacking specific, measurable outcomes, falling short of SMART criteria and failing to provide a clear guide for instruction or assessment.

A critical design discrepancy was identified in the assessment framework (Table 4). The standard requires that evaluation methods are coherent and aligned with learning objectives. The prescribed primary PE curriculum, however, contained two distinct evaluation grids with contradictory criteria. For instance, "participation" was weighted at 4 points in one grid and 2 points in another, while the prioritization of technical performance versus engagement fluctuated without pedagogical justification. This structural ambiguity fundamentally compromised the potential for pedagogical equity and coherence from the design stage.

Table 4. Key Discrepancies in Program Design (DEM Stage I)

Design Standard	Documented Performance	Identified Discrepancy
<i>Conceptual Clarity</i>	Unjustified alternation between "PE" and "PES"; undefined key pedagogical concepts.	Semantic imprecision undermining a robust conceptual framework.
<i>Structural logic</i>	Illogical sequence of components (skills listed after objectives); repetition of content across levels without clear progression	Weak vertical coherence and organizational flaw in the curricular architecture.
<i>Objective formulation</i>	The training module's general objective is vague, descriptive, and lacks measurable action verbs.	Absence of a clear, achievable standard to guide teaching and assessment.

Design Standard	Documented Performance	Identified Discrepancy
<i>Assessment coherence</i>	Two distinct evaluation grids with contradictory weightings and fluctuating prioritization of criteria (e.g., participation vs. performance).	Structural ambiguity that institutionalizes subjective assessment and compromises equity.

3.2. Discrepancies in Program Installation (Stage II)

The installation of the program was evaluated against the standards set in its design, revealing significant discrepancies in both inputs and processes.

The design standard assumed the availability of adequate inputs, including trained teachers, sufficient time, and necessary infrastructure. The performance data revealed a consistent deficit in all areas. All four university trainers highlighted that student teachers entered the "PE and Psycho- socio-motor Development" module with a "lack of PE prerequisites," a fundamental input discrepancy. This was paralleled in schools, teachers from both focus groups consistently emphasized that the allocated instructional time was insufficient to implement the prescribed curriculum effectively. As one participant explained,

"A 60-minute lesson is insufficient to deliver PE effectively in primary schools. A considerable proportion of the session is devoted to organizing pupils, preparing the equipment, and managing the class, leaving very limited time for meaningful learning activities and effective practice."

This perception was shared across both focus groups, suggesting that the prescribed time allocation does not adequately support the achievement of the curriculum's intended learning outcomes and described a chronic "lack of didactic material and sports infrastructure." One trainer summarized the input challenge, stating,

"I taught this module for three years. My experience was marked by students' lack of interest, as many perceived PE as merely a leisure activity rather than an academic subject. Practical sessions were also constrained by the lack of appropriate teaching materials. While students with a sporting background participated actively, lower levels of motivation were observed among some female students."

The design standard also prescribed specific content and pedagogical processes. The performance data, however, indicated that these processes could not be installed as intended. Trainers reported having to adapt the module's content extensively. One explained,

"As a practitioner, I expanded the module content beyond the official course description to better reflect the realities of professional practice. We worked on authentic teaching situations, practical workshops, and collaborative learning activities, enabling students to develop a personalized 'educational games toolkit' that they could later use as a pedagogical resource in their future classrooms."

This indicated that the designed content was not appropriate for the target audience. In schools, teachers reported that the rigid lesson structure and competitive focus of the prescribed curriculum constrained their pedagogical creativity, forcing a simplified, sports-focused approach rather than the intended holistic model. The discrepancy between the designed process and the installed process was therefore systemic.

3.3. Discrepancies in Program Products (Stages III & IV)

The evaluation of the program's products revealed a failure to achieve its intended intermediate and terminal outcomes.

The standard for the intermediate product was that graduate teachers would be competent in fostering holistic child development through PE. However, the data from the focus groups revealed that teachers' understanding of PE objectives was predominantly skewed towards physical performance and competition. This perception was directly reinforced by the curriculum's design and the evaluation grids they were mandated to use. The training module failed to produce the intended intermediate outcome of a teacher who could confidently implement a balanced, developmentally-appropriate PE program, as one trainer noted the assessments were overly theoretical and ill-suited to capturing practical competencies.

The terminal standard for the program was the holistic development of students, encompassing motor, cognitive, and socio-affective dimensions. The performance data, however, pointed towards a different terminal product. The documented emphasis on competition within the curriculum, particularly for the youngest age groups, was enacted in practice. Teachers observed that this created a classroom dynamic of "early selection," which marginalised less skilled pupils. As one teacher noted, "You see the children who are naturally gifted get all the attention, while the others just participate without really developing." This outcome—where student experiences are characterized by exclusion rather than inclusive development—represents a fundamental discrepancy with the program's stated terminal objective of fostering holistically developed individual.

4. Discussion

4.1. The Discrepancy Cascade: A Systemic Diagnosis of PE Implementation Failure

This study employed Provus' DEM to diagnose the implementation failures within Morocco's primary PE system, moving beyond descriptive accounts of a "theory-practice gap" to a precise identification of systemic fractures. The central thesis, that the gap represents a series of discrete, diagnosable discrepancies across the program's lifecycle, is resoundingly confirmed. The findings reveal a cascade of failures: a fundamentally flawed program design (Stage I) leads to an impossible installation (Stage II), resulting in terminal products (Stage IV) that directly contradict the program's stated holistic aims. This systematic diagnosis demonstrates that the program's shortcomings extend beyond isolated implementation challenges, revealing structural discrepancies that accumulate across successive stages of the system. Rather than functioning independently, deficiencies identified at each stage appear to reinforce those observed at the subsequent stages, thereby compromising the overall coherence and effectiveness of the program.

The DEM Stage I analysis reveals that the prescribed standards themselves are incoherent. The terminological ambiguity, oscillating between "Physical Education" and "Physical Education and Sport", and the logically flawed structure create what Andriamampianina & Simoussa, (2005) identifies as a fundamental barrier to implementation: conceptual vagueness that invites contradictory interpretations by practitioners. This is compounded in the training module by a general objective that is descriptive rather than directive, lacking the specific, measurable outcomes essential for effective pedagogical engineering (Berthiaume & Daele, 2013). A curriculum that is ambiguous by design cannot be implemented with fidelity, creating the first and most critical fracture in the system.

4.2. The Installation Chasm: When Design Meets Reality

The chasm between the program's design and its installation reveals a stark disregard for contextual realities. The design standard assumes adequate inputs, trained teachers, time, and infrastructure, yet the performance data reveals a consistent deficit in all areas. Student teachers enter the module with a "lack of PE prerequisites," a critical input discrepancy that trainers must overcome. This is mirrored in schools where teachers report insufficient time and a chronic "lack of didactic material," forcing a survival-mode approach to PE. This finding resonates with international literature highlighting how resource constraints fundamentally shape the enacted curriculum, particularly for generalist teachers who lack the confidence to adapt practices creatively (Morgan & Bourke, 2008).

The process dimension reveals an even greater discrepancy. The design prescribes specific content and pedagogy, but the installation is characterized by widespread adaptation. Trainers report "enriching the module content beyond the academic description," while teachers default to a "simplified, sports-focused approach." This is not a failure of implementation but a rational response to a design that is misaligned with its context. The system operates on what might be termed a logic of pragmatic adaptation, where the prescribed process is abandoned in favor of what is feasible, directly undermining the policy intentions embedded in the design stage.

4.3. The Assessment Paradox: How Measurement Subverts Goals

The most theoretically significant finding of this study is the Assessment Paradox: the evaluation mechanisms designed to measure learning actively subvert the core objective of holistic development. The dual, contradictory assessment grids do not merely fail to capture socio-affective goals; they institutionally prioritize motor performance and competition. This creates a powerful performative driver that shapes teacher practice more forcefully than the curricular objectives themselves (Biggs, 1996).

This paradox provides a profound explanation for the terminal product discrepancy. The observed student outcome of "early selection" over inclusive development is not an accident but a direct consequence of an assessment regime that values competitive achievement. Teachers' focus on performance emerges as a rational adaptation to the metrics they are mandated to use. This finding compels a theoretical reorientation: in contexts of implementation ambiguity, assessment wields a more powerful influence on teacher behavior than curricular rhetoric. Therefore, assessment reform is not a technical afterthought but the central strategic lever for achieving transformational change in PE practice (Kalari et al., 2025). In practical terms, such reform should promote assessment approaches that are aligned with the holistic aims of the curriculum. For example, criterion-referenced rubrics could evaluate not only psychomotor performance but also cognitive outcomes (e.g., understanding of movement concepts, rules, and tactical decision-making) and affective competencies (e.g., cooperation, respect, fair play, engagement, and self-confidence). Such assessment tools would provide more inclusive evidence of student learning while ensuring constructive alignment between curriculum objectives, teaching practices, and evaluation criteria.

4.4. Reconceptualizing Reform: From Linear Prescription to Iterative Co-Design

The tripartite failure diagnosed by the DEM necessitates a fundamental reconceptualization of how curriculum reform is approached. The traditional linear model of policy design, isolated from implementation realities, is irrevocably broken. Instead, we propose an Iterative Co-Design Framework, where curriculum development is a dynamic process continuously

informed by feasibility checks from the installation stage and outcome data from the product stage.

This framework directly addresses the documented discrepancies. It would mandate that future curricula are developed with the explicit input of teachers and trainers, ensuring that objectives are realistic, language is clear, and assessment is coherent from the outset in order to ensure the preservation of the orientations mentioned in the prescribed curriculum when it was put in place as a real curriculum as mentioned in the studies (Tremoen et al., 2024; Tremoen & Lagedstad, 2024) talking about curricular reforms and their impact on teachers' practices. This model transforms the curriculum from a static document into a responsive tool, thereby breaking the cycle of failure identified by the DEM.

5. Limitations and Future Research Directions

Although this qualitative case study provides an in-depth understanding of the discrepancies affecting the Moroccan primary PE system, several limitations should be acknowledged. First, the study relied on a relatively small purposive sample of university trainers and primary school teachers from public schools in the Rabat-Salé-Kénitra and Casablanca-Settat regions. Consequently, the findings should be interpreted within this specific context and are not intended for statistical generalization. Future research could strengthen the transferability of these findings by including a larger and more geographically diverse sample of primary school teachers from additional regions of Morocco, thereby capturing a broader range of educational contexts. In addition, although methodological triangulation enhanced the credibility of the findings, the absence of direct classroom observations limited the opportunity to compare teachers' reported practices with their enacted instructional practices. Future studies integrating classroom observations alongside documentary analysis, interviews, and focus groups would provide a more comprehensive understanding of curriculum implementation and strengthen the interpretation of the discrepancies identified.

Despite these limitations, the DEM framework offers a transferable methodology for systemic educational diagnosis across diverse educational contexts. The limitations identified in this study therefore provide a strategic roadmap for future inquiry. The critical next step is to pilot the proposed Iterative Co-Design Framework in a controlled set of schools to evaluate its effectiveness in reducing the discrepancies identified across the design, installation, and product stages. Furthermore, comparative DEM analyses across other nations employing generalist primary school teachers to deliver PE (e.g., Finland and France) would be invaluable for determining whether the systemic discrepancies identified are uniquely Moroccan or reflect broader challenges associated with generalist-led PE systems, thereby contributing to the development of a cross-national theory of PE curriculum implementation.

6. Conclusion and Strategic Implications

In this qualitative study we evaluated, using DEM, the PE and Psycho-socio-motor development module of the initial teacher training program for future primary school teachers and assessed the Physical Education curriculum in Moroccan primary schools. The results obtained through document analysis, interviews, and focus groups reveal significant discrepancies between the module's content, the prescribed curriculum guidelines, and the actual Physical Education curriculum at the primary level. The document analysis of the module description reflects an inconsistent structure between the module title, the overall objective, the content, and the assessment of student learning. These findings are reinforced by the perceptions of the teacher trainers, who highlighted important areas for improvement in the module's content, from a more precise title and content better adapted to the target population

to assessment more contextualized to the nature of the module. For the primary school PE curriculum, the document analysis reveals conceptual inconsistencies, pedagogical and didactic contradictions, and obstacles hindering its implementation. The results of the focus group with teachers confirm these shortcomings, with participants reporting material and infrastructural difficulties that disrupt the implementation of the curriculum requirements, in addition to the lack of valid tools for assessing motor skills. The teachers emphasized the importance of a curriculum revision to balance the educational and sporting aspects of physical education and to include teaching guides adapted to all sociocultural contexts within the curriculum.

In general, the DEM provides a powerful diagnostic tool for moving beyond the description of educational problems to their precise systemic diagnosis. The identified discrepancy cascade reveals that the Moroccan primary PE system requires not incremental adjustment, but foundational reform. In this regard, a logical reform of the primary PE curriculum and teacher training in this area are recommended in Morocco. According to several studies (Casolo & Tosi, 2023; Cruickshank et al., 2024; Kalari et al., 2025), it is preferable to involve specialists in primary PE teaching due to the quality of their interventions, or to further strengthen teacher training with modules related to PE, psychomotor skills, and the facilitation of educational games. Regarding the primary PE curriculum, it should be revised in terms of its conceptualization, adopting a simple and appropriate sports and pedagogical vocabulary, and oriented towards the educational and cultural aspects by offering accessible sports activities without emphasizing competitive sports at the primary level. In addition, the state must be involved in developing the quality of infrastructure and sports equipment for primary schools and in better organizing PE teaching in terms of time allocation, the quality of lessons offered and the pedagogical and didactic methods prescribed in the curriculum in order to promote sports practice in primary school and meet society's requirements in terms of education and training.

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