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From regulative ideals to instructional realities: the recontextualisation of physical fitness knowledge in physical education

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ABSTRACT

Background: Physical fitness is not contested as a curricular concern in itself; what remains debated is how fitness knowledge is pedagogically framed in school physical education, particularly when it is reduced to fitness testing, performance metrics, or body-normative health narratives. Scholarship has examined fitness testing, students' affective experiences of fitness testing and assessment, and teacher education structures, yet the process through which fitness knowledge is reconstructed as beginning teachers move from university to school remains empirically underexplored.

Purpose: Guided by Bernstein's (2000) theory of the pedagogic device, this study examines how beginning physical education teachers in Italy reflect on the recontextualisation of fitness knowledge from university preparation to school practice. Three research questions investigate which elements of fitness pedagogy are taken up, which instructional capacities remain underdeveloped, and how school-based evaluative rules shape what beginning teachers can legitimately enact.

Methods: Semi-structured interviews were conducted with fifteen beginning teachers (aged 25–29; 1–3 years' experience) graduated from three Italian universities with different orientations toward fitness education. Data were analysed through theoretically driven reflexive thematic analysis, using Bernstein's concepts of regulative discourse, instructional discourse, and evaluative rules as sensitising frameworks.

Results: Three themes were constructed. First, participants took up a coherent regulative discourse grounding fitness in health literacy and student autonomy. Second, an underdeveloped instructional repertoire left them with limited pedagogical architectures for planning, assessment, and affective management. Third, school-based evaluative rules – including digital and commercial fitness culture, material constraints, and student heterogeneity – compounded this asymmetry, producing pedagogical precarity.

Conclusion: The findings reframe the enduring theory – practice gap between university preparation and school enactment as a

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structurally produced asymmetry within the recontextualisation process itself, in which regulative and instructional discourse follow different trajectories across institutional fields.

Impact statement: This study advances understanding of how fitness knowledge is structurally transformed – not merely transferred – between teacher education and school practice. It offers PETE programmes a framework for identifying the instructional competencies that fitness education demands, including competence-based assessment, affective safety, and adaptation to digital fitness cultures. By showing that beginning teachers can possess critical educational orientations while lacking access to situated pedagogical repertoires, the findings challenge deficit-based accounts of teacher readiness and redirect attention toward institutional conditions through which educational values are translated into coherent classroom practice.

Introduction

The question of what beginning physical education teachers retain from university preparation and how this knowledge is reshaped during the transition into school remains a central concern within the discipline (Backman et al. 2023). Fitness education provides a particularly revealing case, not because fitness lacks curricular value, but because its pedagogical treatment in school physical education is often entangled with fitness testing, performance measurement, biomedical conceptions of health, and body-normative cultural narratives (Alfrey and Landi 2023; Cale and Harris 2009). In this article, fitness education refers to the educational framing of physical fitness knowledge in PE, including exercise principles, self-monitoring, health literacy, educative uses of fitness testing, and learning experiences supporting meaningful and sustainable engagement with physical activity. For beginning teachers, understood here as teachers within their first three years of school practice, this domain demands technical knowledge, critical judgement, and context-sensitive instructional capacity. Whether early-career teachers enter schools equipped with such capacity remains empirically underexplored.

This absence is not merely an empirical gap but a theoretical one. Existing research has predominantly examined fitness-related pedagogy through students' affective experiences of fitness testing and assessment (Alfrey 2024; Safron and Landi 2022; Yang et al. 2025) or through analyses of teacher education structures and health-related exercise preparation (Alfrey, Cale, and Webb 2012; MacPhail et al. 2023). Less is known about the process through which fitness knowledge is reconstructed as it crosses institutional boundaries, from the university where it is pedagogically recontextualised to the school where it must be enacted under unanticipated conditions. Beginning teachers occupy a uniquely revealing position: they have recently inhabited both fields and can articulate the disjunctures between them. Without their perspective, debates about fitness education remain structurally incomplete.

This study draws on Bernstein's (2000) theory of the pedagogic device to examine how beginning physical education teachers in Italy make sense of fitness knowledge as it travels from university preparation into school practice. The analysis explores which elements of fitness pedagogy are taken up, which practical capacities remain

underdeveloped, and how school-based evaluative rules regulate what teachers can legitimately enact. The study contributes to international debates on PETE's capacity to address the pedagogical demands of fitness education, while offering a structural explanation for the tension between educational ideals and instructional realities. The Italian context provides a revealing site, although the analytical argument concerns a broader process of pedagogic recontextualisation rather than an exclusively Italian phenomenon.

Background

Fitness education as contested pedagogical terrain

The pedagogical treatment of physical fitness occupies a contested position within school physical education. Its curricular prominence, reinforced internationally through policy mandates, accountability frameworks, and biomedical health discourse, sits alongside disagreement about approaches that reduce fitness education to testing, normative comparison, or training for performance (Alfrey and Landi 2023; Cale and Harris 2009). Cale and Harris (2009) concluded that much fitness testing in physical education may represent a misdirected pedagogical effort when it consumes curricular time without demonstrably promoting physical activity, motivation, or the knowledge and skills required for sustained engagement in active lifestyles. Despite this, fitness testing persists internationally, sustained by the symbolic authority of scientific measurement and the operational convenience it offers teachers (Alfrey and Gard 2014). Alfrey and Gard (2019) demonstrated that fitness testing remains prevalent through interdependencies between scientific legitimisation, institutional convenience, and professional habit. Harte et al. (2024) confirmed this prevalence in England, while Cale (2021) positioned the field at a crossroads between measurement-driven and educationally oriented approaches. Thus, the issue is not whether students should learn about fitness, but what forms of knowledge, participation, assessment, and bodily meaning are made legitimate when fitness enters the PE curriculum.

This persistence is not ideologically neutral. Safron and Landi (2022) show that FitnessGram® operates as a powerful standardised assessment system through which young bodies are rendered measurable, comparable, and classifiable according to biomedical and risk-oriented categories. Read alongside broader critiques of healthism and neoliberal individual responsibility (Evans et al. 2008; Gard and Wright 2005), such fitness-testing practices can expose bodies that do not conform to normative gendered, racialised, sexualised, classed, and ableist assumptions to forms of comparison, deficit positioning, and pedagogical vulnerability. Policy research has further documented how physical education has been systematically oriented toward narrow public health metrics at the expense of holistic educational aims (Landi, Walton-Fisette, and Sutherland 2021).

The consequences of fitness-testing pedagogy for students are increasingly well-documented. Simonton, Mercier, and Garn (2019) demonstrated that fitness test performances explain only limited variance in students' attitudes and emotions toward physical education. Alfrey (2024) found that conventional whole-class fitness testing generates significant anxiety, particularly among students positioned unfavourably by normative performance expectations. Harte et al. (2025) reported that students experienced fitness testing as purposeless and disconnected from meaningful movement

learning, while Yang et al. (2025) documented how high-stakes fitness testing narrowed the curriculum toward training for performance rather than education for well-being. Conversely, when fitness testing and fitness education are reframed through student voice, choice, privacy, meaningful pedagogical purposes, and inclusive or norm-creative pedagogies, students may report greater agency, engagement, comfort, willingness to participate, and reduced feelings of judgement, while fitness tests can also become objects for critical reflection on fairness, body norms, and movement qualities (Alfrey 2024; Alfrey and Young 2025; Barrenetxea-García, Ortuondo Bárcena, and Méndez-Giménez 2026; Quennerstedt et al. 2025). The problem, therefore, is not fitness education as such but the form it takes – and the pedagogical capacity of teachers to construct it otherwise.

Teacher preparation, occupational socialisation, and the beginning teacher transition

If the educational form of fitness pedagogy depends on teachers' capacity to enact curriculum-informed and student-responsive practice, a critical question follows: how well does teacher education prepare them? In the English context, Alfrey, Cale, and Webb (2012) examined preparation for Health-Related Exercise, a curriculum area historically understood in relatively narrow ways and often operationalised through fitness testing or exercise-for-health content. They found that nearly three-quarters of 112 secondary PE teachers reported limited university preparation for teaching Health-Related Exercise, identifying sport-performance ideologies, narrow health understandings, misplaced confidence, and absent professional development as structural processes sustaining this inadequacy. Harris (2014) corroborated these findings with PETE students, while Santiago and Morrow (2021) documented weak preservice teacher knowledge in assessment and prescription domains. Röger-Offergeld and Töpfer (2025) further showed that health-related PETE modules improve pedagogical content knowledge only when explicitly bridging scientific foundations and school-based application.

These findings connect to research on preservice teachers' occupational socialisation. Rather than positioning beginning teachers as individually deficient, this literature suggests that pedagogical intentions are filtered through biographies, programme cultures, and institutional histories. Curtner-Smith (2016) demonstrates that prospective teachers' pre-existing sport and fitness biographies powerfully filter their reception of alternative pedagogical models. Parkes and Hemphill (2025) further complicate deterministic accounts of preservice teacher socialisation by showing that hardcore fitness and coaching orientations do not simply predict resistance or failure, but mediate how student-centred pedagogical models are appropriated. In their study, implementation of TGfU ranged from high-quality full- versions to watered-down and cafeteria versions, depending on sport-specific expertise, coaching biographies, and pedagogical conditions.

Despite this accumulation of evidence, relatively little is known about how the transition from university to school reshapes fitness knowledge during the early career phase. While research on beginning teachers has documented the influence of contextual factors in reshaping pedagogical intentions (Backman et al. 2023; Tolgfors et al. 2022; Tolgfors et al. 2025), with Westerlund and Eliasson (2022) documenting how 'reality shock' accelerates the erosion of university acquired pedagogical orientations, fitness

teaching has received limited empirical attention from the perspective of beginning teachers. This gap is particularly significant in the Italian context, where the Master's degree (LM-67/68) constitutes the principal pedagogic recontextualising field for fitness knowledge, and where the 60 CFU qualification pathway for initial teacher education (equivalent to 60 ECTS credits; PCM 2023) has intensified policy attention to university-school alignment. The Italian university sector presents distinctive conditions: scientific production remains overwhelmingly biomedical rather than pedagogical (D'Isanto et al. 2024), a structural division that forces prospective teachers into complex epistemological negotiations between scientific and educational domains (Cereda 2025a). Furthermore, Italian research on fitness pedagogy remains sparse (D'Elia 2020).

Three research questions guide the investigation:

1. Which aspects of fitness knowledge and pedagogy do beginning teachers identify as prominent within the pedagogic discourse encountered during university preparation?
2. Which of these aspects do beginning teachers consider useful and relevant within school physical education practice?
3. How is beginning teachers' pedagogic practice of fitness teaching regulated by evaluative rules and contextual factors operating within school reproduction fields?

Theoretical framework: the pedagogic device

This investigation employs Bernstein's (2000) theory of the pedagogic device as its central analytic framework. The pedagogic device provides a principled vocabulary for tracing how knowledge is systematically transformed, and not merely transferred, as it moves across institutional fields (Tinning 2010). It has proven particularly generative in research on health and physical education (Ekberg 2021; Penney et al. 2009), including PETE-to-school transitions where Tolgfors et al. (2021) used Bernstein's recontextualisation to trace how assessment knowledge is transformed across institutional fields, the closest methodological precedent for this investigation. The selection and legitimation of knowledge are entangled with social values, professional ideologies, and institutional power (Penney and Alfrey 2022), within a sociological tradition that illuminates how institutional structures regulate legitimate knowledge and practice.

Bernstein posits that knowledge undergoes transformation across three fields: the field of production, where disciplinary knowledge is generated; the field of recontextualisation, where knowledge is selectively repositioned for educational purposes; and the field of reproduction, where knowledge is enacted in schools. Within the recontextualising field, Bernstein distinguishes between the official recontextualising field (ORF) – state curricula and policy – and the pedagogic recontextualising field (PRF) – university programmes, teacher educators, and professional bodies. In the Italian context, where national guidelines (MIM 2026) offer broad orientations rather than prescriptive content, the university PRF exercises substantial authority in defining legitimate fitness knowledge.

Two interlocking systems of rules govern pedagogic discourse. Regulative discourse concerns the values and purposes of teaching (the why). Instructional discourse concerns the specific content, skills, and methods through which those aims are realised (the how).

Critically, instructional discourse is always embedded within regulative discourse: when this embedding is ruptured, pedagogical practice loses coherence and values risk collapsing into rhetoric. In the field of reproduction, evaluative rules define what counts as legitimate practice under specific contextual conditions, shaped by material resources, student diversity, institutional culture, and cultural narratives circulating beyond the school. [Table 1](#) operationalises each construct for this investigation. The Bernsteinian distinctions served as sensitising concepts (Blumer 1954) from the outset, orienting the interview design, guiding the coding process, and structuring the interpretive work.

Methods

Research design

This investigation adopted a qualitative, interpretive design grounded in semi-structured interviewing. The central concern was not to observe the frequency of particular teaching actions, but to examine how beginning teachers cognitively mediated and reconstructed fitness knowledge across institutional fields. This required access to participants' reflective accounts of professional reasoning (Brinkmann and Kvale 2018). Classroom observation was not included because the focus was on retrospective reconstruction of knowledge trajectories; focus groups were not employed because the study sought individual accounts of personally situated professional knowledge. Consistent with methodological work on PETE-to-school transitions, interview data were treated not as transparent reports of practice but as discursive constructions through which beginning teachers articulate their professional knowledge (Backman et al. 2023).

Participants and context

Purposeful sampling (Patton 2015) recruited participants meeting four criteria: completion of the Master's degree (LM-67 or LM-68); one to three years' teaching experience in Italian secondary schools; documented experience of teaching fitness-related content; and participation in university courses addressing fitness pedagogy or training

Table 1. Operationalisation of Bernstein's (2000) pedagogic device in this study.

Theoretical construct	Operationalisation in this study
Field of production	Exercise science, health education research, and PE pedagogy literature constituting the disciplinary base of fitness knowledge.
Official recontextualising field (ORF)	Italian national curriculum guidelines (<i>Indicazioni nazionali</i>) and official ministerial degree-class regulations defining LM-67/LM-68 structures
Pedagogic recontextualising field (PRF)	University programmes, courses, teacher educators, and programme cultures through which LM-67/LM-68 fitness knowledge is pedagogically recontextualised.
Field of reproduction	Italian secondary school physical education classrooms where beginning teachers enact fitness pedagogy.
Regulative discourse	Participants' expressed values, educational purposes, and orientations toward fitness teaching (the <i>why</i>).
Instructional discourse	Participants' specific pedagogical methods, planning structures, assessment practices, and strategies for managing students' affective responses in fitness education (the <i>how</i>).
Evaluative rules	Contextual factors – student heterogeneity, material and temporal constraints, and digital/commercial fitness culture – regulating what becomes feasible, legitimate, and recognisable as fitness pedagogy in school practice.

methodology. The sampling strategy sought diversity across gender, geographical location, university provenance, sporting biography, and school context. Sample size was guided by the concept of information power (Malterud, Siersma, and Guassora 2016): the study's narrow aim, theoretically informed design, strong participant-phenomenon specificity, and structured analytic framework supported the sufficiency of fifteen participants.

The final sample comprised fifteen beginning teachers: eight female, seven male, aged 25–29 years ($M = 26.5$, $SD = 1.2$), graduated from three universities representing different orientations toward fitness education: University A ($n = 6$, Northern Italy) emphasised health literacy and student-centred approaches; University B ($n = 5$, Central Italy) foregrounded training methodology and exercise prescription; University C ($n = 4$, Southern Italy) centred preventive and adaptive physical activity within a critical health literacy framework. Teaching experience ranged from one to three years ($M = 1.9$, $SD = 0.6$). Pseudonyms are employed throughout. Ethical approval was granted by University Territorial Ethics Committee (reference: UTEC 2023–016) prior to data collection; all participants provided written informed consent. Table 2 presents participant demographics.

Data collection

An interview guide structured conversations across five domains: sporting biography and personal relationship with fitness; recalled university preparation; current teaching practice; the perceived relationship between preparation and practice; and contextual factors shaping pedagogical decisions. The guide was piloted with two physical education practitioners not included in the study; revisions clarified two prompts concerning assessment practices and sharpened the probe sequence for contextual constraints. Interviews were conducted via video conferencing between September 2024 and March 2025, lasting 55–85 min ($M = 68$ min). All interviews were audio-recorded and transcribed verbatim. All interviews were conducted in Italian. Quotations presented in this article were translated into English by the author, with attention to preserving participants' discursive register.

Table 2. Participant demographics and characteristics.

Pseudonym	Gender	Age	University	Programme	Years teaching	School level	Sporting biography
Alessandro	M	27	B	LM-68	2	Upper secondary	Minimal participation
Andrea	M	28	A	LM-67	2	Lower secondary	Athletics
Chiara	F	26	A	LM-67	2	Lower secondary	Volleyball
Claudia	F	26	B	LM-68	2	Upper secondary	Football
Elena	F	27	C	LM-67	2	Upper secondary	Swimming
Federica	F	26	C	LM-67	2	Lower secondary	Athletics
Giulia	F	25	C	LM-67	1	Lower secondary	Dance
Lorenzo	M	28	B	LM-68	2	Upper secondary	Martial arts
Marco	M	27	B	LM-68	3	Upper secondary	Football
Martina	F	25	A	LM-67	1	Lower secondary	Swimming
Paolo	M	29	B	LM-68	3	Upper secondary	Football
Riccardo	M	26	A	LM-67	2	Upper secondary	Fitness/bodybuilding
Simone	M	25	A	LM-67	1	Upper secondary	Football
Stefania	F	27	A	LM-67	2	Lower secondary	Volleyball
Valeria	F	26	C	LM-67	2	Lower secondary	Volleyball

Note. F = female; M = male; LM-67 = Master's degree in Preventive and Adapted Physical Activity (Italian classification: *Laurea magistrale in scienze e tecniche delle attività motorie preventive e adattate*); LM-68 = Master's degree in Sport Sciences (Italian classification: *laurea magistrale in scienze e tecniche dello sport*).

Data analysis

The analytic approach combined reflexive thematic analysis (Braun and Clarke 2021) with the theoretical directedness demanded by a Bernsteinian framework, characterised here as theoretically driven reflexive thematic analysis. This combination is epistemologically warranted because reflexive thematic analysis is theoretically flexible by design (Braun and Clarke 2021), accommodating deductive orientation through sensitising concepts without requiring the procedural rigidity of template analysis or codebook approaches. The Bernsteinian categories of regulative discourse, instructional discourse, and evaluative rules oriented attention toward theoretically significant patterns without foreclosing the emergence of unexpected material.

The analytic process unfolded through four phases, documented in a reflexive journal and summarised in an audit trail available upon request. In the first phase, extended familiarisation involved reading all fifteen transcripts repeatedly and annotating initial impressions. In the second phase, systematic coding using NVivo 12 produced approximately 180 data-proximate codes capturing participants' language (e.g. 'fitness is not sport performance'; 'I know what I want but not how to do it'; 'students already know about fitness from Instagram'). In the third phase, codes were examined through the Bernsteinian lens: codes concerning purposes and values were grouped under regulative discourse; codes concerning methodological difficulties under instructional discourse; codes addressing school-based conditions under evaluative rules. Tensions between codes were treated as analytically generative. From these groupings, three candidate themes were developed and shared with two colleagues experienced in Bernsteinian analysis for peer debriefing. Feedback led to the sharpening of Theme 2 from 'preparation gaps' into a theme foregrounding structural conditions producing instructional underdevelopment. The finalised themes are analytical constructions, not summaries of participant responses.

Researcher positionality and rigour

The researcher occupies a dual position as a former secondary physical education teacher and current PETE lecturer, an insider perspective that facilitated interpretive depth but carried risks of confirmatory reading. In line with reflexive qualitative inquiry, positionality was treated not as a bias to eliminate but as a resource and risk to be made visible (Berger 2015; Finlay 2002). Participants were therefore drawn from institutions other than those where the researcher teaches, and a reflexive journal documented moments where data challenged initial interpretations. Dialogic engagement with four participants during late-stage analysis explored the resonance of the constructed themes. One participant questioned whether the 'instructional void' framing underestimated the practical knowledge she had developed through school-based experimentation, prompting further attention to participant agency and variation across university contexts.

An additional reflexive tension warrants disclosure. As a PETE lecturer investigating the limitations of PETE, the researcher occupied a position in which findings concerning limited preparation could inadvertently serve institutional self-critique rather than dispassionate analysis. The reflexive journal documented three instances where initial coding emphasised preparation limitations while underrepresenting participants'

accounts of independent professional learning. Returning to these passages with deliberate attention to counter-evidence led to the nuanced treatment of university variation and participant agency that the final analysis reflects. The peer debriefing process served a similar corrective function.

Results

Three themes structure the findings, each named interpretively to reflect the analytical claim it advances. Together, they offer an account of fitness knowledge recontextualisation as a structurally fragmented process in which different components of pedagogic discourse follow different trajectories across institutional fields.

Theme 1: values before methods – the take-up of regulative discourse and its structural limits

Across the interviews, participants repeatedly articulated a coherent educational philosophy for fitness teaching, distinguishing fitness as performance optimisation from fitness as a resource for lifelong well-being and autonomous bodily knowledge. Most participants attributed this orientation primarily to university preparation, while also acknowledging that school experience refined how they expressed it. Notably, this orientation recurred across graduates of all three universities, despite their different curricular emphases, indicating that the take-up of regulative discourse was not confined to programmes explicitly centred on health literacy. This philosophy functioned as an evaluative framework through which they assessed student needs, resisted institutional pressures, and justified pedagogical choices. What this theme reveals is therefore both a meaningful take-up of regulative discourse and its limits: the university PRF had foregrounded the why of fitness education more strongly than the how. Chiara (University A, 2 years' experience) recalled:

At university, they insisted heavily on this point, that fitness in school is not like training in a gym or preparing athletes. The purpose is educational ... Developing students' understanding of their bodies, how physical activity affects health, giving them tools to maintain fitness throughout life. Not about getting them to lift more weight or run faster times, but about making them autonomous and competent.

A similar distinction was made by Riccardo (University A, 2 years' experience):

Even when students ask me for a “real workout”, I try to bring it back to learning. I ask them what they understood about intensity, recovery, or choosing an activity they could repeat outside school. For me, that came from university: fitness should give them criteria, not just fatigue.

Read alongside similar accounts across the sample, Chiara's statement can be interpreted as evidence of a recontextualised discourse rather than as an isolated personal preference. The distinction between gym-training logic and educational logic suggests the repositioning the Italian university PRF had sought to achieve: detaching fitness knowledge from purely performance-oriented associations and re-embedding it within a regulative discourse of health literacy, developmental appropriateness, and student autonomy. This discourse functioned as a professional identity anchor for several participants,

representing a meaningful departure from the sport-performance ideologies that dominate PE teachers' professional philosophies internationally (Alfrey and Gard 2014; Alfrey, Cale, and Webb 2012). Yet the interpretive significance also lies in what Chiara's account leaves unresolved. She speaks confidently about purpose but provides little pedagogical architecture for making students 'autonomous and competent.' This tension was crystallised by Giulia (University C, 1 year's experience):

University prepared me well to think about fitness from an educational perspective ... But then, what does fitness education actually look like? How do I structure lessons so they develop real competence and not just do exercises?

Giulia's question was interpreted as more than rhetorical uncertainty. The construction 'prepared me well to think ... but then' maps onto the Bernsteinian distinction between regulative and instructional discourse: the former is available to her, while the latter must be constructed in the field of reproduction. In Bernstein's (2000) terms, her regulative discourse is present but only weakly embedded in the instructional means through which educational values are given pedagogical form. Variation existed in degree. Teachers from University B, whose programmes foregrounded training methodology, reported somewhat greater confidence in designing fitness progressions, yet this confidence did not always translate into school-based didactic design. Marco (University B, 3 years' experience) explained this distinction:

Coming from LM-68, I can write a progression for strength or endurance. The difficult thing is turning it into a unit where students learn to make decisions, because a training plan is not automatically a teaching plan.

Theme 2: the instructional void – underdeveloped practical pedagogy and pedagogical precarity

If Theme 1 shows what participants took up, Theme 2 shows which instructional capacities remained weakly specified in their accounts. Across the interviews, participants described limited preparation in the instructional discourse required to operationalise their regulative commitments. These reported areas of limited preparation clustered around three pedagogical competencies that fitness education distinctively demands: longitudinal planning for competence development; assessment beyond performance metrics; and management of students' affective responses. This does not position beginning teachers as individually deficient; rather, it identifies structural sites where the PRF appeared to have provided insufficient pedagogical specification.

Planning was one of the most consistently reported areas of limited preparation. Elena (University C, 2 years' experience) articulated its character:

I feel confident explaining the principles of training — overload, progression, specificity. I can lecture about them. What I struggle with is translating those principles into a learning sequence that actually develops students' competence over time. How do I design lessons that build on each other? University gave me the theory but not the architecture.

Stefania (University A, 2 years' experience) expressed a similar distinction between activity planning and learning design:

Planning a circuit is easy; planning learning is different. I used to write six stations and think the lesson was ready, but then I realised students were moving without understanding why we changed intensity or recovery.

Elena's formulation 'the theory but not the architecture', read together with these accounts, captures the structure of the instructional void. She possesses declarative knowledge generated in the field of production; what remains weakly specified is the pedagogical-didactic knowledge the PRF needed to recontextualise alongside it: task design, sequencing logic, and progressive learning scaffolding. This gap echoes the biomedical orientation of Italian Exercise and Sport Sciences programmes, and the epistemological boundary work it demands of prospective teachers, noted earlier (Cereda 2025a; D'Isanto et al. 2024). Elena's struggle exemplifies this 'boundary negotiation', producing teachers who understand bodies scientifically but must still learn how to design educationally coherent experiences for diverse classrooms.

A second area concerned assessment beyond performance metrics. Andrea (University A, 2 years' experience) named the contradiction:

We learned about assessment generally ... But we didn't specifically work on how to assess fitness learning beyond performance. How do you assess someone's health literacy? Their autonomous capability? These are not straightforward.

Claudia (University B, 2 years' experience) described how this uncertainty made performance metrics difficult to avoid:

The easiest mark is numbers: shuttle-run stages, plank seconds, repetitions. But if I use only numbers, I reward those who already train. I need to assess whether students can explain, adapt, and monitor, but I did not have ready tools for that.

Andrea's statement suggests the internal incoherence that can arise when regulative commitments are not accompanied by assessment-specific instructional discourse. The regulative discourse invited assessment centred on health literacy and autonomous capability; the instructional discourse needed to enact that mandate remained weakly specified. Cale and Harris (2009) suggest that, without clear educational guidance and appropriate pedagogical resources, fitness testing can become dominated by the administration and scoring of performance measures rather than by learning-oriented uses of assessment. Andrea illustrates how that default may reassert itself not through ideological capitulation but through practical uncertainty, reproducing the evaluative logic his regulative discourse seeks to subvert.

A third area concerned the management of students' affective responses. Martina (University A, 1 year's experience) recalled:

University prepared me to think about physical inclusion, adapting exercises for different capabilities. What I wasn't prepared for was the emotional vulnerability many students experience around fitness. I have students who panic before fitness lessons, refuse to participate, cry in changing rooms. I don't feel equipped to handle this sensitively.

Valeria (University C, 2 years' experience) described the same issue as a matter of classroom climate:

Sometimes the problem is not the exercise but being watched doing it. In one class, two pupils asked to stay out because they felt everyone would judge their body. I knew inclusion in terms of adapting loads, but not how to build a safe climate for this kind of vulnerability.

Martina distinguishes between physical inclusion, for which she felt relatively prepared, and affective vulnerability, for which she did not. This can be read as a structural tension: within PETE, the body is frequently addressed as a biomechanical object but less consistently as an affective, socially situated, embodied site (Evans et al. 2008). Yet for students whose bodies do not conform to normative fitness assumptions (Safron and Landi 2022), the gymnasium can be precisely such a site. The panic, refusal, and shame described by participants are consistent with documented affective consequences of comparison-based and body-normative fitness pedagogies (Alfrey 2024; Harte et al. 2025), including in the Italian school context (Cereda 2025b). Encountering these situations with limited access to a body-affirming instructional repertoire represents a structural limitation in preparation rather than an individual lack of care.

Together, these three areas constitute interlocking components of a single structural condition: a PRF that had recontextualised the what-for of fitness education while leaving its how-to only partially mapped. These reported areas of limited preparation recurred across graduates of all three universities, with one gradient consistent with Theme 1: participants from University B expressed greater confidence in exercise prescription, while reporting comparable uncertainty in competence-based assessment and affective management. Importantly, participants were not passive recipients of this condition. Several described developing provisional strategies through school-based experimentation, although these strategies were experienced as locally improvised rather than systematically prepared.

For example, Alessandro (University B, 2 years' experience) described a small assessment strategy developed after his first teaching unit:

After the first unit I stopped using only times and repetitions. I added short reflection cards where students wrote what they changed and why. It is still imperfect, but it helps me see learning, not only performance.

Theme 3: evaluative rules as structural governors – commercial fitness culture, material constraints, and the limits of the thinkable

The third analytical dimension concerns conditions governing what beginning teachers can enact within the field of reproduction. Bernstein (2000) terms these evaluative rules: contextual standards defining legitimate practice within reproduction sites. Participants experienced these rules not as minor inconveniences but as structural governors delimiting what was thinkable as fitness pedagogy, especially when their instructional repertoire was still developing.

The most ideologically significant evaluative rule concerned digital and commercial fitness culture. Paolo (University B, 3 years' experience) described:

Students want fitness lessons that feel like what they see on Instagram or YouTube: high-intensity, dramatic music, trendy exercises, focused on achieving certain body aesthetics. When I try teaching about sustainable physical activity ... they perceive it as boring or not 'real' fitness.

Claudia (University B, 2 years' experience) similarly linked students' expectations to TikTok-based exercise content:

They arrive with TikTok exercises already in their heads: "Prof, can we do this challenge?" They judge the lesson by whether it looks intense or entertaining. If I slow down to discuss technique, safety, or why the exercise matters, some say it is not fitness.

Paolo's account suggests how commercial fitness culture, though external to the school, can operate as a *de facto* evaluative rule. Digital narratives had pre-inscribed in students a framework for what fitness is organised around aesthetics, intensity, visibility, and entertainment, against which educational alternatives were measured. While not formal institutional rules, these expectations functioned as powerful informal evaluative rules due to weak classification between the school and students' everyday lives. Federica (University C, 2 years' experience) documented the gendered form of this contestation:

The fitness culture students consume is intensely gendered and appearance-focused. Boys want to build muscle mass; girls want to lose weight and achieve certain body shapes. When I try to redirect toward health, functional capability, or enjoyment rather than appearance, many students disengage.

Stefania (University A, 2 years' experience) added that digital fitness culture was also mediated through self-tracking devices:

Some students compare watches, steps, calories, heart-rate zones. The numbers give them a sense of control, but they also turn the lesson into a competition about who burned more.

Federica's observation resonates with scholarship showing how fitness assessment and performance comparison can reproduce normative and gendered expectations about bodies (Safron and Landi 2022; Simonton, Mercier, and Garn 2019). What this theme adds is a sociological dimension: students' digital fitness narratives function within the reproduction field as *de facto* evaluative criteria against which teachers' alternatives are judged. In participants' accounts, this rule was also *datafied*, as wearable devices, calorie counts, and online challenges defined 'real' fitness.

Material and temporal constraints compounded this regulatory environment. Simone (University A, 1 year's experience) articulated the disjuncture:

At university we had access to fully equipped laboratories ... Heart rate monitors, spaces for circuit design, everything. At school I have a gymnasium shared with three other classes, no equipment, and two hours per week. The pedagogies I saw modelled at university are simply not reproducible.

Student heterogeneity constituted a further evaluative rule. Alessandro (University B, 2 years' experience) explained:

Within the same class I have a student who trains five times a week, another with asthma who is afraid of effort, and students who do almost no activity. A standard fitness unit does not work, but I was not prepared to differentiate goals, tasks, and assessments at that level.

Simone's account exposes how the disjuncture between well-resourced university settings and under-resourced schools means that instructional setups observed during preparation cannot always be reproduced. These material conditions operate as evaluative

rules in Bernstein's most concrete sense: defining which pedagogies are feasible and which remain aspirational. Together, the evaluative rules identified here interact with the instructional void identified in Theme 2. Unlike the patterns described in Themes 1 and 2, these rules were reported irrespective of university provenance: originating in the field of reproduction rather than in the PRF, they confronted all participants on broadly similar terms. Material constraints narrow possibilities; digital and commercial fitness narratives pre-establish criteria that teachers' alternatives must contest; and student heterogeneity demands a differentiated repertoire the PRF had only partially cultivated. In the relative absence of robust instructional discourse, these rules converge to produce pedagogical precarity.

Discussion

The findings reveal not a familiar theory–practice gap but a structurally produced schism within the recontextualisation process itself, in which different components of pedagogic discourse follow asymmetrical trajectories across institutional fields.

The regulative take-up and its implications

That beginning teachers took up a coherent educational orientation toward fitness represents a meaningful departure from earlier scholarship. Alfrey, Cale, and Webb (2012) found English PE teachers' professional philosophies dominated by sport and fitness ideologies; Alfrey and Gard (2014) showed that such marginalisation was structurally reproduced through PE culture. Against this baseline, the Italian beginning teachers entered schools actively contesting performance-oriented fitness, consistent with evidence that teachers' health orientations are shaped by formative discursive environments (Amundsen, Bjørke, and Mordal Moen 2025; Backman et al. 2023; Gray et al. 2024). This outcome reflects a deliberate recontextualisation strategy within Italian university PRFs, paralleling Mustell, Geidne, and Barker's (2024a) Swedish findings. The orientation resonates with Quennerstedt's (2019) concept of 'healthy', though the present findings suggest that it was taken up without equally developed instructional means.

The theoretical significance lies in what this take-up implies. The question Cale and Harris (2009) posed on whether fitness testing is a misdirected pedagogical effort has been partially answered at the level of teacher orientation. The problem has shifted: the question is no longer only whether PE teachers possess critical awareness, but whether they have access to constructive pedagogical repertoires through which to enact something better. Recent evidence from fitness units reinforces this point: when physical fitness tasks are embedded within coherent pedagogical frameworks, particularly Meaningful PE, students may experience more self-determined motivational profiles and reduced negative affect compared with less fully integrated approaches (Barrenetxea-García, Ortuondo Bárcena, and Méndez-Giménez 2026). This study therefore suggests that limited access to constructive pedagogical repertoires, rather than ideological conservatism alone, is a primary obstacle.

Alfrey and Gard's (2014) work illuminates this shift. They documented teachers who harboured misgivings about fitness testing yet remained unable to enact alternatives. Through Bernstein's framework, the present study offers a structural explanation: the

‘cracks’ Alfrey and Gard identified can be read as regulative discourse partially penetrating professional identities without corresponding instructional discourse, the pedagogical architecture through which critical awareness becomes coherent practice. The gap between contesting and constructing is a structural feature of knowledge recontextualisation, not a motivational deficit. As Mustell (2026) terms it, this constitutes a ‘realisation gap’ in which abstract values appear relatively transferable whilst practical knowledge demands explicitly situated attention the PRF had not provided. Without corresponding instructional discourse, regulative commitments risk collapsing into the performance-oriented defaults scholarship has sought to displace (Kirk 2010).

Underdeveloped instructional discourse and its consequences

The three instructional areas identified in the findings (planning, assessment, and affective management) are interlocking expressions of a single structural condition. While occupational socialisation literature establishes that beginning teachers struggle with complex pedagogy during their survival phase (Lortie 2002), the specific nature of these areas cannot be fully attributed to normative inexperience: participants possessed sophisticated frameworks for inclusion but reported limited access to baseline pedagogical architectures for enacting them. This resonates with concerns about PETE’s tendency to model pedagogies under idealised conditions (MacPhail et al. 2023) and with Truelove et al.’s (2021) finding that even specialist PE teachers across national contexts report lacking strategies for adapting fitness content to school constraints.

The consequences for students are concrete. As noted, fitness test performances explain limited variance in students’ PE attitudes (Simonton, Mercier, and Garn 2019), a limitation those authors attributed to decontextualised implementation. An underdeveloped instructional repertoire can produce precisely this condition: teachers committed to meaningful fitness education but lacking methodological tools to integrate assessment within a coherent curriculum may reproduce the implementation through which fitness testing fails educationally, with compounding consequences for marginalised and non-normative bodies (Safron and Landi 2022). The assessment gap reflects a broader under-theorisation of fitness assessment internationally (Hay and Penney 2013; López-Pastor et al. 2013), while the affective gap resonates with Harte et al.’s (2025) argument that fitness testing without educative purpose risks becoming mis-educative. Good intentions, as Gerdin et al. (2025) argue, are insufficient for socially just physical education.

An important cross-cutting pattern was that beginning teachers did not abandon university-acquired knowledge when confronted with underdeveloped instructional discourse. Instead, they constructed provisional, hybrid strategies through school-based experimentation – practices that, while locally improvised, resonate with elements of established models such as Health-Based Physical Education (Haerens et al. 2011). From a Bernsteinian perspective, hybridisation is an inevitable outcome of recontextualisation (Mustell, Geidne, and Barker 2024b). Yet its quality is not ideologically neutral. Parkes and Hemphill (2025) show that preservice teachers’ fitness and coaching orientations mediated the appropriation of TGfU in markedly different ways, producing full-, watered-down, and cafeteria versions rather than a uniform implementation

trajectory. This variability underscores that hybridisation can support principled pedagogical adaptation, but can also drift toward convenient, familiar, and less student-centred forms of practice. The reflexivity required to distinguish principled adaptation from the reproduction of default instructional logics is itself instructional knowledge the PRF must explicitly cultivate.

Evaluative rules and the governance of the thinkable

The third theme extends the analysis beyond teacher preparation into the contextual conditions governing what beginning teachers can legitimately enact. The evaluative rules identified, namely digital and commercial fitness culture, material constraints, and student heterogeneity, operate as an interconnected regulatory system that compounds the instructional void. From a Bernsteinian perspective, the most significant finding concerns the permeability of the school's boundary to digital fitness discourse. Where classification between school knowledge and everyday knowledge is weak, external discourses penetrate the reproduction field as de facto evaluative criteria. Students had already internalised, through social media exposure to fitpiration content, exercise videos, body-tracking applications, and self-surveillance technologies (Camacho-Miñano et al. 2022; García 2025; Goodyear, Kerner, and Quennerstedt 2019; Quennerstedt 2013; Tiggemann and Zaccardo 2015), a framework equating fitness with aesthetic transformation, quantifiable intensity, and visible effort. This 'datafication' functions as a hidden curriculum overriding holistic educational aims (Cereda 2025b). Digital and commercial fitness culture therefore performs an analogous function to the obesity crisis discourse Kirk (2006) identified: it repositions PE through expectations formed beyond the school.

These findings extend recent work showing that Instagram can operate as a gendered pedagogical field for health and physical activity (Camacho-Miñano et al. 2022), that TikTok fitness videos are consumed by PE students for entertainment, motivation, advice, and exercise-related engagement (García 2025), and that YouTube can function as a user-generated archive through which PE practices are made publicly visible (Quennerstedt 2013). Building on these studies, and extending them through a Bernsteinian lens, the present analysis interprets digital platforms as extra-school recontextualising agencies: they do not merely represent fitness, but may help define the criteria by which students recognise some forms of fitness as authentic and others as boring, insufficiently intense, or educationally irrelevant.

International transferability

Although this study is located in Italy, the findings are intended as analytically rather than statistically transferable. The Italian context is distinctive because LM-67/68 programmes, biomedical disciplinary traditions, and the new 60 CFU pathway shape the local PRF. However, the mechanism identified here – the uneven recontextualisation of regulative and instructional discourse – is not context-bound. PETE programmes in other systems may likewise succeed in fostering the take-up of educational ideals while leaving beginning teachers with limited situated repertoires for planning, assessment, affective safety, and critical engagement with digital fitness culture. The international

relevance of the study therefore lies less in the specific institutional configuration of Italian teacher education than in the Bernsteinian explanation it offers for why fitness education can remain pedagogically fragile even when teachers reject narrow performance-oriented logics.

Implications for PETE

The findings carry timely implications for PETE internationally and for Italian institutions implementing the 60 CFU initial teacher education pathways (PCM 2023). Four imperatives follow. First, programmes must move beyond transmitting isolated principles toward explicit instructional alignment (MacPhail et al. 2023), modelling complete didactic units under authentic school constraints. Second, preparation must integrate affective dimensions explicitly, including body-image literacy and strategies for psychological safety. Third, competence-based assessment must receive dedicated, fitness-specific attention: beginning teachers require concrete instruments for assessing health literacy, self-monitoring, and autonomous decision-making. Fourth, PETE programmes need to address critical digital fitness literacy, helping future teachers analyse how social media, body-tracking applications, and commercial fitness platforms shape students' expectations about what fitness should look and feel like.

The 60 CFU pathway, with its mandate to strengthen school-based preparation, represents an opportunity, provided that university–school partnerships are designed to render the instructional demands of fitness teaching visible and teachable. However, as Aldous, Evans, and Penney (2022) demonstrated, curriculum reform does not automatically translate into changed practice; the responses of teacher educators decisively shape outcomes. These implications are not confined to initial teacher education. Experienced teachers socialised into test-centred fitness units confront the same instructional void when seeking alternatives (Alfrey and Gard 2014), suggesting that continuing professional development in this domain (Alfrey, Cale, and Webb 2012) should target instructional, not only regulative, discourse.

Conclusion

This investigation examined how fitness knowledge is recontextualised as it moves from Italian university preparation to beginning teachers' school practice. The findings suggest a structurally asymmetrical process: university PRFs supported the take-up of regulative discourse grounded in health literacy and inclusion, equipping beginning teachers with a coherent orientation they actively deploy against performance-centred logics. Yet the corresponding instructional discourse, namely the pedagogical architectures through which values are made educationally real, remains systematically underdeveloped. School-based evaluative rules compound this precarity, narrowing pedagogical possibilities for teachers already navigating an instructional void.

The theoretical contribution lies in the use of Bernstein's (2000) pedagogic device to reframe what has historically been described as a theory–practice gap. The gap is not between theory and practice but between two structurally distinct components of pedagogic discourse, taken up and recontextualised with different degrees of deliberateness, practical realisation, and consequence for students' classroom experiences.

Limitations include reliance on retrospective self-report as the sole data source, a restricted sample ($N = 15$), and the impossibility of verifying whether reported intentions correspond to enacted practice. Future research combining interview data with classroom observation would illuminate whether the regulative-instructional asymmetry manifests in enacted pedagogy. Extending the analysis to mid-career teachers would clarify whether underdeveloped instructional discourse narrows through professional experience or persists as a structural feature of the field.

More broadly, this study invites a reconceptualisation of how fitness pedagogy is positioned within PETE research. The persistent framing of fitness education as a problem of teacher beliefs or student experiences obscures the structural mechanisms through which fitness knowledge is transformed across institutional fields. If fitness education is to fulfil its educational potential rather than reproduce performance-oriented and body-normative practices, the field must attend not only to what teachers should know and value but to the institutional architectures through which knowing and valuing are translated into coherent pedagogical action.

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Author contributions

CRedit: **Ferdinando Cereda**: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing.

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No potential conflict of interest was reported by the author(s).

Data availability statement

The data generated during this study are not publicly available due to privacy and confidentiality concerns related to the participants.

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