



The Meaning of Pedagogical and Research Practice in Physical Education and Sports Degree Programs in the City of Medellín

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Abstract

Objectives. The study aimed to explore the meaning of pedagogical and research practice in physical education teacher training in the city of Medellín, as part of a broader study on the Pedagogical Content Knowledge (PCK) of these professionals regarding research.

Materials and Methods. An interpretive approach with a multiple case study design was employed. Semi-structured interviews, validated by experts, were conducted with 18 teachers from the four universities that offer degrees in physical education and sports in the city of Medellín. The data was analyzed using Atlas.ti v25 software through open, axial and selective coding.

Results. Six key purposes of pedagogical and research practice were identified: training the teacher-researcher, developing critical thinking, combining theory and practice, contextual reading, recognizing professional fields of action, and training in research. Project-based learning was found to be a recurring methodology. Furthermore, a tension was identified between traditional practical training in physical education and the need to develop research skills.

Conclusions. Pedagogical and research practice should overcome the dichotomy between theory and practice through active pedagogies, develop skills for contextualized action research, and address various professional fields. The study contributes a framework for redesigning curricula that integrate research as a cross-cutting theme in physical education teacher training.

Keywords: pedagogical practice, research, physical education, initial training, teacher.

Introduction

Teacher training is a recurring field of study within the lines of research in different disciplines that focus on education. The aim is to “understand the triad of policy, practice, and research as a model for understanding, intervening, transforming, and building knowledge in the field of teacher training.” (Cisternas, 2011, p. 133). In this way, it stands as a field with discussions of scientific relevance in the area of education, since it allows questions and discussions to be raised in order to shape a theoretical and research corpus that can guide public policies and training practices carried out within teacher training (Burgos Calderón & Cifuentes Garzón, 2015), given that teachers

are immersed in the educational process and represent a mediating figure who, as an actor in the educational system responsible for training and cultural reproduction, establishes a pedagogical relationship with their students based on a common mission: to form an ideal subject.

On the other hand, it is imperative to mention the fact that society is in constant evolution, and education as a development strategy tries to respond to its demands, making its goals, purposes, philosophical positions, and management frameworks continually adapt to promote social and cultural development (Díaz Domínguez & Alemán, 2008). This justifies the education system taking on a fundamental purpose for its students: to develop the ability to discern, identify, and overcome the limitations of established knowledge, while simultaneously teaching them to think critically and independently, without dissolving the essence of thought, where the teacher emerges as a mediator between social demands and education.

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Thus, pedagogical knowledge and its construction have been the subject of relevant study in the field of education. Therefore, this issue is fundamental to understanding how teacher training is approached with respect to the disciplinary knowledge that education professionals must have. In this sense, Lemus (1997) defines pedagogy as the “intentional, systematic, and scientific study of education” (p. 43), which, laconically, is configured as the science of education oriented toward theoretical reflection on the educational phenomenon.

Accordingly, educational theory and practice are fundamental concepts that give meaning to pedagogical practice, which emerges as a space for the application, reflection, and transition of theoretical knowledge acquired during teacher training into contextualized educational experiences, through which future professionals acquire fundamental skills for their work in the classroom. (Tardif, 2014). Its importance lies in providing future teachers with a space for reflection in which they can connect theory with educational reality, thus fostering the construction of a solid professional identity. It also promotes the development of teaching and methodological skills appropriate to the sociocultural context in which they work and the acquisition of a critical view of their own professional performance. This training process empowers future teachers with their professional work and social responsibility.

In addition, when future teachers are faced with a practical scenario, they are expected to engage in reflection on their practice “in order to improve and/or strengthen it and, from that point, develop new knowledge, as in their professional practice they will continue to teach and build knowledge when faced with particular situations in the classroom” (Díaz Quero, 2006, p. 89). This allows for a situated reading of current educational, pedagogical, and didactic contexts, which in turn implies the emancipation of the realities of children and young people through their educational work, recognizing the situated experiences of students and enhancing their development.

Within this exercise of experiencing and inhabiting the educational phenomenon (Di Franco, 2023), research has been linked as a recurring tool for teaching practice, since through inquiry, future teachers can build pedagogical knowledge from their specific context of action (Burgos Calderón & Cifuentes Garzón, 2015). Authors such as Stenhouse (2012) have developed a theoretical corpus to conceptualize teachers as researchers of their own practice, which must transcend the technical application and reproduction of knowledge to advance the production of knowledge in education.

In this way, the practical training of education professionals has become immersed in the field of research, thus taking on a pedagogical and investigative character (pedagogical and research practice, PRP) (Bolívar Osorio, 2019). This relationship is established so that, when future teachers face an educational scenario, they can integrate formative research as a tool for reflection and the construction of knowledge based on experience, as well as being able to respond to different problems that may arise in the scenario in which they are involved (Bolívar Osorio, 2021). At the same time, research training is integrated, as it allows future teachers to learn about and appropriate different methodological tools belonging to the field of educational

science. This appropriation facilitates the configuration of best practices through rigorous research that leads to the transformation of educational realities with scientific basis and contextual relevance (García López, 2015).

Focusing on the specific field of Physical Education (PE) (Pérez Restrepo, 2024), allows the traditional dichotomy between theory and motor praxis to be overcome, promoting a teaching profile that builds pedagogical knowledge based on systematic reflection on its educational action in movement contexts. The starting point is the problem that those who train as PE teachers have a strong tendency to develop more pragmatic than theoretical, investigative, and reflective skills. This is due to the large number of career opportunities other than teaching that are integrated into the training: sports coach, sports administrator, physical activity and health instructor, health professional, among others (Pérez Restrepo, 2024). Thus, within the PRP in PE teacher training, it is mandatory to have at least one year of teaching experience in an educational institution, whether at preschool, elementary, middle, or high school level.

This integration allows future PE teachers to acquire theoretical and practical knowledge by addressing different subjects that are fundamental to their work as teachers in the school setting, where motor development, body expression, sports initiation, and inclusion through movement are highlighted (Cuervo Jiménez, 2024). In this context, the acquisition of physical fitness and skills such as sociomotor (Pérez Restrepo et al., 2024), psychomotor (Patiño Ardila et al., 2020) and perceptual-motor skills (Cuervo Zapata et al., 2023) are fundamental to human development (Castañer Balcells & Camerino Foguet, 2013).

Therefore, research in PE ceases to be an activity exclusive to external specialists and becomes a constitutive dimension of professional teaching practice, where the PE teacher-researcher develops skills to systematically observe motor behaviors, analyze bodily learning processes, design innovative teaching proposals, and evaluate their impact on the comprehensive development of students. For all the above reasons, it is necessary to question the meaning of pedagogical and research practice (PRP) in PE, since, as mentioned, physical educators, at least in Colombia, have a wide range of career opportunities, skills, and knowledge that must be continuously developed and evaluated in relation to their area of activity. Therefore, this study aims to reveal the meaning of PRP in PE from the perspective of teachers with degrees in PE from universities in the city of Medellín.

Materials and Methods

Sample Selection

The sample was selected using intentional and convenience sampling, considering that participants were selected based on their accessibility and proximity to the researcher (Sandoval Casilimas, 1996). Thus, the group of interest in this study consisted of 18 teachers from the aforementioned universities. The inclusion criteria were: being an active teacher in the PE and sports degree program at one of the aforementioned universities and being a professional practice advisor. The exclusion criteria were: not being an active teacher, not teaching any of the aforementioned courses, and not signing the informed consent form.

Design and Procedures

The study is based on an interpretive approach, as its main purpose is aligned with the understanding and interpretation of human experiences and actions in a specific historical and social context, where social, educational, and personal practices emerge. This is based on a descriptive and comprehensive interest in reality through its social actors (Bolívar, 2004; González Palacio, 2019). The nature of this research is qualitative, as the data are unstructured, given that they arise from the voices of the participants (González Palacio, 2019; Strauss & Corbin, 2002). In turn, qualitative studies focus on “studying reality in its natural context, as it happens, trying to interpret phenomena according to the meanings they have for the people involved” (Rodríguez et al., 1996, p. 32).

On the other hand, the design of this research is that of a case study (Chaverra Fernández et al., 2019), since it focuses on understanding the meaning of PRP, it is framed within a specific experience. In this way, it is configured as a multiple case since, as it is carried out with teachers from PE degree programs at different universities, each one refers to a case, and they are developed simultaneously in order to understand, explore, and identify the reality of the object to be studied (Galeano Marín, 2018; Stake, 1998). Thus, four cases are presented, corresponding to the bachelor's programs in physical education and sports offered in the city of Medellín, corresponding then to the University of San Buenaventura, the University of Antioquia, the Minuto de Dios University Corporation and the Jaime Isaza Cadavid Polytechnic.

Information Gathering Techniques

Data collection was carried out using interviews, which, according to Díaz-Bravo et al. (2013), “are a technical instrument that takes the form of a colloquial dialogue” (p. 163). This “allows for the collection of more in-depth and detailed information that even the interviewee and interviewer had not identified, as it adapts to the context and characteristics of the interviewee” (2013, p. 166). In addition, it was developed in depth in order to reveal detailed information about the object of study through life stories and experience.

On the other hand, the question guide was sent to three experts in the field of education and physical education and validated through the procedure proposed by Hernández Nieto (2002). It is evident that the 24 questions that make up the guide initially 22 have excellent content validity ($CVC > 0.90$) and two have acceptable validity ($0.71 < CVC < 0.80$), so the interviews were conducted using the initial guide for implementation. Now, it is important to note that this research was approved by the bioethics committee of the University of San Buenaventura in Medellín (11/08/2024) and was determined to be risk-free according to Resolution 8430 of 1993 of the Colombian Ministry of Health.

Qualitative Analysis

Subsequently, the information was collected in a comfortable, closed space, in an office provided by the university to which the teacher under investigation belonged.

Each interview was audio recorded and then manually transcribed in Microsoft Word. The analysis was carried out using Atlas.ti version 25, employing open and axial coding techniques (Strauss & Corbin, 2002), procedures that allow the data to be fragmented and reconfigured in order to reveal differences and similarities between the cases investigated in relation to the meaning of pedagogical and research practice.

Finally, the report of the results was prepared based on the Standards for Reporting Qualitative Research (SRQR) offered by O'Brien et al. (2014), which provide a structured framework for communicating this type of research with transparency and scientific rigor. In this sense, each category of analysis is supported by a testimony extracted from the different interviews, which were coded as follows: initially, reference is made to the type of document, interview (Int.), followed by the citation code generated by the analysis program, for example 1:22, where the first number is linked to the subject or interview number and the second to the citation sequence coded in Atlas.ti.

Results

Initially, the subjects surveyed were characterized (Table 1). As mentioned above, this group consisted of 18 teachers who were advisors for teaching practice in physical education and sports degree programs.

In terms of gender, the sample consisted of 61.1% men and 38.9% women. In terms of professional training, there was a predominance of teachers with a bachelor's degree in physical education and sports, accounting for 77.8%. At the same time, it is important to note that, despite being an undergraduate degree, not all teachers have training in this specific area, as there were professionals with training in biomedical engineering (5.6%), physical therapy (5.6%), special education (5.6%), and sociology (5.6%). This diversity of profiles reflects the trans- and interdisciplinary nature of the field of PE, where different disciplines are integrated for the study of education, the body, sports, and motor skills. With regard to the highest degree attained at the time of the interview, 61.1% had master's degrees and 38.9% had doctorates. The vast majority had degrees related to education, PE, and social sciences.

On the other hand, the sample was mostly made up of teachers from the University of Antioquia (33.3%), an institution where 100% of the participants had a PhD, followed by the Jaime Isaza Cadavid Colombian Polytechnic (27.8%), where 100% of the teachers who participated in the study had a master's degree. The University of San Buenaventura made up 22.2% of the sample, with one teacher holding a doctoral degree and two holding master's degrees. Finally, the Minuto de Dios University Corporation contributed 16.7% of the sample, where 100% of the teachers held master's degrees.

In a second stage, based on the objective of the study, the testimonies and accounts of each of the teachers were analyzed using open and axial coding. The first refers to “the analytical process by which concepts are identified and their properties and dimensions are discovered in the data” (Strauss & Corbin, 2002, p. 110), and the second consists of the “process of relating categories to their subcategories, called ‘axial’ because the coding occurs around the axis of a category and links the categories in terms of their properties and dimensions” (p. 134).

Table 1. Poblacion characterization

Gender	N	%
Male	11	61.1%
Female	7	38.9%
Undergraduate degree	N	%
Bachelor´s in physical education and sport	14	77.8%
Biomedical engineering	1	5.6%
Physioteray	1	5.6%
Bachelor´s in special education	1	5.6%
Sociology	1	5.6%
Titulo mas alto	N	%
Master in business administration	1	5.6%
Master in education	7	38.9%
Phd in physical education	1	5.6%
Master in motor skill-human development	2	11.1%
Phd in didactic innovation and teacher training	1	5.6%
Phd in business magement	1	5.6%
Phd in social sciences	1	5.6%
Phd in physical activity and sport sicences	2	11.1%
Phd in education	1	5.6%
Master in exercise physiology	1	5.6%
Universidad	N	%
University of san buenaventura	4	22.2%
University of antoquia	6	33.3%
Jaime isaza cadavid polytechnic	5	27.8%
Minuto de dios university corporation	3	16.7%

In this vein, we present the semantic network (Figure 1) that accounts for the macro-category: purposes and intentions of PRP. From this, six main categories emerge that refer to the purposes and intentions that give meaning to the investigative pedagogical and research practice (PRP). The first corresponds to the teacher-researcher, which is rooted in one of the fundamental objectives of teacher training in

Colombia (MEN, 2022). The second is closely related to the teacher’s ability to read the context in order to transform it or establish a more contextualized practice in line with the environment in which it is developed. The third refers to combining theory and practice, which is linked to the need for teacher trainees to transcend theory and move into the practical sphere of their field of work through PRP. The fourth refers to the development of critical thinking, which allows them to question the reality they experience within the practice center and develop reflective skills about their own teaching actions (Freire, 2005) The fifth falls within the framework of research training, which is linked to research methodology, research from an educational perspective, and methodological aspects such as data analysis

Finally, the sixth category is aimed at recognizing fields of action, which seeks to introduce students to a professional field of practice in order to immerse them in the various job possibilities for physical educators, including sports administration, school physical education, sports training, and the promotion of physical activity for health. Finally, the macro-category is associated with the dimension of Project-Based Learning (PBL), which refers to the teaching methodology used to effectively transpose and articulate all the purposes and intentions of the PRP, allowing the meaning of the PRP in the training of physical educators to be revealed.

These categories and their respective subcategories form a categorial network that complement the analysis of the testimonies and accounts provided by the teachers surveyed, with the aim of integrating the meaning of PRP into the field of PE, allowing for an understanding of the multiple dimensions and relationships that are established in this educational field.

To begin to elucidate the meaning of PRP in the training of PE and sports graduates, it is imperative to name the purposes and intentions that teacher advisors perceive about this fundamental component of teacher training. In this sense, one of the most recurrent objectives is to ensure that future teachers become teacher-researchers, given that “to be a teacher, it is necessary to develop as a reflective professional, since teaching requires questions, ideas, and issues, and therefore teaching demands a minimum amount

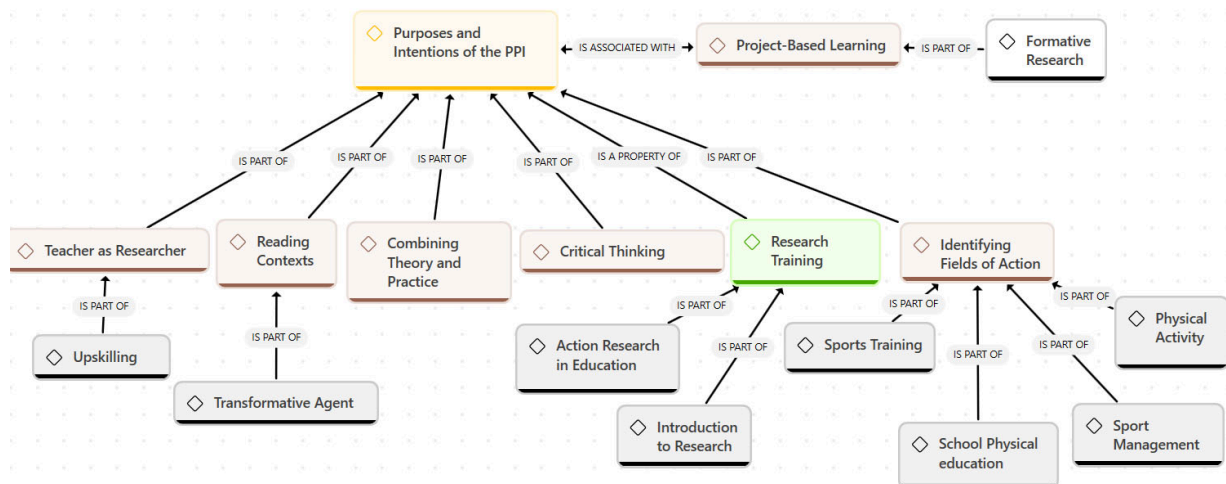


Fig. 1. Semantic Red of categorial analysis

of research” (Int. 2:9). In addition, this allows future teachers to be at the forefront of knowledge in relation to topics of interest and those that are part of their professional and disciplinary field, such as pedagogy and didactics. Therefore, future teachers must “know how to read science, know how to read advances and apply them to their profession. This exercise is what allows them to develop a spirit of constant questioning, which implies keeping up to date and improving practices in a certain sense” (Int. 2:16). Accordingly, this conception of the teacher-researcher has a direct relationship with the qualification of the future teacher, since being immersed in practice allows “the student to transform. After being in practice, the student is not the same; the student is in a permanent metamorphosis, in the sense that they are improving their praxis” (Int. 3:7). In turn, this has a practical meaning, since PE is increasingly becoming an interdisciplinary and transdisciplinary field in which “the profile of the physical educator is increasingly demanding, increasingly challenging, so it has become necessary to transcend practice and theory to an even more reflective and problem-solving sense, which greatly qualifies the profile in terms of job performance” (Int. 10:6).

Based on this qualification, students develop different skills that enable them to perform adequately in the professional field. Among these, the development of the ability to read and interpret contexts, particularly those in which they intervene or develop their pedagogical practice, stands out as a fundamental purpose of the PRP. This perspective is one of the central axes, as one of the teachers points out:

“In teaching, you always have to assess the students, the institution, and the teachers. You have to understand who you are going to talk to and who you are going to intervene with. This always happens regardless of the grade level or the name of the school or institution” (Int. 1:4).

This contextual analysis skill is considered fundamental in the training of physical educators, as it determines the effectiveness of pedagogical intervention. As another interviewee puts it:

“There are different contexts, different interests, different sociodemographic conditions. This reading of the context often allows students to adapt the curriculum content to specific needs” (Int. 2:11).

This skill allows future teachers to see themselves as agents of change in their practice and social contexts. This conception is rooted in critical perspectives on physical education, in which teachers are seen as transformative intellectuals and promoters of social change (McLaren, 2003). In line with this thinking, the teacher trainers interviewed placed special emphasis on the importance of cultivating this transformative dimension:

“Physical education graduates must be trained with the drive to penetrate the discipline in order to transform the subjects with whom they interact” (Int. 3:4).

This conception of the physical educator as a transformative agent is oriented toward an ethical-political commitment to social transformation from the educational and/or sports sphere. Another teacher reaffirms this vision by mentioning:

“I tell students all the time that they are transformers of life, that they are critical, and that they have the power to change many things through teaching praxis” (Int. 7:5).

The nexus between teaching and research is predicated on the practitioner’s capacity to translate questions about educational phenomena into critical self-reflection aimed at transforming their professional context

“If a teacher has a good research base, they question and reflect on their own practice and seek mechanisms or routes to improve the realities in which they intervene and interact all the time” (Int. 16:2).

This dialectical approach between reflection and intervention forms the basis of transformative pedagogical practice in the field of PE, positioning future physical educators as professionals with the critical capacity to contribute to the improvement of educational, sporting, and health promotion conditions in diverse sociocultural contexts.

This perspective reflects a complementarity with the objective of combining the theory learned during their training with practical knowledge that they can use in their practice. In this sense, the teachers pointed out that:

“It is in this practice that you manage to understand what the pedagogy and didactics books say. You have to refer to them in order to plan your practice, whether it is with a certain number of children taking a PE class or with athletes seeking to achieve high performance. With that theory, you have to make some adaptations and develop your skills in the field” (Int. 4:1).

“The importance that is combined in this practice is that theory and practice are interwoven because it allows you to learn how to do and how to be” (Int. 7:1).

In addition, the objective of future teachers developing critical thinking through pedagogical and research practice is reinforced, because “there is an issue there with critical thinking and reflection in students. It is a space where students learn to question the established order, analyze different perspectives, and construct solid arguments based on evidence” (Int. 16:3)

In this context, in order to qualify future teachers, the importance of linking pedagogical practice with research emerges. This gives rise to research training, which refers to the content, actions, and strategies developed in professional training so that students develop attitudes toward the production and adoption of scientific knowledge (Guerrero, 2007). When viewed within the context of training graduates in PE and sports, the teachers surveyed pointed out that:

“It helps students adopt tools that will be useful in their development and professional performance” (Int. 2:5).

“Research will allow them to transform themselves, their practices, and their knowledge” (Int. 11:2).

Following this reasoning, in order to achieve this, there is content that teachers consider essential for students to adopt the logic of research and transcend it within their practice. Initially, there is a clear interest in students understanding research methodology

“It is important that they first recognize the origin of research, scientific knowledge, and its dogmas. I often use a text called Philosophy of Social and Human Sciences, which is excellent for understanding research” (Int. 9:1).

Thus, the integration of various methods emerges within the research training process, which are observed holistically and implemented in a complementary manner in the training of graduates in PE and sports. These methods provide different ways of approaching knowledge. In relation to this methodological diversity, the teachers pointed out:

“I explain everything related to quantitative research, designs, and approaches” (Int. 18:10).

“I focus more on the qualitative. When we talk about school, it is a complex phenomenon, so the questions that arise there are more about understanding. That’s why I give them a little bit of phenomenology, hermeneutics, ethnography, and all those qualitative research designs” (Int. 17:4).

Methodological integration is also evident in mixed approaches: “I recently started implementing mixed research, where we do some tests, but then we do interviews” (Int. 16:12). Finally, contemporary approaches emerge that recognize the transdisciplinary nature of PE:

“it is possible to find a relationship with art. That intersection is observed in the object and reflection on the body. So I have implemented the post-qualitative approach that invites us to reconsider corporeality beyond simple biological materiality. We no longer talk only about bodies that move according to biomechanical parameters, but about bodies that are simultaneously materiality and sensitivity” (Int. 9:4).

On the other hand, research training is developed in conjunction with immersion in pedagogical practice, which, as mentioned above, fundamentally means that students, through their research training, can adopt, improve, and develop a praxis related to the specific field in which they practice. In this context, it is essential to understand that pedagogical practice allows students to recognize the various fields of professional action that their training offers them.

“Physical educators can work in gyms, sports clubs, compensation funds, schools, so this practice allows them to identify that and what they like” (Int. 5:4).

“Students choose one of four possible areas of emphasis: academics, sports training, physical activity, and sports administration. That choice is made based on their interests and comfort level” (Int. 10:1).

This perspective is rooted in the idea of two strands of educational research: research on education and research in (from education). According to Pérez Abril (2003), the former refers to all research carried out within an educational institution, while the latter is based on reflection on pedagogical practice itself. In this vein, it is clear that research in (from) education functions as a thematic axis and formative purpose within PRP when future teachers are immersed in school practice:

“The aim is for them to be able to generate knowledge by researching their own practice and, based on this, to improve their practice by researching themselves” (Int.1:28).

“It is the pillar that every teacher must have, because if the teacher has a good practical foundation in research, they question and reflect on their own practice and seek mechanisms or routes to improve the realities they face” (Int. 2:16).

Furthermore, this is linked to the recognition of PE as a dynamic discipline, which implies understanding that “the reality of PE is not static, but rather changes in terms of content, assessment, and new trends” (Int. 16:1). However, reductionist perceptions persist: “Currently, even with much progress, PE is still seen as a subject for recreation, a complementary subject, focused solely on sport” (Int. 7:3). In view of this, the discipline requires future teachers to develop research skills to adapt to its changes and respond

to contextual demands, since, as the same testimony points out, in practice “other areas of knowledge such as the body, motor skills, physiology, and pedagogy are integrated, allowing students to recognize the complex reality of their discipline” (Int. 7:3).

In order for students to achieve these objectives and integrate the different conceptions of Pedagogical and Research Practice (PRP), it is necessary to implement teaching strategies that facilitate an effective didactic transposition from theory to practice. In this context, project-based learning (PBL) stands out as a strategy that allows future teachers to build pedagogical knowledge and appropriate theory through action. According to the literature, PBL is “a learning model in which students actively work, plan, implement, and evaluate projects with real-world applications beyond the classroom” (p. 12, EAFIT).

This methodology involves practical immersion: “They are initially asked to make a diagnosis, from which they identify the project to be developed, followed by a methodological process of accompaniment and intervention to solve the problem addressed” (Int. 10:5). Furthermore, these projects are not limited to intervention, but can be “research, management, or even entrepreneurship, with the aim of linking practice with the development of a project” (Int. 5:7). To achieve this, formative research is integrated, where research becomes a tool in the teaching-learning process, allowing students to articulate theoretical and practical knowledge through research.

In this way, PRP in the training of PE and Sports graduates is seen as a comprehensive process where future teachers are immersed in real contexts to problematize, critically analyze, and transform their professional practice. Through the reading of specific educational situations, they identify problems that give rise to intervention, research, or innovation projects, articulating disciplinary knowledge with applied research methodologies. This immersion fosters a permanent reflective stance, where students, by appropriating conceptual and methodological tools, evolve towards a profile of teacher-researcher, positioning formative research as a cross-cutting axis of pedagogical practice that allows them to question, improve, and reconfigure both educational practices and their own understanding of the discipline.

On the other hand, a Sankey diagram (Figure 1) is presented, which allows us to find patterns that reveal differences and similarities in investigative pedagogical practice among the four physical education training institutions studied.

In this order, it is evident that the University of San Buenaventura has a tendency to emphasize formative research, that is, to integrate research tools for the development of practice rather than rigorous and specific research training. In turn, this is linked to the objective of helping students find their field of interest by understanding age groups and areas of work performance.

For its part, the University of Antioquia presents the most diversified configuration, with significant connections to critical thinking, research methodology, and the ability to read contexts, evidencing a holistic approach to the meaning of PRP, where the critical, the practical, and the transformation of contexts through practice converge.

On the other hand, the Jaime Isaza Cadavid Polytechnic shows a distinctive orientation towards project-based

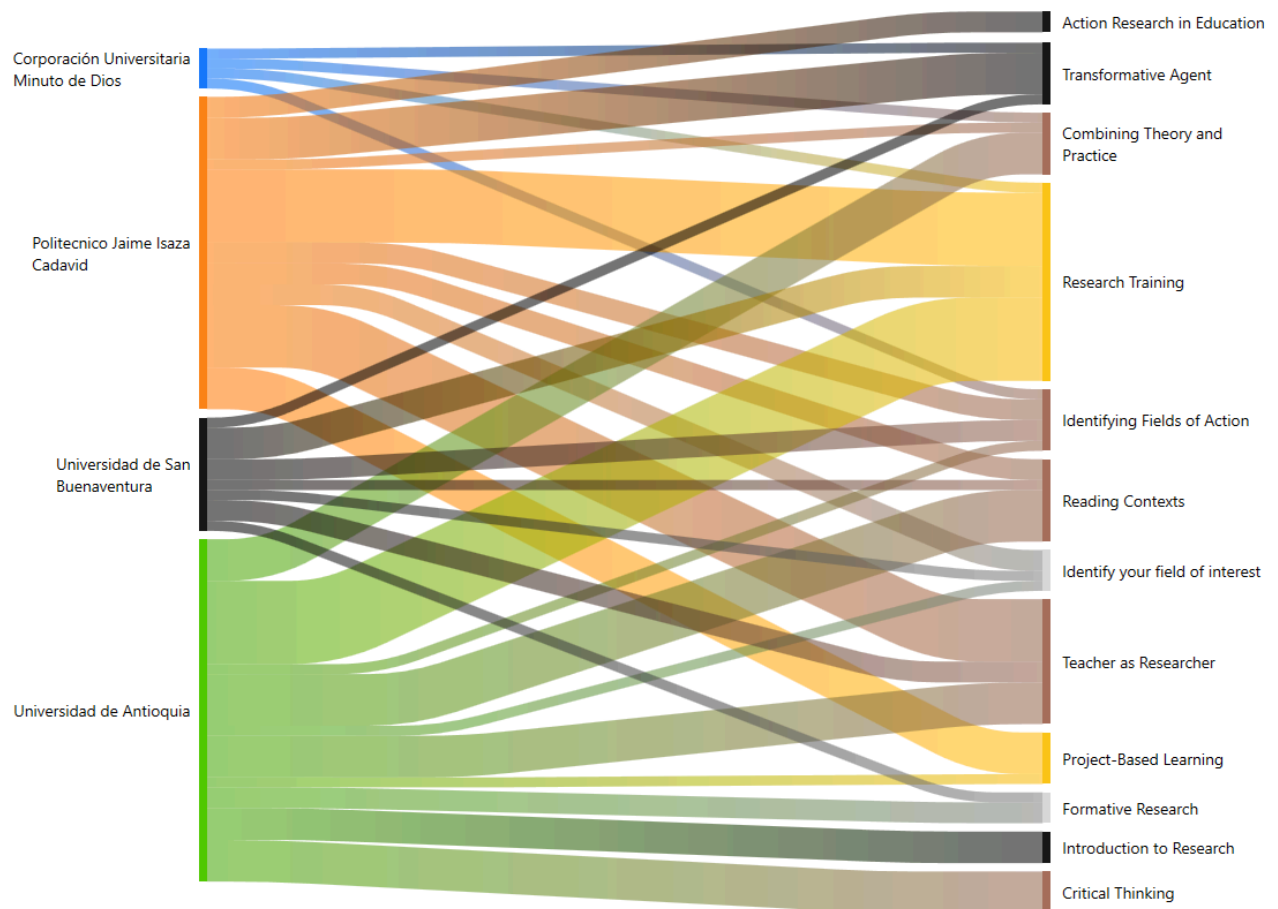


Fig. 2. Sankey diagram

learning and the recognition of professional fields of action, suggesting a training model anchored in contextualized professional competencies, while the Minuto de Dios University Corporation privileges research from education and the disciplinary recognition of PE, thus strengthening the epistemological identity of the field in its students.

These institutional variations coexist with three shared conceptual cores: training in research, the conception of the teacher as a researcher, and the integration of theory and practice, reflecting both the epistemological-pedagogical diversity and the common concerns that currently characterize teacher training in PE in Colombia, where the tension between the specific disciplinary and the general pedagogical constitutes one of the fundamental debates, similar to what is observed in international contexts.

Discussion

In line with the objective of this study to reveal the meaning of PRP in the training of PE and sports graduates in the city of Medellín, it was noted that, after a literature review carried out for data triangulation, academic production on this topic is in its infancy.

However, a quantitative study was found in Colombia (Sanabria Navarro et al., 2024), that designed and validated a questionnaire that allowed for the analysis of PRP in a bachelor's degree program in PE, recreation, and sports. This

study reported that the main focus of the program is on recreation, which is a disadvantage for students in training, given that, within their professional development, when they take up teaching or administrative positions in educational or sports institutions, broader competencies are required. This conclusion is in line with what the teachers in this study said, where the essence of pedagogical practice is that the teacher in training can develop and gain experience in fields that are related to their professional training, which, in the case of PE, is diverse, not just recreational.

In addition, the same study (Sanabria Navarro et al., 2024) highlighted the need for practice to provide the necessary knowledge for job performance, where related aspects are rooted in skills such as critical reflection and research skills, given that these enable students to develop a situated reflection on their own practice that allows them to identify opportunities for improvement in their job performance. This suggests the importance of linking pedagogical practice with research, since its meaning lies in the possibility for students to improve and innovate their own practice through research skills.

The research carried out by Molano Tobar et al. (2021) analyzed the pedagogical practices carried out by PE students in the field of preschool education. It initially complements the findings of this analysis by addressing the emphasis on PE in schools; this perspective is enriched in the sense that, in this emphasis, physical educators are not confined to

a single educational level but, at least in Colombia, have four levels at which they can work (preschool, primary, secondary, and middle school). In this sense, the authors mention the importance of teacher training, at least in the area of PE, requiring teachers to have experience working with preschool-aged children, as this allows them to develop an understanding of how to overcome the dichotomy between theory and practice and recognize the importance of human development theories in order to create meaningful practices with children. In contrast to the cited research, a new line of research is suggested. This perspective emerges from the need to reveal the specific meaning of PRP in each of the four fields of action of the physical educator evidenced in the research: school PE, physical activity and health, sports training, and sports administration.

This line of research contributes significantly to the existing conception of PRP, which has been reductionist and generalized, recognizing that each field of performance demands particular training objectives, differentiated pedagogical strategies, and specific professional competencies, as evidenced in the institutional connections in the diagram, where situated practical knowledge and contextualized recognition of each field constitute the particular training emphases that institutions prioritize in a differentiated manner.

At the international level, the research of Moen and Standal (2016) in Norway stands out, which aimed to understand the relationship between the triad of teacher advisors (university), cooperating teachers (practice center), and future teachers through a qualitative study implementing network analysis and figurative sociology. It was concluded that the core of the practice is the cooperating teachers, as they play a fundamental role in effectively placing future teachers within the construction of their professional identity and their development within the specific area. In contrast to the research carried out, which does not consider the role of these cooperating teachers and places importance on the development and advising of pedagogical projects as a means for the construction of pedagogical knowledge. However, there are similarities in placing practice as a fundamental means for the recognition of fields of work and the recurring concern that students and trainers have to effectively link the theoretical content of the practice, understanding the complexity of PE and the existing imaginary that physical educators are only trained in doing, leaving aside their epistemological content.

Likewise, the study conducted by Bolívar Osorio (2021) found that PRP is based on the objective of promoting an integrative curriculum that allows the knowledge developed in practice to be linked to the epistemological knowledge that is founded within training, linking them to the processes of reflection and improvement of their praxis, coinciding with the foundation of an articulating strategy that combines theory with practice. In the research carried out, there are similarities in the sense that different methodologies are found to transcend this theory-practice dichotomy, which results in or gives rise to active pedagogies and their implementation to carry out investigative and reflective exercises during pedagogical practice.

On the other hand, the research carried out by Ripoll-Rivaldo (2021) with undergraduate students of early childhood education showed that the articulating axis of pedagogical practice is located in didactics, in which students within their teacher training manage to develop new didactic strategies to implement in the classroom,

which combines an amalgam of components that give primacy to professional practice, which are related to the knowledge developed within the practice, the collaboration established between the different agents belonging to the teaching practice, and the development of problem-solving skills in the development of classes. In contrast, the research presented here showed that teachers, at least those in PE, do not have school teaching as their only field, but also have the possibility of working as coaches and administrators, so the articulating axis is not based on an exclusively educational concern, but rather on research skills as an integrating element of the different emphases in which they work.

Finally, with regard to pedagogical practice, it is possible to establish relationships between the results of this study and those of Castillo Gutiérrez and García Sandoval (2017) which confirms the inherent tendency of pedagogical practice to be a reflective component that allows future teachers to analyze real situations in their field of emphasis in order to achieve a transformation within their professional work. Likewise, in both cases, educational research is presented as the articulating axis of reflective practice, recognizing that teachers, within their work, need to develop minimum research skills. In turn, the recognition of contexts plays a fundamental role in pedagogical practice, highlighting the imperative need to understand the sociodemographic and biological conditions of the population to be served before intervening.

However, there are complementary differences between the comparative studies. Regarding the ethical dimension, previous studies emphasize that critical reflection can strengthen the ethical and moral training necessary in teaching. Accordingly, the importance of the teaching role in the 21st century is highlighted, a perspective that was not developed extensively in our study but is considered one of the most important aspects of pedagogical practice. In the current educational environment, there is evidence of the constant evolution of this role and the continuous integration of new methodologies, thus generating emerging paradigms of teaching. This perspective is fundamental to understanding how pedagogical practices effectively allow future physical educators to situate their role within a changing society.

Conclusions

The study concludes that the PRP in PE degree programs is a multifaceted process with several key implications for teacher training.

Integration of Theory and Practice: The PRP serves as a fundamental component for interweaving theory with practice, overcoming the traditional dichotomy between them. It enables future PE teachers to transform academic knowledge into applied professional skills by situating their learning in real-world scenarios.

Development of Reflective and Research Competences: A central purpose of the PRP is to cultivate critical thinking and research skills, preparing students to become teacher-researchers who can systematically reflect on and improve their own practice. This includes training in diverse methodological approaches that allow them to analyze complex educational phenomena related to the body and movement.

Practice as a Tool for Understanding Context and Professional Fields: The PRP is essential for developing the ability to perform an analytical reading of educational

contexts, which allows for curricular adaptations based on the specific needs of the population being served. Furthermore, it provides opportunities for students to recognize and explore the multiple professional fields of action available to a physical educator, including school PE, sports training, health promotion, and sports administration.

Implications for Curriculum Redesign: The findings support the need to redesign curricula to integrate research as a cross-cutting theme in teacher training. It is recommended that programs structure practicums around a progressive Action Research model, using active methodologies like Project-Based Learning (PBL). This approach ensures that practical interventions are grounded in a critical analysis of the context, moving beyond unreflective activism.

Conflict of interest

If the authors have any conflicts of interest to declare.

References

- Cisternas, T. (2011). La investigación sobre formación docente en Chile: Territorios explorados e inexplorados. *Calidad En La Educación*, 35, 131-164. <https://doi.org/10.4067/S0718-45652011000200005>
- Burgos Calderón, D.B., & Cifuentes Garzón, J.E. (2015). La práctica pedagógica investigativa: Entre saberes, querer y poderes. *Revista de La Facultad de Educación, Ciencias Humanas y Sociales*, 17(2), 118-127. <https://dialnet.unirioja.es/servlet/articulo?codigo=5455073>
- Díaz Domínguez, T., & Alemán, P.A. (2008). La educación como factor de desarrollo. *Revista Virtual Universidad Católica Del Norte*, 23, 1-15. <http://www.redalyc.org/articulo.oa?id=194220391006>
- Lemus. L.A. (1997). *Pedagogía: temas fundamentales* (Concepto de Pedagogía, Cap. III). En G. Cordero y M. Quesada (Compiladores) Educación y Epistemología, Centro de Investigación y Docencia en Educación (CIDE), Universidad Nacional, 43-52.
- Tardif, M. (2014). *Los saberes del docente y su desarrollo profesional*. NARCEA.
- Díaz Quero, V. (2006). Formación docente, práctica pedagógica y saber pedagógico. *Laurus Revista de Educación*, 12, 88-103. <http://www.redalyc.org/articulo.oa?id=76109906>
- Di Franco, M.G. (2023). Habitar la universidad y las escuelas. *Praxis Educativa*, 27(1), 1-5. <https://doi.org/10.19137/praxiseducativa-2023-270101>
- Bolívar Osorio, R.M. (2019). Investigar la práctica pedagógica en la formación inicial de maestros. *Pedagogía y Saberes*, 51, 9-22. <https://doi.org/10.17227/pys.num51-2881>
- Bolívar Osorio, R.M. (2021). Miradas críticas a la apropiación de la práctica reflexiva en la formación docente. Una revisión de literatura. *Encuentro Educativo*, 2(1), 104-132. <https://revistas.uncu.edu.ar/ojs3/index.php/encuentroE/article/view/4948>
- García López, G. (2015). La investigación en la formación docente inicial. Una mirada desde la perspectiva sociotransformadora. *SABER. Revista Multidisciplinaria Del Consejo de Investigación de La Universidad de Oriente*, 27(1), 143-151. https://ve.scielo.org/scielo.php?script=sci_arttext&pid=S1315-01622015000100017
- Pérez Restrepo, T., Valencia Gómez, M.A., Howard Henry, J.B., & Cuervo Zapata, J.J. (2024). Abordaje de las capacidades socio motrices en la clase de educación física. Una revisión sistemática exploratoria 2019-2024. *EmásF*, 19(90), 15-36. <https://dialnet.unirioja.es/servlet/articulo?codigo=9680280>
- Cuervo Jiménez, D.S. (2024). ¿Y qué es eso llamado Educación Física? Una aproximación hacia la contextualización. *MENTOR Revista de Investigación Educativa y Deportiva*, 3(8), 526-546. <https://doi.org/10.56200/mried.v3i8.7837>
- Patiño Ardila, J.E., Ramírez Berrio, J.H., & Ayala Lopera, D. (2020). *Correlación entre la motivación y las capacidades psicomotrices en la clase de educación física* [Pregrado, Universidad de San Buenaventura]. <http://hdl.handle.net/10819/7978>
- Cuervo Zapata, J.J., Montoya, N.E., & González Palacio, E.V. (2023). Evaluación de las capacidades perceptivo motrices en el contexto escolar – Diseño y validación de una batería (Evaluation of motor perceptual capabilities in the school context – Design and validation of a battery). *Retos*, 47(47), 593-602. <https://doi.org/10.47197/retos.v47.95726>
- Castañer Balcels, M., & Camerino Foguet, O. (2013). *La educación Física en la enseñanza primaria: una propuesta curricular para la reforma*. INDE.
- Sandoval Casilimas, C.A. (1996). *Investigación cualitativa*. ICFES.
- Bolívar, A. (2004). El conocimiento de la enseñanza: explicar, comprender y transformar. *Mimesis-Ciencias Humanas*, 25(1), 17-42. https://secure.unisagrado.edu.br/static/biblioteca/mimesis/mimesis_v25_n2_2004_art_01.pdf
- González Palacio, E. V. (2019). *Representaciones sociales sobre la formación inicial y ser maestro en estudiantes de educación física del departamento de Antioquia* [Doctorado]. Universidad de Antioquia.
- Strauss, A. L., & Corbin, J. M. (2002). *Bases de la investigación cualitativa: técnicas y procedimientos para desarrollar la teoría fundada*. Editorial Universidad de Antioquia, Facultad de Enfermería de la Universidad de Antioquia
- Rodríguez, R., Gil, J., & García, E. (1996). *Metodología de la investigación cualitativa*. Algibe
- Chaverra Fernández, B. E., Gaviria Cortés, D. F., & González Palacio, E. V. (2019). El estudio de caso como alternativa metodológica en la investigación en educación física, deporte y actividad física. Conceptualización y aplicación. *Retos*, 35, 422-427. <https://doi.org/10.47197/retos.v0i35.60168>
- Galeano Marín, M. E. (2018). *Estrategias de investigación social cualitativa. El giro en la mirada* (2nd ed.). Universidad de Antioquia. Facultad de Ciencias Sociales y Humanas. Fondo Editorial FCSH.
- Stake, R. E. (1998). *Investigación con estudio de casos*. Ediciones Morata.
- Díaz-Bravo, L., Torruco-García, U., Martínez-Hernández, M., & Varela-Ruiz, M. (2013). La entrevista, recurso flexible y dinámico. *Investigación En Educación Médica*, 2(7), 162-167. <http://riem.facmed.unam.mx/index.php/riem/article/view/430/397>
- Hernández Nieto, R. (2002). *Contributions to Statistical Analysis*. Universidad de los Andes.
- O'Brien, B. C., Harris, I. B., Beckman, T. J., Reed, D. A., & Cook, D. A. (2014). Standards for Reporting Qualitative Research. *Academic Medicine*, 89(9), 1245-1251. <https://doi.org/10.1097/ACM.0000000000000388>
- Pérez Abril, M. (2003). La investigación sobre la propia práctica como escenario de cambio escolar. *Pedagogía y Saberes*, 18, 70-74. <https://doi.org/10.17227/01212494.18pys70.74>

- Sanabria Navarro, J.R., Castillo Gómez, M.E., & Hoyos Babilonia, L. del C. (2024). Práctica pedagógica investigativa: análisis en el programa de educación física, recreación y deportes de la Universidad de Córdoba, Colombia (Investigative pedagogical practice: analysis of in the Physical education, recreation and sports program of the University of Córdoba. Colombia). *Retos*, 57, 623–631. <https://doi.org/10.47197/retos.v57.106335>
- Molano Tobar, N. J., Jiménez López, G. H., & Molano Tobar, D. X. (2021). La práctica pedagógica de los estudiantes de Educación Física con niños preescolares. *Infancias Imágenes*, 19(2), 124-132. <https://doi.org/10.14483/16579089.14917>
- Moen, K. M., & Standal, Ø. (2016). Practicum in Physical Education Teacher Education: An Educational Partnership? *SAGE Open*, 6(1). <https://doi.org/10.1177/2158244016635715>
- Ripoll-Rivaldo, M. (2021). Prácticas pedagógicas en la formación docente: desde el eje didáctico. *Telos Revista de Estudios Interdisciplinarios En Ciencias Sociales*, 23(2), 286-304. <https://doi.org/10.36390/telos232.06>
- Castillo Gutiérrez, M. C., & García Sandoval, P. A. (2017). La práctica pedagógica, un espacio de reflexión en la formación docente. *Rastros y Rostros Del Saber*, 2(1), 75-76.

Значення педагогічної та науково-дослідницької практики в освітніх програмах з фізичного виховання та спорту в місті Медельїн

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Авторський вклад: А – дизайн дослідження; В – збір даних; С – статаналіз; D – підготовка рукопису; E – збір коштів

Реферат. Стаття: 10 с., 1 табл., 2 рис., 28 джерел.

Мета дослідження. Мета дослідження полягала у вивченні значення педагогічної та науково-дослідницької практики у підготовці викладачів фізичного виховання в місті Медельїн, в рамках проведення ширшого дослідження з питань знання педагогічного змісту (ЗПЗ) цих фахівців в галузі науково-дослідницької роботи.

Матеріали та методи. Застосовано інтерпретативний підхід із використанням дизайну дослідження множинних випадків. Проведено напівструктуровані інтерв'ю, що були затверджені експертами, у яких взяли участь 18 викладачів із чотирьох університетів, що надають освітні ступені у галузі фізичного виховання та спорту в місті Медельїн. Дані проаналізовано за допомогою програмного забезпечення Atlas.ti v25 шляхом застосування відкритого, осевого та селективного кодування.

Результати. Визначено шість ключових цілей педагогічної та науково-дослідницької практики: підготовка викладача-дослідника, розвиток критичного мислення, поєднання теорії та практики, контекстуальне читання, визнання професійних сфер діяльності та підготовка до проведення наукових досліджень. Встановлено, що навчання з використанням проектних технологій (проектне навчання) є повторюваною методологією. Крім того, виявлено суперечність між традиційною практичною підготовкою у фізичному вихованні та необхідністю розвитку дослідницьких навичок.

Висновки. Педагогічна та науково-дослідницька практика повинні подолати дихотомію між теорією та практикою за допомогою активних педагогічних методів, розвитку навичок контекстуалізованих досліджень дій та охоплення різних професійних галузей. Дослідження забезпечує основу для перепроєктування навчальних програм, які інтегрують науково-дослідницьку роботу як наскрізну тематику в підготовці викладачів фізичного виховання.

Ключові слова: педагогічна практика, науково-дослідницька робота, фізичне виховання, початкова підготовка, викладач.

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