Professional identity in physical education: a review of literature
Identidad profesional en educación física: una revisión de la literatura

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Abstract. Teachers' professional identity shapes teachers' educational views, impacting their behaviour, action and decision making. This study was designed with the goal of locating, compiling and analysing articles regarding professional identity in the physical education context and identifying elements that contribute to professional identity construction. We selected *professional identity* and *physical education* as search items in Web of Science, ERIC, SPORTDiscuss and Scopus. To investigate the previous decade of research, we limited the study to articles published between 2010 and 2020. This work combines recent publications written in Portuguese, English and Spanish. The database search yielded 27 relevant articles. The themes present in the articles can be divided into two groups: those linked to key actors and influences on physical education teachers' professional identity, and those related to physical education preservice teachers. The following themes were discovered to influence teachers' professional identity formation: relationships (established within their acting context), identity negotiation, identity transformation, lifelong learning, peer perception and the class context. The following themes impact preservice teachers' professional identity formation: teaching practicum experience, prior experiences, a community of practice and the teachers' body. Professional identity formation is an intricate process characterised by a diverse mix of personal, professional, environmental and social representations that interact in real time.
Keywords: teachers' professional identity; physical education; identity; literature review; teachers.

Resumen. La identidad profesional de los docentes forma sus opiniones educativas, lo que influye en su comportamiento, acción y toma de decisiones. Este estudio fue diseñado con el objetivo de localizar, compilar y analizar artículos sobre la identidad profesional en el contexto de la educación física e identificar elementos que contribuyen a la construcción de la identidad profesional. Seleccionamos *identidad profesional* y *educación física* como elementos de búsqueda en Web of Science, ERIC, SPORTDiscuss y Scopus. Para investigar la década anterior de investigación, limitamos el estudio a artículos publicados entre 2010 y 2020. Este trabajo combina publicaciones recientes escritas en portugués, inglés y español. La búsqueda en la base de datos arrojó 27 artículos relevantes. Los temas presentes en los artículos se pueden dividir en dos grupos: aquellos vinculados a actores clave e influencias en la identidad profesional de los profesores de educación física, y aquellos relacionados con los futuros profesores de educación física. Se descubrieron los siguientes temas que influyen en la formación de la identidad profesional de los docentes: relaciones (estabelecidas dentro de su contexto de actuación), negociación de la identidad, transformación de la identidad, aprendizaje permanente, percepción de los compañeros y el contexto de la clase. Los siguientes temas impactan en la formación de la identidad profesional de los futuros docentes: la experiencia de la práctica docente, las experiencias previas, una comunidad de práctica y el cuerpo de docentes. La formación de la identidad profesional es un proceso intrincado caracterizado por una mezcla diversa de representaciones personales, profesionales, ambientales y sociales que interactúan en tiempo real.
Palabras clave: identidad profesional docente; identidad profesional; educación física; revisión de literatura; maestros.

Introduction

Teachers' professional identity is a challenging topic to describe resulting in a definition issue (Mifsud, 2018); but it is a pertinent field of study since teachers' professional identity determines their educational beliefs, influencing their behavior, action and decision making (Raus & Falkenberg, 2014). Teachers' self-efficacy, motivation, dedication and job satisfaction are all enhanced by a sense of professional identity, which is a critical component of becoming a successful teacher (Flores & Day, 2006).

The concept of identity has several interpretations in the literature. The process of understanding oneself as a specific type of person and being recognized as such in a particular setting is known as identity (Gee, 2001). Identity formation takes place in a intersubjective sphere and is best described as a continuous process rather than a fixed attribute of a person (Beijaard et al., 2004). Research also suggest that identity is the result of interactions between personal, professional and environmental elements (Day & Kington, 2008) and teachers might experience conflicts within and between these three elements. The idea that identity is dynamic and that a teacher's identity evolves over time as a result of many internal and external factors is widely held in the literature (Beauchamp & Thomas,

2009). On a conceptual level, questions such as *Who am I as a teacher?*, *What should I do?* and *Why should I do it?* can be used to explore teaching identity.

Professional identity is a complex and dynamic construct formed by the interaction of hereditary identity and relational identities (Anversa et al., 2020); and it is influenced by beliefs, personal qualities, professional competencies, prior experiences, knowledge, pedagogical abilities (Castañeda-Vázquez et al., 2020); biographic, social, organisational and educational settings (Anversa et al., 2020; Bolivar, 2007).

Beijaard et al. (2004) conducted a review that focused on professional identity formation, professional identity features and professional identity as demonstrated by teachers' life experiences. The idea of professional identity was variously defined or not at all in the papers analysed by the researchers. They identified four problems with researching professional identity: how identity and self relate; how most studies focus on the personal side and less on the context and professional side; what constitutes professionalism; and the cognitive perspective that underpins professional identity studies. This is another example of the difficulties that researchers have in identifying teachers' professional identities and ways of studying it.

Izadinia (2013) conducted research on preservice teachers (PSTs) professional identities and discovered a growing interest in exploring professional identities, showing the significance and pertinence of this field of study. The author came to the conclusion that PSTs would benefit from recognising their teacher identity earlier in order to comprehend their professional goals and careers. In their review Izadinia (2013) identifies PSTs' sense of agency, self-awareness, critical consciousness, cognitive knowledge and the relationships established (with peers and students) as some of the key components of PSTs' identity. The authors express their concern about only favourable changes and desired results being reported in the studies reviewed, and conclude that with that teacher educators, policymakers and PSTs fail to handle the befuddling complexity on the horizon, which obstructs PSTs' identity formation (Izadinia, 2013).

Professional identity changes and the case of physical education (PE) is particularly intriguing due to its own distinct school and classroom setting. The subject of PE occupies a marginalised status in many educational contexts (Hendry, 1975; Kougioumtzis et al., 2011), leading teachers to struggle for autonomy, role ambiguity and professional identity (Hendry, 1975). As a result, it is not surprising that the marginalisation of PE, in comparison to other subjects, frequently leads to a sense of physical and intellectual isolation among PE teachers (Curtner-Smith,

2001; Gaudreault et al., 2016a; Gaudreault et al., 2016b; Green, 2008; Raymond, 2016). Evidence suggests that both isolation and marginalisation have detrimental effects on the work of PE teachers (Richards et al., 2014). As a result of the subject's marginalised status in many school contexts, PE teachers often feel like second-class teachers or that their contributions to the main goal of their educational institutions are less significant (Gaudreault et al., 2016a), which can have a damaging influence on assessment of one's teaching abilities and emotions, influencing views about being a teacher (Simonton et al., 2021).

Considering that Physical Education does not naturally fit into the academic hierarchy of the school (Hendry, 1975) it is possible to inquire how PE teachers create their professional identity. The various elements impacting PE teachers' professional identities, such as unfavourable social perceptions of PE teachers and their work, makes this issue crucial to investigate. There is a lack of research on PE teachers' professional identity (Keating et al., 2017) which obstructs efforts to train high-quality PE teachers; and researchers concluded that there is an urgent need to investigate this topic in order to expand knowledge on fundamental issues related to professional identity in Physical Education.

Purpose of the study

This review of literature was created with the goal of locating, compiling and analysing publications regarding PE teachers' professional identities, as well as identifying variables that contribute to its formation. As a result, the purpose of this review is to: a) define the scope of research on professional identity in the physical education context for the last ten years; b) identify the methodology used; and c) identify significant variables in its formation.

Methods

We developed this study using a qualitative approach and a narrative summary as a method for synthesising primary studies (Dixon-Woods et al., 2005). This inclusive method of review (Dixon-Woods et al., 2005) was used in this review of literature to group themes discovered throughout research in order to identify, through interpretive synthesis, contributing elements to the formation of teachers' professional identities.

We have developed a set of criteria (such as search items, which databases to search on, inclusion and exclusion criteria) to frame the study and simplify data analysis in the aim of scientific rigour and collecting the most trustworthy and relevant data. After determining our research purpose, we chose the search items *professional identity* and *physical education*.

The research was conducted in four major education electronic research databases, in order to include the most reliable educational studies available. As a result, we conducted searches on Web of Science, ERIC, SPORTDiscuss and Scopus. We restricted the research to articles published between 2010 and 2020 in order to examine the last decade of research. This study adds to the current literature by synthesising a collection of recent papers written in three languages: Portuguese, English and Spanish.

In order to choose the publications that belong and fall outside of the subject of this research, inclusion and exclusion criteria were created. Only open access empirical research published in peer-reviewed journals, papers with an abstract and full text and articles written in English, Portuguese or Spanish were accepted as inclusion requirements. Papers published in books or at conferences, articles of literature review, articles written in languages other than those approved in the inclusion criteria and any publications that did not meet the inclusion requirements were all rejected.

Two researchers applied these criteria independently and precisely. In the event that the researchers arrived at different conclusions, all phases of the investigation were documented and the criteria supported. The selection method, which was divided into two phases, was carried out by the two researchers. The title and abstract were examined first, followed by a full-paper examination of the remaining articles. Figure 1 summarises the process of selecting papers for review.

The research found 303 potential papers for review. After manually eliminating duplicates, 233 studies were considered for inclusion, with 39 being rejected for the following reasons: a) lack of complete text; b) lack of open access; c) structure (not being empirical, year out of the preferred range and systematic reviews). From the 194 articles reviews, 167 were removed because they were outside the scope of the issue under investigation and, hence, out of focus. The investigation yielded 27 empirical studies.

The studies were analysed to collect data such as objectives, participants, instruments and significant conclusions. A procedure that aided in the comparison of texts. Three levels of analysis were performed on the content of the 27 papers. The particular focus of each investigation was identified through level 1 analysis. The methodologies used in each study were taken into consideration at level 2 analysis. At level 3 analysis, the published findings were examined to determine how researchers understood and discussed professional identity in the physical education context.
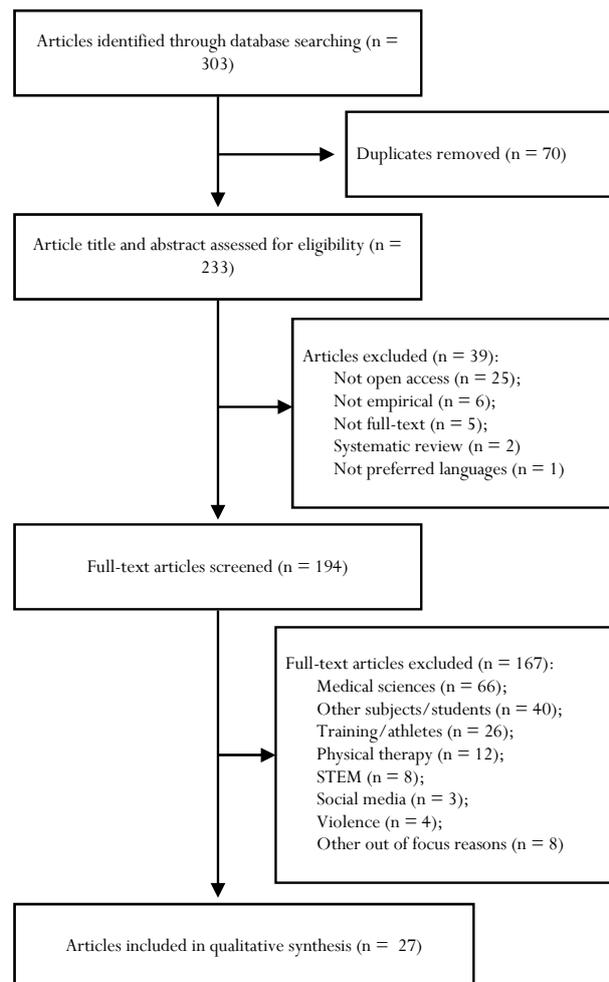

Figure 1. **Study selection process**

Results

Apart from the year 2010, in which we found zero eligible articles, the amount of articles published varied between one article (2011 and 2016) and five articles (2014 and 2020). The 27 eligible articles were authored by 59 authors in total, with Gustavo González-Calvo (five), David Hortigüela-Alcalá (four) and Paula Batista (three) making the greatest contributions to the field. These studies were conducted in eight distinct contexts: thirteen in Spain, six in Brazil, three in Portugal, one in Australia, one in Poland, one in Ireland, one in the United States of America and one in Hong Kong.

The majority of the studies originated from Western cultural contexts and research on identity is almost non-existent in developing nations. Understanding that identity is heavily impacted by contextual circumstances, the involvement of academics from different settings to conduct studies on professional identity in the PE context and provide local knowledge is crucial.

Overall, the *professional identity* and *physical education* database search yielded 27 publications, 13 of which were in English, 9 in Spanish and 5 in Portuguese. Table 1 displays the results in chronological order and provides an overview of all research based on their objective, participants, instruments and key findings.

Table 1

Chronological overview of the studies on Professional Identity and Physical Education

Author (Year)	Purpose of study/Participants	Instruments	Major findings
Rodrigues and Figueiredo (2011)	Understand how a PE teacher builds her teaching identity in light of relational experiences lived. 1 PE teacher	Semi-structured interview	The PE teacher expressed an identity claimed by herself and an identity that others assigned to her. This incompatibility revealed an identity shift. Identity formation creates space for identity tactics and reveals the existence of identity negotiation. Moments when the teacher doubts her work have been identified, showing tensions regarding teachers' identity formations and contributing to the development of an identity crisis.
Mooney and Hickey (2012)	Explore how female PE teachers at an all-boys' school negotiate their professional identity. 1 male headmaster 2 deputy headmasters (1male, 1 female) 1 female head of department 1 female PE teacher	Semi-structured interview	The dominant discourses of masculine hegemony strongly influenced the participants' professional identity negotiation. The environment of an all-boys' school has a subtle influence on how female PE teachers perceive themselves as professionals. Female participants tended to be susceptible to dominating masculine discourses, which influenced their perceptions about their success in this environment. The use of a male lens to understand effectiveness is common. The female participants used 'self-work' as a strategy to overcome problems related to their embodied femininity being positioned outside the masculine hegemony, driven by a desire to be recognised and regarded as a valuable professional by their peers.
Rodrigues et al. (2012)	Understand the influence of socio-professional relationships in the teaching identity formation of a female PE teacher. 1 female PE teacher	Observation; Field notes; Interviews; Documents	Not only did the teacher demonstrate her thought on teaching identity, but she also demonstrated how the effect of social professional connections on identity formations may be portrayed in a slightly subconscious manner as she becomes immersed and absorbed inside the institution.
González-Calvo and Barba (2013)	Show how a network of experiences and interpersonal interactions is used to (re)model teacher identity. 1 PE teacher	Class diaries; Life story	It was clear how an inexperienced teacher shattered the moulds acquired as a student and questioned certain assumptions by reflecting on his important role as an educator and an agent of social change. Identity is dynamic, mutable and more evident in new teachers.
Szczepanski (2013)	Compare how PE teachers are perceived by other subject teachers to PE teachers' self-assessment. 312 PE teachers; 600 teachers from other subjects	Questionnaire	PE teachers believe their organisational skills and activity dynamics to be their most important assets. They are well-known for their cheerful personality, clothing style, lifestyle, commitment to work and resourcefulness. Teachers from other subjects rated the same traits significantly lower than PE teachers, raising the question of whether PE teachers have a high opinion of themselves or teachers from other subjects undervalue them.
Batista et al. (2014)	Examine the motivations and feelings that prompt PE teachers to become cooperating teachers. 15 PE cooperating teachers	Semi-structured interviews	Cooperating teachers emphasise that accepting this role is a reason for professional development as well as an opportunity for self-development and they place high value on the personal relationships formed with PSTs. The cooperating teacher reconfigures his own identity through the process of mediation between his personal and social self with the PSTs and other school stakeholders.
Cunha et al. (2014)	Identify PSTs' situations of concern as they learn to be PE teachers and form their professional identity. 9 PE PST	Photographs; Videos; Focus groups	According to PSTs' reflections on their school placement, the PE teacher is someone who cares about planning duties, constantly pursues professional excellence and updates their knowledge, reflects on their practice, shares knowledge, is constantly evolving, builds their social identity and extends their school practice to extracurricular roles.
Gomes et al. (2014)	Examine how PE PSTs form their professional identity in their daily practices. 3 PE PSTs	Field notes; Video; Interviews	Working in a community of practice helps PSTs enhance their teaching skills. PSTs discussed the unpredictability of the educational environment and the necessity to adapt and implement new strategies. PSTs take on responsibility for their students' learning and how they may mould them as people, as a result, they experience anxiety, particularly at the start of their teaching practicum. This is subsequently overcome by increasing confidence. All mentioned reflection as a crucial step to construct their professional identity.
González-Calvo et al. (2014)	Investigate the importance of initial teacher training for professional identity formation. 1 PE teacher	Classroom logbooks; Life stories	Initial teacher education aids in the (re)constructions and (re)definition of the PST professional identity. During this period, the PST expands their pedagogical knowledge, equipping them to deliver higher-quality teaching. Different relationships impact the evolution of identity as the teacher grows as a person and as a professional. Initial teacher education helps build, develop and apply pedagogical knowledge, therefore determining teachers' professional identity.
Young and MacPhail (2014)	Identify how PE cooperating teachers establish and maintain their identity as supervisors of PSTs during school placement. 2 PE cooperating teachers	Semi-structured interviews	Cooperating teachers experience legitimate peripheral participation which results in different interactions with PSTs, university tutors and the initial teacher education institution, affecting their confidence in the role and their formation of professional identity within a community. The potential to be an agent of change and the impact on their own professional development were the two most important factors in taking the position. Positive motivation, previous supervisory experiences and support from PSTs and university tutors aided in the development of professional identity.

Banville (2015)	Study which central tasks associated with learning to teach do PE teachers use at the start of their teaching career. 21 PE teachers	Observations; Questionnaire; Interviews	PE teachers focused mostly on beginning repertory and the teaching setting, with little attention paid to the instructional program, classroom learning community and professional identity. The findings revealed a need for mentoring and ongoing support throughout the first three years of teaching.
Jiménez (2015)	Describe how a PE teacher grows as a professional, from initial teacher education through university teaching. 1 PE teacher	Life story	The PE teacher is motivated by social transformation and seeks a reflective approach focused on reinforcing the positive. It is critical to make the appropriate adjustments between the creation of oneself as a teacher and the educational ideals that support his teaching model. Lifelong learning is valued highly in order to broaden his reflective practice in accordance with his own identity.
Raymond (2016)	Investigate the personal and professional identities of Hong Kong primary school PE teachers. 9 PE teachers	Semi-structured interviews	Primary school PE teachers construct their personal and professional identities horizontally with colleagues and students and vertically with school administration. Different professional identities might emerge as a result of distinctive professional experiences. Their identity was also influenced by societal expectations of PE teachers.
Conceição and Neto (2017)	Understand how teachers establish their teaching identity at the start of their careers. 2 PE teachers	Semi-structured interviews; Observations; Field notes; Documents	Early career teachers' paths are not linear and are influenced by socioeconomic circumstances. A network of intricate relationships connects social, cultural, personal development and performance elements at the outsets of teaching. The network of relationships established with the school setting shapes the identity of early career teachers.
Gonçalves et al. (2017)	Understand the relationship between various teaching pathways and the processes of legitimisation of PE in different dimensions, as well as in teaching identity construction and reconstruction. 2 PE teachers	Semi-structured interviews	The status of substitute teacher is an impediment that prevents teachers from creating a story and can contribute to the career being crossed by an eternal restart, excluding them from the possibility of more effective participation in the formation of PE identity within the institutions, as well as the formations of teachers' own professional identity. Over time, the more experienced teacher was able to establish her teaching identity, identifying herself as the author and co-author of the history of PE.
Neto et al. (2017)	Examine how professional socialisation occurs in teacher education. 2 PE teachers	Interviews	Teachers construct their professional identity through socialisation throughout their careers. This is a dynamic process that combines knowledge learning and the development of a professional attitude that facilitates social interaction.
González-Calvo, Martínez-Álvarez, et al. (2018)	Recognise the roles that space and resources play in the professional development of teachers. 1 PE teacher	Class diaries	The spaces in which the class is held have an impact on the curricular units that are developed and the methods that are employed and the teacher must revise the locations in which he will teach the class. The school system is not viewed as an ally and the PE teacher prioritises his pupils' and his own safety over the enriching contents that might be achieved during the lesson.
González-Calvo, Hortigüela-Alcalá, et al. (2018)	To understand how the media and societal factors impact the body subjectives of prospective PE teachers. 8 PE PSTs	Semi-structured interviews; Images	PE PSTs understand that their body serves as both a work tool and a business card. A PE teachers' physique should be the ideal of health, physical condition, motor skill, beauty and youth. These are the distinguishing lines that differentiate them from other subject teachers and that these PSTs seek to embody. Because of its undeniable and unavoidable presence for the teacher, the body is crucial for personal and professional identity formation.
Nemiña (2018)	Understand how professional development improves for a group of PE teachers. 7 PE teachers	Field notes; Group interviews; Documents	The participants' relationships and learning are reinforced. Through debate and mutual reflection, the group shares and learns from common experiences while also consolidating a dynamic educational discourse. In accordance with the creation of a common professional identity, the community promotes shared social learning. Active and effective engagement in a community aids in the individual and social process of defining oneself as a teacher, aiding in the individual and social process of developing one's own teacher identity.
Cañabate et al. (2019)	Apply the rationality of cooperation and identity construction for PE PST. 63 PE PSTs 288 Primary school students	Narratives; Focus groups	Participating in cooperative learning via various instructional approaches resulted in identity in practice. PSTs may use reflective practice to build and alter their professional identities. PSTs who engage in individual and group reflection may utilise interpretative and critical thinking abilities to evaluate their own work.
Giles et al. (2019)	Identify the emotions expressed in students' speeches and experiences that have an impact on their professional development. 41 PE PSTs	Narratives; Reflexive diary	Positive feelings are prevalent, such as the joy of feeling valued by children while being welcomed and respected by other teachers. The negative emotions become good by assisting individuals in developing their professional identity via introspection and self-criticism, although they can lead to anxiety.
Sánchez-Hernández et al. (2019)	Analyse and comprehend how female PE teachers build, rebuild, (re)produce and modify their discourses, expectations and practices in PE classes 3 PE teachers	Semi-structured interview	There is a need for educational transformation that goes beyond individual acts and involves rebuilding PE teachers' professional identities and conventional practices. It is critical to encourage change, address sexual inequity and provide a just and comprehensive education for all. The change of unconscious sexist practices requires a rigorous process of reflection.
Anversa et al. (2020)	Examine the role of teaching practicum in the formation of professional identity as seen by PSTs 140 PE PSTs	Questionnaire	Although the teaching practicum provides insight into professional performance, it lacks activities that foster professional independence, interaction with professional reality and a sense of social belonging. Prior experiences (such as courses, participation in congresses and other scientific activities) might be related to the creation of a professional identity. Paid employment that is not directly connected to initial teacher education might conflict with the contextual scope of professional representation of PSTs.
Castañeda-Vázquez et al. (2020)	Determine the level of enthusiasm in teaching and the kind of motivations that drive PE Master students 217 PE PSTs	Questionnaire	The PSTs have demonstrated an inherent and vocational interest in teaching rather than an extrinsic or pragmatic motivation. PSTs consider that obtaining a solid initial teacher education is essential for effective profession practice and contributing to quality education. Women are more likely to choose a teaching profession because they see it as a priority career outlet.

González-Calvo et al. (2020)	Investigate prospective PE teachers' experiences and beliefs regarding PE that may influence their teaching approaches 24 PE PSTs	Questionnaire; Semi-structured interview; Life story	It is critical to consider past experiences and ideas that PSTs bring to the teaching practicum, since there is a strong link between their prior PE experience and the pedagogy they wish to implement. Sport and physical health continue to have an impact on teacher identities, but in the eyes of some PSTs, critical thinking and gender equality are emerging as goals for PE.
Nemiña (2020)	Investigate PSTs' PE class experiences and memories 60 PE PSTs	Life stories	The PSTs maintain a pleasant and positive memory of their PE classes, valuing the informal and relaxed atmosphere, the opportunities of interaction with their peers and the teacher and the spaces and resources. Negative experiences with discrimination based on gender, motor skills, bodily identity and performance and ability appraisal also emerge. Teachers' personal experiences as students are key components of their professional identity as teachers.
Pérez-Pueyo et al. (2020)	Examine PSTs 'perspectives on Attitudinal Style as a pedagogical model and its application in their classroom 12 PE PSTs	Reflective group diary; Discussion groups	PSTs hailed this instructional style as ideal for the formation of their professional identity. The transferability of the social, motivational, self-concept and self-esteem components to the school was particularly valued.

Discussion

The results presented in Table 1 show some variety of subjects who participated in the studies analysed, such as inservice PE teachers, preservice teachers, cooperating teachers, students, headmasters and teachers from other subjects. Although there is some research developed with key actors in the physical education setting, it appears that PE teachers and PE PSTs are the primary focus of research regarding professional identity in physical education, and those key actors are never the primary focus of the investigations.

Since the primary emphasis of the studies was on PE teachers and PE PSTs, and keeping in mind that PE teachers and PE PSTs are at various stages of their educational practice which may result in distinct impacts on their professional identity, we will first discuss the studies that focus on PE teachers followed by the studies that focus on PSTs. In addition, information on cooperating teachers, students and headmasters will be considered in the analysis.

Despite the diversity observed, the semi-structured interview is the most commonly used research instrument, followed by questionnaires, participant reflection (through life stories, narratives, class diaries and reflexive diaries), field notes, observations and focus groups. The instruments employed demonstrate a strong qualitative preponderance in the researchers' study design. It is also clear that multiple instruments are being used simultaneously, emphasising the necessity to triangulate data while researching professional identity in the field of physical education. If we regard professional identity to be a dynamic process (Banville, 2015; Cunha et al., 2014; Gomes et al., 2014; González-Calvo et al., 2014); we may anticipate data to come from a variety of sources.

The analysis of the articles found led to cluster concepts identified across the research that contribute to professional identity in physical education (Figure 2) such as *relationships* (in 5 studies), *identity negotiation* (in 5 studies), *identity transformation* (in 3 studies), *lifelong learning* (in 2 studies), *peer perception* (in 1 study), *class space* (in 1 study), *teaching practicum experience* (in 4 studies), *prior experiences* (in 2 studies), *community of practice* (in 3 studies) and the teachers' *body* (in 1 study). However, certain similarities across the research were found, making categorisation challenging. For instance, Anversa et al. (2020), which was placed in the *teaching practicum experience* category, also seemed to partially fall within the category of *prior experiences*. Hence, it was determined that the primary focuses of each study would serve as the foundation for categorisation. Given that the study in the aforementioned example has *teaching practicum experience* as its primary focus rather than *prior experiences*, this study was categorised under *teaching practicum experiences*.

These contributions to professional identity in physical education will be discussed further in the next section.

Professional identity and physical education teachers

Relationships

The *relationships* that teachers establish within their acting context is linked to the teachers' professional identity formation (Conceição & Neto, 2017; Nemiña, 2018; Neto et al., 2017; Rodrigues et al., 2012; Young & MacPhail, 2014). Teachers' identity formation is connected to the social processes of belonging to a group (Rodrigues et al., 2012); the network of interactions formed with the school setting (Conceição & Neto, 2017); the individuals and institutions (Neto et al., 2017); and the relationships formed within the community (Nemiña, 2018); such as PSTs and university tutors (Young & MacPhail, 2012).

In the research developed by Rodrigues et al. (2012) the authors conclude that teachers' professional identity formation is linked to the social processes of being part of a group, as professional relationships influenced the participants' way of being a teacher. The social roles that each subject adopts inside the institution and the socio-professional relationships are associated with the process of developing identities by reflecting places and representations about the subjects who are placed in the
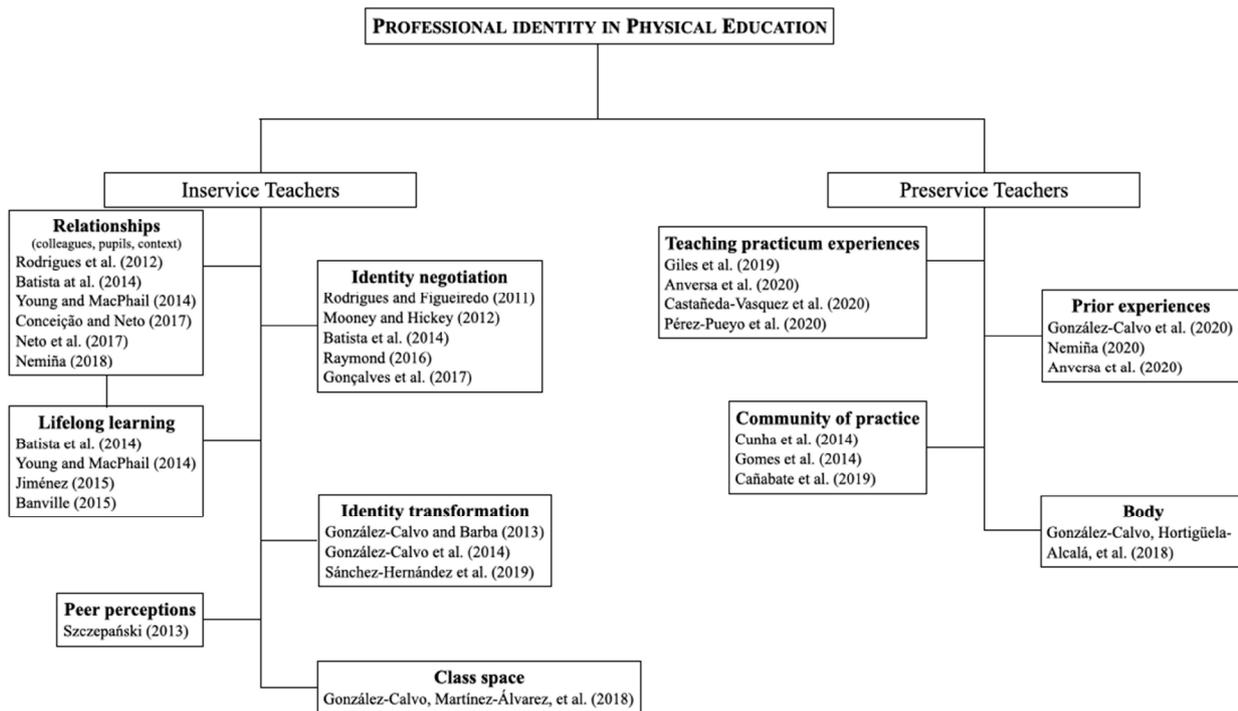
Figure 2. **Literature Map**

same space but have distinct duties to fulfil. This was achieved by the teachers' reflections, which enabled the participant to perceive themselves as a subject who builds their identity integrated in a socio-professional context.

Young and MacPhail (2014) conducted research to determine how PE cooperating teachers build and sustain their professional identities as cooperating teachers. The participants showed two motives for becoming a cooperating teacher: to be an agent of change and to benefit from the role's influence on their professional development. A variety of factors influenced their capacity to create meaningful professional identities as successful supervisors, including a broad range of learning supervisory experiences, positive motivations and dispositions and the degree of support received in their relationships with the PSTs and the university tutors. The relationships fostered learning through the cooperating teachers' willingness to learn from PSTs and the recognition of the value of multi-directional learning. In Batista et al. (2014) study (also with cooperating teachers), the subjects acknowledged the relevance of relationships in reconfiguring their professional identity. The researchers stated that the cooperating teachers' progress was hampered by a lack of communication with the initial teacher education institution and university tutors, detached PSTs and cooperating teachers' lack of confidence in their ability.

The process of socialisation with the learning context is based on collective interests and demonstrates the search for the teachers' space (Conceição & Neto, 2017); and goes

beyond school activities. The early career teachers' identity formation transcends the knowledge of movements that emphasise school culture and relate to educational practices in the teaching and learning situations. The research conducted by Conceição and Neto (2017) concludes that the beginning of the teaching career is still visible as a phenomena produced by a web of interactions that link social, cultural, personal development and performing aspects. Collective reflections, informal debates and creations with more experienced colleagues help to satisfy training demands at the start of the teaching career leading the early career teacher to shape their identity by the network of interactions created with the school setting (Conceição & Neto, 2017).

For Neto et al. (2017) the focus was on how professional socialisation occurs as a result of teacher education since teachers' socialisation entails a process of identity formation and knowledge creation inside the workspace itself. The authors show in their results that teachers construct their professional identity via a process of multiple socialisation, valuing social interactions. This process of identity formation involves transactions between individuals and the institutions.

Using a professional development activity, Nemiña (2018) concluded that learning communities reinforce teachers' professional identity. The participation in a community is a means to overcome the isolation of the teaching profession, enhance practice and foster a common understanding of what school and education

entails. As stated in the introduction, PE teachers experience physical and intellectual isolation (Curtner-Smith, 2001; Gaudreault et al., 2016a; Gaudreault et al., 2016b; Green, 2008; Raymond, 2016) and frequently believe that their contributions to the overall goal of their educational institutions are less significant (Gaudreault et al., 2016a).

Social interaction has a goal of generating a common discourse, a type of collective understanding and a professional identity beyond the development of connections and social interactions. The results demonstrate how participants' relationships and learning are reinforced, resulting in a group that shares and learns from similar experiences.

The construction of professional identity is a complicated process characterised by a diverse collection of personal, professional, environmental and social representations, all of which are in continual contact and frequently in contradiction. Active and successful engagement in a community aids in the definition of oneself as a teacher, helping to recognise themselves and be recognised by their colleagues, supporting the individual and social process of developing their own teaching identity.

Identity negotiation

Through the research from Rodrigues and Figueiredo (2011), Mooney and Hickey (2012), Batista et al. (2014), Raymond (2016) and Gonçalves et al. (2017) it is possible to observe that teachers experience *identity negotiation*. The hierarchy of different teaching roles (Gonçalves et al., 2017); gender hegemony of the school (Mooney & Hickey, 2012); the mediation between the personal and the social self (Batista et al., 2014); and the duality between the identity attributed by others and the identity of the individual (Rodrigues & Figueiredo, 2011); are all factors that influence identity negotiation horizontally and vertically (Raymond, 2016).

The differences in the subjects' relationships, connections and interactions can lead to a hierarchy of roles connected with the recognition and legitimacy of various professionals within the workplace, which is therefore an influencing factor in the formation of the teaching identity (Rodrigues & Figueiredo, 2011). This is consistent with Hendry (1975), who claims that the distinct roles in the teaching profession causes PE teachers to experience role ambiguity. The relational processes are essential in the teachers' identity formation since they reflect multiple forms of teacher representation, therefore contributing to the (re)construction of identities. The research developed by Rodrigues and Figueiredo (2011) identified the presence of two identities — one claimed by the teacher and one assigned to the teacher by others. The articulation of

these two ideas is crucial to the identity creation process. Furthermore, this articulation can indicate a process of continuity between the two kinds of representation and identification, as well as a discontinuity when one's identity varies from the identity of another. Identity dispute creates room for identity strategies, which attempt to narrow the gap between the identities ascribed by others and the identities represented by the individual leading to the presence of identity negotiation (Rodrigues & Figueiredo, 2011).

The work of Mooney and Hickey (2012) investigated how two female PE teachers in an all-boys' school negotiate their professional identities in an environment where they hold positions that are peripheral to the school's gendered hegemony. Teacher educators' masculinities and femininities, like professional identities, are constantly created via struggle and affirmation (Dowling, 2006). Hence, when a number of marginalising variables converge, such as teaching a subject of low status and being a woman in a patriarchal educational system, the dynamics of the professional socialisation process change (Sparkes et al., 1993).

The creation of a coherent and stable professional identity, according to the study from Mooney and Hickey (2012) is heavily dependent on the discourse-power relations that pervade the social and cultural settings in which the teacher works. The prevailing discourses of masculine hegemony proved to have a considerable impact on female teachers' professional identity negotiation. This is in line with previous research in the PE context. Within a patriarchal system, a male PE teacher is considerably more likely than a female PE teacher to develop and reconstruct a professional identity and career trajectory, as well as to combat the unfavourable stereotype associated with the subject (Sparkes et al., 1993). The research from Mooney and Hickey (2012) showed that the participants' perceptions of what constituted 'successful' professional identity at an all-boys' school were influenced by their identity as mediated and judged by their male colleagues. Their findings also indicate examples of 'self-work' when evaluating the techniques that the female participants used to resolve conflicts connected with their embodied femininity being positioned outside the masculine hegemony. The setting of an all-boys' school has a deep and nuanced impact on how female physical educators view themselves as professionals.

The researchers Batista et al. (2014) examined the reasons and feelings that motivate PE teachers to be cooperating teachers in order to better understand the cooperating teachers' professional identity. Throughout the supervising process, the professional identity of cooperating teachers evolves as a consequence of either

the reconceptualisation of new information or the lived experiences, positive or negative, in the relationship with the PSTs. The participants showed that the potential for personal and professional growth and increasing their teaching expertise motivated them to take this job, which was also evident in Young and MacPhail's (2014) research. The reasons that motivated them to quit were connected to reduced time for mentoring or being dismissed. Most cooperating teachers emphasise their professional experience and teaching experience as the most important prerequisite for this mentoring position and place a high value on the connections built with the PSTs. It is feasible to deduce that the exercise of the supervisor role impacts the way the cooperating teacher is in the profession owing to the challenges it poses, the restrictions and constraints encountered and the established relationships. As a result, the cooperating teacher reconfigures their professional identity through a process of mediation between the personal self and the social self with the PSTs and those participating in the teaching practicum (faculty adviser, other cooperating teachers, among others).

Raymond (2016) performed research on the personal and professional identities of Hong Kong primary school PE teachers. The participants negotiate their identity both horizontally (through interactions with colleagues) and vertically (with senior management). Identity was constantly being formed and refined via social interactions with others and various professional identities may have emerged as a result of diverse professional experiences. Identity, according to the author, was also actively connected to views toward PE teachers and societal expectations, perpetuating the idea that PE is a marginalised subject in schools (Hendry, 1975; Kougioumtzis et al., 2011) and it impacts PE teachers professional identity.

Identity negotiation was also present in the article from Gonçalves et al. (2017) in which the researchers interviewed two teachers with different teaching paths. The substitute teacher, a teacher in the process of establishing her teaching identity, encounters an impediment that stops her from making history and recognising herself in that tale. The effective teacher, on the other hand, had the option of gradually developing her own teacher identity, identifying herself as the author and co-author of the history of PE in that school. The substitute teacher experiences a sort of continual recommencement that differs from the space inhabited by the effective teacher at the same institution, because this place is manifested over a career, crossing multiple routes that occur in time. On the contrary, the circumstance of substitute teacher might lead to the career being spanned by an endless restart, excluding her from the possibility

of more effective participation in the constructions of physical educations' identity within the institution, in the organisation of its spaces and in the construction of her own professional identity.

Identity transformation

This brings us to the next theme found, *identity transformation*, which was present in the papers by González-Calvo and Barba (2013), González-Calvo et al. (2014) and Sánchez-Hernández et al. (2019). The reconstruction of professional identity through reflection (González-Calvo & Barba, 2013); the redefinition of professional identity after initial teacher education (González-Calvo et al., 2014); and the process of reconstructing female teachers' professional identities (Sánchez-Hernández et al., 2019); were all examples of this identity transformation.

González-Calvo and Barba (2013) conducted an investigation to demonstrate through autobiographical reflection, how teacher identity is remodelled around experiences and relationships and they concluded that there was an evident construction and reconstruction of professional identity, personal and professional growth. The authors emphasise that identity is fluid, dynamic and mutable.

González-Calvo et al. (2014) conducted a case study to investigate the influence of initial training on the development of teaching professional identity of an inservice teacher. The teacher believes to have received initial training that is appropriate for the teaching reality. The initial teacher education allowed them to (re)build and (re)fine their professional identity, allowing them to be better equipped to deliver higher-quality teaching. The authors conclude that identity growth is affected by a continual interaction with building/rebuilding and professional exchange. Data suggests that the development of communities of practice that connect teachers to proactively discuss PE objectives and strategies to achieve them can help lessen isolation while promoting the development of teachers' skills, creativity and professional identities (O'Sullivan, 2008). According to González-Calvo et al. (2014) it is important to recognise that one's professional identity is never fully realised since one is always evolving as a person and therefore, as a teacher.

Sánchez-Hernández et al. (2019) studied how female PE teachers construct, reconstruct, reproduce and modify their discourses, expectations and practices in physical education classrooms. The authors found that there is a direct relationship between a sporty history and socialisation. The professional identity of these teachers are reflected in their everyday activities, which include educational acts established despite gender prejudice.

The investigators conclude that sexist beliefs are deeply ingrained and that this transformation necessitates intense monitoring of the process of constant relating reflection and teaching practice, as well as the abolition of traditional fundamentals of physical education and teachers' professional identity, in order to correct sexual prejudice and provide a more just and enriching education for boys and girls.

Lifelong learning

It was visible through the researches of Banville (2015) and Jiménez (2015) the significance of *lifelong learning* for professional development, as it enables teachers to explore new ways of engaging in reflective professional practice that is compatible with their personal identity. Banville (2015) sought to investigate which tasks were utilised by PE teachers in the early stages of their careers, as well as if their demands changed from the first to the second year of teaching. The researcher concluded that newly qualified teachers need time to better acclimate to their new position and identity. It was also evident in Banville's (2015) study the requirement for mentorship during the induction years, which would enhance these teachers' confidence. According to the study, once the teaching practicum is over, the efficacy of the novice PE teacher decreases, which might be attributed to a loss of support. However, their sense of effectiveness increased from the first to the second year, indicating that experience helped them restore confidence and strengthen their professional identity.

Jiménez (2015) completed a case study that intended to describe how a PE teacher evolves professionally, beginning with their initial teacher education and ending with their experience teaching at a university. The author stated that the newly qualified teacher approaches a model of a reflective teacher, driven by social transformation, which alters their pedagogical approach to a more coherent teaching practice, based on the reflections discovered in the participant's autobiographical life experiences. Professional growth, teacher support, working on various educational initiatives and pedagogical debates were critical for their professional development.

Peer perception

Through the research from Szczepański (2013) it is possible to observe how *peer perception* influences PE teachers' professional identity. Szczepański (2013) used questionnaires to verify the opinions on and of PE teachers, under the idea that these teachers can be distinguished from teachers of other subjects. The author concludes that PE teachers value their organisational and communication skills, activity dynamics and are renowned for their cheerful personality, style, commitment to work, courage, lifestyle and resourcefulness. The teachers from other subjects value the same aspects but estimate it much lower than PE teachers, which could mean that either PE teachers have high opinions of themselves or teachers from other subjects understate PE teachers' appraisals. This is one indicator of the marginality status of PE in the school system. The status of second class subject (Banville, 2015; Hendry, 1975; Kougioumtzis et al., 2011 Raymond, 2016) enforced on physical education (and therefore on PE teachers) and unfavourable social perceptions can prompt PE teachers to feel devalued (Raymond, 2016; Simonton et al., 2021). As a result, peer perception is an underlying factor in teachers' professional identity formation.

Class space

We have observed a variety of effects on teachers' professional identity, however the case of PE is particularly intriguing due to its own distinct school and *class context*. Physical isolation from coworkers is fostered by the gymnasium's physical location (Curtner-Smith, 2001), which is typically at one end of the building or in a separate building altogether. Thus, González-Calvo, Martínez-Álvarez, et al. (2018) sought to comprehend the connections between space and materials in teacher professional development. The authors found that the location of the class impacts which work units the novice teacher may teach, therefore determining which pedagogical and educational techniques to employ. This conduces to the continual modification of lesson plans in order to promote the teaching-learning process. The degradation of the spaces not only makes professional work harder, but may also lead to dissatisfaction with the chosen career (González-Calvo, Martínez-Álvarez, et al., 2018).

Professional identity and physical education preservice teachers

Teaching practicum experiences

Physical education preservice teachers develop their professional identity mostly via *teaching practicum experiences* (Anversa et al., 2020; Castañeda-Vázquez et al., 2020; Giles et al., 2019; Pérez-Pueyo et al., 2020). Emotions (positive, negative, or neutral) (Giles et al., 2019); motivations for entering the profession (Castañeda-Vázquez et al., 2020); lack of professional independence (Anversa et al., 2020); and using the Attitudinal Style method (Pérez-Pueyo et al., 2020); all have a direct impact on the formation of professional identity of PSTs.

Examining the emotions felt by PE PSTs and their impact on the development of their professional identity, Giles et

al. (2019) discovered that positive emotions predominate the participants' answers. In particular, it emphasises the delight of feeling appreciated and loved by the children while also feeling welcomed and respected by the teachers. It has been shown that negative emotions turn positive and, as a result, allow PSTs to build their professional identity via reflection and self-criticism. The fear of failure and not being able to rise to the occasion remains latent, which might cause anxiety. Anger manifests itself when PSTs believe they have lost control of classroom management. There are several interactions that have a direct influence on PSTs when performing the teaching role, emotions being one of them and having a direct impact on social learning and the formation of professional identity (Giles et al., 2019).

Anversa et al. (2020) examined the role of teaching practicum in the formation of professional identity as seen by PSTs. The teaching practicum provided insight into areas of professional performance within the extent of the PSTs' expertise, knowledge and intervention. It lacks, however, a unique educational approach to the activities that promote professional independence, their connections to professional reality and a sense of social belonging. The period of transition between leaving school and entering the labor market is critical in determining one's independence and professional identity. While the PSTs are devoted to educational activities such as courses and participation in congresses and other scientific events, the formation of professional identity might be connected to prior experiences. Performing other remunerated tasks that are not directly connected to initial teacher education, on the other hand, might have an impact on professional representation, which would enhance the bonds of professional socialisation.

Teachers' professional identity is determined by the motivations for entering the profession, as well as changes in the attitudes and beliefs of prospective teachers, which was the subject of Castañeda-Vázquez et al. (2020) research. The findings from the questionnaire about the PSTs' ideas demonstrated a prevailing vocational tendency, particularly among women, with pedagogy, didactic and teaching programming expertise, as well as the acquisition of abilities to inspire students to study, being extremely significant. The PSTs interest is more intrinsic and vocational than extrinsic or pragmatic.

Initial teacher education, particularly the teaching practicum experience, is critical for creating prospective teachers' professional identities over the course of the PSTs' careers (Pérez-Pueyo et al., 2020). The researchers Pérez-Pueyo et al. (2020) investigated PSTs' perceptions on Attitudinal Style as a pedagogical approach and its use in the classroom. This paradigm has proven to be effective

in the development of professional identity and PSTs appreciate it as a model that has positioned them to tackle PE in certain ways. PSTs' saw this model as perfect for the development of their professional identity, with social, motivational and self-concept components being the most important in terms of transferability to the school. It has aided them in reflecting as professionals on the sort of PE they believe is required to teach. The participants emphasised the social interactions formed throughout the course, highlighting how this helped to improve their self-concept and self-esteem. The future PE teachers highly respect the attitudinal style, noting its rigour in topic preparation and the vast quantity of methodological tools it provides.

Prior experiences

This research also showed that *prior experiences* were a way of developing PSTs' professional identity (González-Calvo et al., 2020; Nemiña, 2020). With this in mind, González-Calvo et al. (2020) conducted a study to explore and deepen Spanish PSTs' prior thoughts and beliefs, as well as how it affected the formation of PSTs teacher identity. The authors identified four major impacts on the development of a physical education professional teacher identity: a strong sports identity, the notion that PE should function as a health intervention, an emphasis on pedagogy and a critical attitude to make a difference in society. Teachers' identities, shaped by their earlier experiences and reinforced by attitudes about teaching and the aims of PE, are inextricably linked to their teaching and pedagogical practice. The results point to a strong link between prior PE experiences and the pedagogy PSTs want to use in the future. The findings show that sport and physical fitness continue to have an impact on teacher identities and they also imply that critical thinking and gender equality are emerging as goals for PE in the minds of some PSTs. Seeing that new ideas and approaches introduced must compete with beliefs and theories developed subtly and implicitly in their own history as students, the findings indicate that it is critical to take into account the prior experiences and beliefs that PSTs bring to initial teacher education programs.

Research using the Occupational Socialisation Theory (Lawson, 1986) explains how the acculturation (pre-training phase), professional socialisation (training phase), and occupational socialisation (workplace phase) has an impact on of PE teachers' identities (Richards et al., 2014). Therefore, considering that theory of teacher socialisation depicts professional identity formation as a process that begins in school as a student, progresses through initial teacher education and lasts throughout the teachers' career, Nemiña's (2020) research sought to investigate

PSTs' experiences and recollections of PE classes, as their experiences as students are important components of their identities as educators. The assessment of their speeches reveals three categories that dominate the PSTs' statements: positive experiences, negative recollections and teachers. According to the data, PSTs have generally pleasant and positive memories of their PE classes, with the aspects that they value the most being the informative and relaxed atmosphere, the opportunities for relationship and interaction with their classmates and the teacher and the spaces and materials close to their playful proposals. Negative experiences also arise and they tend to concentrate around discrimination based on gender, motor ability, physical identity and performance and ability assessments. It is vital that PSTs' educators consider these experiences and use them to promote a vision of PE that is more aligned with inclusive, participative and democratic principles that support the creation of positive identities rather than conventional and dominant norms.

It is also worth recalling the previous study by Anversa et al. (2020), which examined how the construction of professional identity in PE may be linked to prior experiences and a sporting background.

Community of practice

The studies conducted by Cunha et al. (2014), Gomes et al. (2014) and Cañabate et al. (2019) established that a *community of practice* has an impact on the professional identity of PSTs. Cunha et al. (2014) conducted a study to uncover PSTs' concerns while preparing to be a PE teacher and forming their professional identity. The PE PSTs' discussions of their daily activities revealed how they reshaped their professional identity throughout their teaching practicum. Several human components of their teaching practicum, such as their classmates, cooperating teacher, university tutor, PE colleagues and pupils, were given significance by the participants. The PSTs noted how essential it was for them to be welcomed as a member of a group and they saw the PE teacher as caring about planning tasks, striving for professional excellence, reflecting on their practice and building their identity with others. It was also noted that extracurricular engagement increased the participants' chances of being socially acknowledged by the teaching community and of developing a sense of mission.

Gomes et al. (2014) investigated how PE PSTs construct their professional identity through their everyday activities. The study grew out of the assumption that professional identity is formed via interactions with others. The researchers concluded from field notes, videotapes and interviews that the integration of PSTs with students (in and out of the classroom) and maintaining a good

and healthy relationship helps to develop a good learning environment and is seen as an important feature of what it means to be a teacher. PSTs were defined as those who take responsibility for their students' learning processes, do research and reflect on their teaching practices in order to enhance the teaching and learning process and their professional identity as teachers. The cooperating teacher was also highlighted here as playing a crucial part in steering this entire process.

Cañabate et al. (2019) research had the purpose of applying the rationality of cooperation and identity construction for PSTs. The findings revealed that activating cooperative learning based on non-structured instructional approaches produced identity in practice, that PSTs can construct and transform their professional identities through reflective practice and that PSTs can activate interpretation and critical competencies evaluation of their practice when engaged in individual and community reflection. The authors revealed how PSTs expressed their professional identity by reflecting on instructional teaching approaches and maximise the intake of competencies such as problem-solving, critical thinking through continuous self-evaluation of practices and communication through didactic instructive approaches. According to Cañabate et al. (2019), cooperative physical challenge techniques aided PSTs in recognising aspects of their professional identity, as well as developing, understanding and self-assessing professional practice experiences that subsequently cultivated personal critical professional competence.

Body

We have seen a variety of consequences on PSTs' professional identity and the case of PE is particularly noteworthy due to its requirement to portray health habits and a healthy body. Since the repercussions of physical and physiological degeneration are particularly substantial for PE teachers, age becomes a determining element in interpreting development of professional identity (Silva & Lüdorf, 2012). Therefore, González-Calvo, Hortigüela-Alcalá, et al. (2018) investigated perceptions of PE PSTs by determining how media and sociocultural factors influenced PE teachers' bodily subjectivities and the impact the *body* has on personal and professional identity formation. The PSTs revealed through semi-structured interviews that they are aware that their body is one of their work tools and their most visible business card and that having a slim and athletic body is seen as a sign of health, fitness, beauty and youth (aspects that distinguish them from other subject teachers) and increases one's confidence, thus influencing their professional life. All of this led González-Calvo, Hortigüela-Alcalá, et al. (2018) to reiterate the relevance of the body in the development of

prospective teachers' personal and professional identities, because it is an undeniable and unavoidable presence for the educator.

To bring the results discussion to a close, the majority of the studies highlighted that reflection on practice and reflective thinking are crucial traits for the formation of a PE teachers' professional identity (Cañabate et al., 2019; Giles et al., 2019; Gomes et al., 2014; Rodrigues et al., 2012); and it enables the teacher to (re)define their own style of knowing how their teaching identity is being developed (Gomes et al., 2014; González-Calvo & Barba, 2013); attempting to approach a reflective teaching model (Jiménez, 2015). As mentioned in the introduction, PE teachers struggle to find their professional identities as a result of the subject's marginalised status in many school settings. This results in feelings of isolation among PE teachers which can negatively affect how one views what it means to be a teacher. Therefore, reflecting on the formation of teaching identity involves an examination of institutional, administrative, collective and personal relationships (Rodrigues & Figueiredo, 2011; Rodrigues et al., 2012). Collective reflections, informal debates and collaborations with coworkers are beneficial (Conceição & Neto, 2017; Nemiña, 2018) as it lessens PE isolation. The reflection is sometimes driven by a desire to be recognised and acknowledged by male peers as a respected professional (Mooney & Hickey, 2012) (indicating that female PE teachers still struggle for affirmation of their gendered identity); demanding a constant interplay between reflection and practice (Anversa et al., 2020; Sánchez-Hernández et al., 2019) assisting in rethinking views while fostering the construction of professional identity (Nemiña, 2020).

Conclusion

Professional identity is, as we have seen, an exceedingly hard issue to tackle due to the numerous key actors and influences. The analysis of the 27 articles reveals the complexities of what professional identity is. We may divide the themes given in the articles into two categories: those linked to the key actors and influences on PE teachers' professional identity, and those related to PE preservice teachers.

The themes that fuel teachers' professional identity formation are the relationships established (within their acting context), identity negotiation and consequent transformation, the professions' lifelong learning, peer perception and the class context. The themes that shape PSTs' professional identity formation are the teaching practicum experience, their prior experiences, the involvement in a community of practice, and the teachers' body.

Professional identity formation is a complex process defined by a diversified set of personal, professional, environmental and social representations that interact and harmonise in real time. Therefore, it is critical that teachers recognise the network of intervening and recurring mechanisms that underpin their activity.

The most significant limitation of this study is the lack of open access publications. There may be other research that is not openly available and written in languages other than English, Spanish and Portuguese that was not included in the current study. Only a few research relied on observations and written reflections. Using observations and reflexive diaries as data gathering strategy allows academics to explore how changes in identity impact teaching practices, obtaining more concrete results from the identity formation process.

Considering that practically all of this research was conducted in retrospect, longitudinal studies are necessary to illustrate how one's PE identity changes over the course of a career. Further research should be done on how identities change when teachers begin their occupational socialisation, emphasising the importance of addressing identity in teacher education and the duty of teacher education programs to provide opportunity for the exploration of new and evolving teacher identities.

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The authors report there are no competing interests to declare.

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References

Anversa, A., Souza, V., Both, J., & de Oliveira, A. (2020). Contributions perceived by students about the curriculum stage in the constitution of professional identity. *Journal of Physical Education (Maringa), 31*(1), 1–12. https://doi.org/10.4025/jphyseduc.v31i1.3162

Banville, D. (2015). Novice physical education teachers learning to teach. *Journal of Teaching in Physical Education, 34*(2), 259–277. https://doi.org/10.1123/jtpe.2013-0129

Batista, P., Silveira, G., & Pereira, A. (2014). Ser professor cooperante em Educação Física: Razões e sentidos. *Revista Portuguesa de Ciências Do Desporto, 14*(S1A), 353–375. https://doi.org/10.5628/rpcd.14.s1a.353

Beauchamp, C., & Thomas, L. (2009). Understanding teacher identity: an overview of issues in the literature and implications for teacher education. *Cambridge Journal of Education*, *39*(2), 175–189. https://doi.org/10.1080/03057640902902252

Beijaard, D., Meijer, P., & Verloop, N. (2004). Reconsidering research on teachers' professional identity. *Teaching and Teacher Education, 20*(2), 107–128. https://doi.org/10.1016/j.tate.2003.07.001

Bolívar, A. (2007). The Initial Training of Secondary School Teachers and their Professional Identity. *ESE: Estudios sobre educación, 12*, 13-30.

Cañabate, D., Serra, T., Bubnys, R., & Colomer, J. (2019). Pre-service teachers' reflections on cooperative learning: Instructional approaches and identity construction. *Sustainability, 11*(21), 1–18. https://doi.org/10.3390/su11215970

Castañeda-Vázquez, C., Pérez-Cortés, A. J., Valdivia-Moral, P. A., & Zurita-Ortega, F. (2020). Motives for becoming a teacher and future physical education teacher's professional identity. Analysis in the University Master's Degrees of Seville, Granada and Jaen (Spain). *Revista Interuniversitaria de Formacion Del Profesorado, 34*(2), 299–314. https://doi.org/10.47553/rifop.v34i2.77534

Conceição, V., & Neto, V. (2017). A cultura escolar sob o olhar do paradigma da complexidade: Um estudo etnográfico sobre a construção da identidade docente de professores de Educação Física no início da docência. *Movimento, 23*(3), 827–840. https://doi.org/10.22456/1982-8918.55916

Cunha, M., Batista, P., & Graça, A. (2014). Pre-Service Physical Education teachers' discourses on learning how to become a teacher: [Re]constructing a professional identity based on visual evidence. *The Open Sports Sciences Journal, 7*(1), 141–171. https://doi.org/10.2174/1875399x01407010141

Day, C., & Kington, A. (2008). Identity, well-being and effectiveness: the emotional contexts of teaching. *Pedagogy, Culture & Society*, *16*(1), 7–23. https://doi.org/10.1080/14681360701877743

Dixon-Woods, M., Agarwal, S., Jones, D., Young, B., & Sutton, A. (2005). Synthesising qualitative and quantitative evidence: A review of possible methods. *Journal of Health Services Research & Policy, 10*(1), 45–53.

Dowling, F. (2006). Physical education teacher educators' professional identities, continuing professional development and the issue of gender equality. *Physical Education & Sport Pedagogy*, *11*(3), 247–263. https://doi.org/10.1080/17408980600986306

Flores, M. A., & Day, C. (2006). Contexts which shape and reshape new teachers' identities: A multi-perspective study. *Teaching and Teacher Education, 22*(2), 219–232. https://doi.org/10.1016/j.tate.2005.09.002

Gaudreault, K., Richards, K., & Woods, A. (2016a). Initial validation of the Physical Education Marginalization and Isolation Survey (PE-MAIS). *Measurement in Physical Education and Exercise Science*. https://doi.org/10.1080/1091367X.2016.1257994

Gaudreault, K., Richards, K, & Woods, A. (2016b). Understanding the perceived mattering of physical education teachers. *Sport, Education and Society*. https://doi.org/10.1080/13573322.2016.1271317

Girela, F., Cervantes, C., & García, E. (2019). The emotions behind the teaching-learning process. The experiences of future teachers from a critical service-learning pedagogy. *Publicaciones de La Facultad de Educacion y Humanidades Del Campus de Melilla, 49*(4), 69–87. https://doi.org/10.30827/publicaciones.v49i4.11729

Gomes, P., Alves, M., Queirós, P., & Batista, P. (2014). Learning through practice: A study with Physical Education pre-service teachers. *The Open Sports Sciences Journal, 7*(1), 121–132. https://doi.org/10.2174/1875399x01407010121

Gonçalves, D., Richter, A., & Bassani, J. (2017). História(s) da docência na Educação Física da educação infantil da rede municipal de ensino de florianópolis. *Revista Brasileira de Ciencias Do Esporte, 39*(4), 362–370. https://doi.org/10.1016/j.rbce.2017.02.015

González-Calvo, G., Barbero-González, J., Bores-Calle, N., & Martínez-Álvarez, L. (2014). (Re)construction of a teacher's professional identity from his initial training: Autobiographical narration. *The Open Sports Sciences Journal, 7*(1), 113–120. https://doi.org/10.2174/1875399x01407010113

González-Calvo, G., & Barba, J. (2013). La perspectiva autobiográfica de un docente novel sobre los aprendizajes de Educación Física en diferentes niveles educativos. *Cultura, Ciencia y Deporte, 8(*24), 171–181.

González-Calvo, G., Hortigüela-Alcalá, D., Barba-Martín, R., & García, D. B. (2018). La foto-elicitación como instrumento para profundizar en la construcción de las subjetividades corporales de maestros de Educación Física en formación. *Movimento, 24(*4), 1249–1264. https://doi.org/https://doi.org/10.22456/1982-8918.82385

González-Calvo, G., Gerdin, G., Philpot, R., & Hortigüela-Alcalá, D. (2020). Wanting to become PE teachers in Spain: connections between previous experiences and particular beliefs about school physical education and the development of professional teacher identities. *Sport, Education and Society*, 1–14. https://doi.org/10.1080/13573322.2020.1812563

González-Calvo, G., Martínez-Álvarez, L., & Hortigüela-Alcalá, D. (2018). La influencia de los espacios para el desarrollo del proceso de enseñanza/aprendizaje en educación física: Una perspectiva autoetnográfica. *Retos: Nuevas Perspectivas de Educación Física, Deporte y Recreación, 34*, 317–322.

Green, K. (2008). *Understanding Physical Education*. SAGE Publications. https://.doi.org/10.4135/9781446213520

Hendry, L. B. (1975). Survival in a marginal role: The professional identity of the Physical Education Teacher. *The British Journal of Sociology*, *26*(4), 465-476.

Izadinia, M. (2013). A review of research on student teachers' professional identity. *British Educational Research Journal, 39*(4), 694–713. https://doi.org/10.1080/01411926.2012.679614

Jiménez, T. (2015). La aventura de aprender: Relato autobiográfico del viaje a Ítaca de un docente reflexivo. *Retos: Nuevas Tendencias En Educación Física, Deporte y Recreación, 28*, 285–290.

Keating, X., Zhou, K., Liu, J., Shangguan, R., Fan, Y., & Harrison, L. (2017). Research on preservice Physical Education teachers' and preservice elementary teachers' Physical Education identities: A Systematic Review. *Journal of Teaching in Physical Education, 36*(2), 162–72. https://doi.org/10.1123/jtpe.2016-0128

Kougioumtzis, K., Patriksson, G., & Strahlman, O. (2011). Physical education teachers' professionalization: A review of occupational power and professional control. *European Physical Education Review*, *17*(1), 111-129. https://doi.org/10.1177/1356336X11402266

Lawson, H. (1986). Occupational socialization and the design of teacher education programs. *Journal of teaching in Physical Education*, *5*(2), 107-116. https://doi.org/10.1123/jtpe.5.2.107

Mifsud, D. (2018). *Professional identities in initial teacher education*. Springer Nature.

Mooney, A., & Hickey, C. (2012). Negotiating masculine hegemony: Female physical educators in an all-boys' school. *Asia-Pacific Journal of Health, Sport and Physical Education, 3*(3), 199–212. https://doi.org/10.1080/18377122.2012.721726

Nemiña, R. (2018). Learning communities as a strategy for the professional development of Physical Education teachers. *Estudios Pedagogicos, 44*(1), 259–278. https://doi.org/10.4067/S0718-07052018000100259

Nemiña, R. (2020). Reconstruyendo la materia de didáctica de la Educación Física desde la perspectiva autobiográfica del alumnado. *Retos: Nuevas Perspectivas de Educación Física, Deporte y Recreación, 37*, 628–633

Neto, S., Iza, D., & Silva, M. (2017). Learning of teaching in the professional socialization in Physical Education. *Motriz: Revista de Educação Física, 23*(2), 1–10. https://doi.org/10.1590/s1980-6574201700020008

O'Sullivan, M. (2008). Creating and sustaining communities of practice among physical education professionals. *eJournal de la recherche sur l'intervention en éducation physique et sport, 15*, 21-31. https://doi.org/10.4000/ejrieps.5786

Pérez-Pueyo, Á., Hortigüela-Alcalá, D., Hernando-Garijo, A., & Granero-Gallegos, A. (2020). The attitudinal style as a pedagogical model in Physical Education: Analysis of its effects on initial teacher training. *International Journal of Environmental Research and Public Health, 17*(8). https://doi.org/10.3390/ijerph17082816

Raus, R., & Falkenberg, T. (2014). The journey towards a teacher's ecological self: A case study of a student teacher. *Journal of Teacher Education for Sustainability, 16*(2), 103–14. https://doi.org/10.2478/jtes-2014-0014

Raymond, S. (2016). Interplaying identity of Hong Kong primary school Physical Education teachers: A grounded theory exploration. *Journal of Physical Education and Sport, 16*(1), 13–23. https://doi.org/10.7752/jpes.2016.01003

Richards, K., Templin, T., & Graber, K. (2014). The socialization of teachers in Physical education: Review and recommendations for future works. *Kinesiology Review*, *3*, 113-134. http://doi.org/10.1123/kr.2013-0006

Rodrigues, R., & Figueiredo, Z. (2011). Construção identitária da professora de Educação Física em uma instituição de educação infantil. *Movimento, 17*(4), 65–81. https://doi.org/10.22456/1982-8918.20377

Rodrigues, R., Figueiredo, Z., & Filho, N. (2012). Relações socioprofissionais como elemento de influência na construção das identidades docentes. *Movimento, 18*(4), 175. https://doi.org/10.22456/1982-8918.29905

Sánchez-Hernández, N., Martos-García, D., & Prat, S. (2019). La (re)construcción de la identidad profesional de las profesoras de EF: De la complicidad y la reproducción de las relaciones de género a la disposición al cambio educativo. *Revista Complutense de Educación, 30*(3), 879–893. https://doi.org/10.5209/rced.59504

Silva, A., & Lüdorf, S. (2012). Possíveis relações entre corpo, saúde e o envelhecimento do professor de educação física. *Movimento*, *18*(2), 187-204.

Simonton, K., Gaudreault, K, & Olive, C. (2021). Examining marginality, isolation, and emotions and their relationship with physical educator intrapersonal job beliefs. *Journal of Teaching in Physical Education*, *41*(3), 364-373. https://doi.org/10.1123/jtpe.2021-0024

Sparks, A., Templin, T., Schempp, P. (1993). Exploring dimensions of marginality: reflecting on the life histories of Physical Education teachers. *Journal of Teaching in physical education*, *12*, 385-398.

Szczepański, S. (2013). The Physical Education teacher in self and peer assessment. *Journal of Physical Education & Health, 2*(3), 13–29.

Young, A.-M., & MacPhail, A. (2014). Irish Physical Education cooperating teachers' experiences of learning to become a 'Teacher of Teachers'. *The Open Sports Sciences Journal, 7*(1), 98–105. https://doi.org/10.2174/1875399x01407010098