DEVELOPMENT OF PROFESSIONAL TEACHER KNOWLEDGE WITHIN COLLABORATIVE PRACTICES: A STUDY IN THE CONTEXT OF TEACHER INITIAL EDUCATION

DESENVOLVIMENTO DO CONHECIMENTO PROFISSIONAL DOCENTE NO SEIO DE PRÁTICAS COLABORATIVAS: UM ESTUDO NO CONTEXTO DE UM PROGRAMA DE FORMAÇÃO DE PROFESSORES 🔗

DESARROLLO DEL CONOCIMIENTO PROFESIONAL DOCENTE EN EL SENO DE LAS PRÁCTICAS COLABORATIVAS: UN ESTUDIO EN EL CONTEXTO DEL PROGRAMA DE FORMACIÓN DE PROFESORADO 🔗

🆔 **Janaína da Silva Ferreira*** <ferreira.js@outlook.com.br>

🆔 **Samuel de Souza Neto**** <samuel.souza.neto@gmail.com>

🆔 **Paula Maria Fazendeiro Batista***** <paulabatista@fade.up.pt>

---

*Universidade do Estado do Rio de Janeiro (UERJ). Rio de Janeiro (RJ), Brazil.

** Universidade Estadual Paulista Júlio Mesquita Filho (UNESP). Rio Claro, Brazil.

*** Faculdade de Desporto da Universidade do Porto. Porto, Portugal.

Abstract: This study analyzed the construction of teaching professional knowledge of Physical Education residents in the context of the Pedagogical Residency program within a community. One supervisor, three collaborating teachers and 24 residents (undergraduate students) participated. They met weekly for 18 months in a dynamic of constructive-collaborative work. Data sources were reports, teaching cases, and reflective portfolios produced by six purposefully selected residents. Data were triangulated and subjected to thematic analysis. Residents developed different knowledge, but the skills related to professional action stood out the most. The formative devices contributed to developing the residents' reflective, critical, and communicative rationality. The community proved to be a space for sharing, for the development of close and horizontal interactions between different types of knowledge and professionals, allowing the transition from knowledge-to-practice and knowledge-in-practice to knowledge-of-practice, as well as the transition from a peripheral and individual position of knowledge for a knowledge built collectively.

Keywords: Teacher Education. Knowledge bases. Learning Community. Collaborative learning.

1 INTRODUCTION

Teacher education is crucial for quality education (COMUNICAÇÃO, 2015). Its mission is to provide future teachers with the necessary means to face the challenges in teaching (STEFAN *et al.,* 2019). In this process, professional teaching knowledge (PTK) is considered one of the most important predictors of the quality of teaching and teaching as a profession (SOUZA NETO; CYRINO; BORGES, 2019), with numerous studies recognizing the importance of knowledge bases for the construction of the PTK and teacher professionalization (MARCON, 2011; PIMENTA, 2000; SHULMAN, 1987; TARDIF, 2014).

The acquisition of PTK involves not only the individual knowledge base components reflexivity (SCHON, 1992) but also collective reflexivity (TARDIF; MOSCOSO, 2018) through the mobilization of knowledge (TARDIF, 2014) and collaborative practices within communities, such as "communities of practice" (BATISTA, 2020; LAVE; WENGER, 1991; WENGER, 1999), "communities of inquiry" (COCHRAN-SMITH; LYTLE, 1999) or "learning communities" (CORAZZA *et al.*, 2017).

The integration of collective professional spaces thus emerges as a strong driver for the development of the TPK and teacher education (NÓVOA, 2017; SHULMAN, SHULMAN, 2004; ZEICHNER, 2010). These spaces are covered by a "professional culture" that identifies, shares, values, and includes different knowledge, experiences, cultures, and subjects that make up this universe in favour of qualifying for a profession (NÓVOA, 2019, 2017; TARDIF, 2014).

Although the TPK is manifested in practice, it is developed in community spaces, hybrid and critical to the profession, constituting itself through a close and horizontal relationship between different knowledge and professionals (NÓVOA, 2019; SARTI, 2020; ZEICHNER, 2010), in that learning occurs in and through the interaction established between the members of a group (RODRIGUES; MISKULIN; SILVA, 2017).

In the context of Physical Education (PE) initial education, the introduction of collective and community spaces has been identified as a process that is still scarce. Educational culture does not seem to have gone beyond the technical and lecturing perspective, making it difficult to insert the TPK and innovative practices that can significantly place the future teachers into the workspace (SOUZA NETO; SARTI; BENITES, 2016).

Despite the difficulties, teaching induction policies have been recently implemented as part of the national teacher education policy (CAPES, 2018). The Programa Institucional de Bolsas de Iniciação à Docência [Institutional Teaching Initiation Scholarship Program] (PIBID), launched in 2007, and the Programa Residência Pedagógica [Pedagogical Residency Program] (PRP)[1], launched in 2018,

---

1 The PRP and PIBID aim to improve the quality of initial education, through the insertion of undergraduates into the daily life of schools. However, the PRP has some specificities, such as a) promoting immersion in the professional space, based on joint planning, immersion in activities of setting, observation, and conducting; b) promoting adjustments to the curriculum based on the current Base Nacional Comum Curricular (BNCC); c) and it is intended for students who are in the second half of the degree course.

are part of this context as government actions aimed at improving the quality of basic education and mainly of teacher education quality. Under professional induction, such programs have generated observations about these practical experiences and approximations between knowledge, teachers, students, and institutions.

Gatti *et al.* (2019) highlight the contributions of PIBID and PRP to the qualification and interaction between teachers, students, and institutions. Such contributions refer mainly to opportunities for exchanging experiences, collective reflections, greater support, and participation of school teachers in the education process, as well as greater immersion in the work context. However, the same authors draw attention to some questions are still present in education that need study, including using these programs as means of investigation, such as: What type of education activities have the potential to favour the development of TPK? How do simultaneously educate reflective professionals with an investigative attitude, capable of analyzing and theorizing about their practices?

Obtaining answers to these questions requires research that considers contexts, curricular proposals, and different realities to find elements that make it possible to re-signify the curricula and, consequently, the teaching profession.

Based on this framework, this study analyzes the construction of the TPK of PE pre-service teachers (residents) in the context of the PRP within a community. Specifically, we sought to (a) identify the components of the knowledge base developed by residents in community activities; (b) analyze the contribution of the devices used in the community for the development of the TPK; (c) analyze the value of constructive-collaborative dynamics for the construction of the TPK.

2 THE CONSTRUCTION OF TEACHING PROFESSIONAL KNOWLEDGE IN COLLECTIVE EDUCATION SPACES

Describing, articulating, and documenting TPK is a complex, non-linear and difficult task due to the problematic nature of its identification in practice, and because most teachers' professional life does not systematically include connection times with advances in the knowledge base of their profession (LOUGHRAN; MITCHELL; MITCHELL, 2003). But, regardless of these constraints, the TPK construction occurs as a result of multiple influences, from experiences lived before initial education, during initial education, until professional practice (BATISTA; GRAÇA, 2021). In this experiential path, the dynamic relationships that are established happen at various levels, referring to an understanding that TPK is dynamic knowledge produced by teachers in action and by reflection in action, the result of interactions that are established at different times and contexts along its trajectory (GOODSON, 2008).

In each teacher's path, the quality of initial education is considered a central requirement for the construction of the TPK, in addition of the participation of more experienced professionals (NÓVOA, 2017), to allow a transition from knowledge-to-practice and knowledge-in-practice for knowledge-of-practice (COCHRAN-SMITH; LYTLE, 1999), in which the teacher, the student, becomes a researcher of the profession.

Given the above, TPK involves: (1) experience - relationships marked by students' behavior and involuntary reactions, by knowledge of the classroom rhythm and the ability to understand and explain the "heart" of teaching, (2) pedagogical tact - understanding a sense, an intelligence, or a pedagogical stance that define the teachers who, more "naturally", exercise their action and (3) discernment - the ability to judge and to decide in the professional day-to-day, because being a teacher is not just dealing with knowledge, it is dealing with knowledge in situations of human relationships (NÓVOA, 2017).

Concerning basic knowledge for teaching, Shulman (1987), in his original proposal, systematizes it into two major sectors: (1) General knowledge, which encompasses the knowledge of students and their characteristics, educational context, ends, purposes and values, and the general pedagogical; (2) Subject-related knowledge, which encompasses curriculum knowledge, content knowledge, and pedagogical content knowledge (an amalgamation of content and pedagogy unique to teachers). This broad, but not finite, range of knowledge materializes in teaching practice dressed in different guises depending on the specific teaching situations.

From the formative point of view, Shulman and Shulman (2004) present a formative model that they call 'promoting a community of learners, which seeks to base teaching knowledge, not on cognitive and individual reasoning processes, specific to each disciplinary area, but that integrates broad reflective processes, understanding that teachers learn not only through individual processes but, above all, through processes that enable critical and collective reflections on practice. In this understanding, we recognize that: (1) The construction of knowledge is a collaborative effort in which all participants have valuable contributions and are responsible for promoting learning; (2) The ideas discussed in the learning community can be improved, aiming to progress from "weak" to more strong ideas; (3) The ideas that groups work to improve are those that are valuable to the community, such as those that address authentic issues, challenge conceptual understandings, or lead to the development of solutions to common problems (ZHANG *et al*., 2011).

Like communities of practice, communities of learners are based on the idea that "learning is an integral and inseparable aspect of social practice" (LAVE; WENGER, 1991, p. 31), pointed out by Alves, Queirós, and Batista (2017) and Batista (2020), as spaces of high formative value for future teachers.

3 METHODOLOGY

The study occurred in a PE community[2] involved in constructive-collaborative dynamics (CYRINO, 2016; MIZUKAMI, 2003). Although the present study focuses on the residents (undergraduate students), the dynamics included the qualification and professional development of all those involved.

---

2 The community is made up of an advisor professor, three preceptor teachers and 24 residents. In the PRP public notice published in 2018, the SUPERVISOR nomenclature is used to designate the university professor; RESIDENTS, for undergraduate students who undertake the teaching practice in the program; COLLABORATOR, for the school teachers, responsible for accompanying the residents.

In this investigative dynamic, the collaborative work starts from an a priori formative proposition, whose focus is "improving professional development through opportunities for reflection on practice, shared critiques, and supported changes" (MIZUKAMI, 2003, p. 209). In this sense, the community works towards its own development, jointly building plans, actions, and strategies for the analyses of the practices.

3.1 CONTEXT AND PARTICIPANTS

The study was conducted in the context of the PRP of a degree course in PE at a public university in the state of São Paulo, Brazil.

A supervisor (one of the authors of this work), three collaborative teachers and 24 residents participated in the PE community. For this study, data from six residents were purposely selected based on the following criteria: (a) being in the fourth year of graduation and having participated in the entire PRP process; (b) having experienced and completed two of the four teaching practices of the course; (c) having submitted a final report reliable with the activities carried out.

Of the six selected residents, four were female (Lavínia, Aline, Wanessa, and Bruna) and two were male (Lucas and Leandro), and all were involved in two of the three public schools indicated for the project - the activities developed by the residents took place in the three segments of basic education. To maintain anonymity, the residents received pseudonyms.

The PRP aims, through financial incentives, to provide a reflective exercise between theory and practice; professional immersion from the experience of innovative practices that elevate the teaching role. These objectives are based on an intention to reframe the teaching practices in degree courses (CAPES, 2018). In the degree course, the resident must complete 440 hours, 60 of which are destined to the school setting; 320 for immersion, and 60 for the preparation of a final report, evaluation, and socialization of activities (CAPES, 2018, p.1-2).

In the investigated context, the project proposed "practice as a locus of initial and continuing education for teaching" Its focus was to bring new practices of guidance, supervision, and teaching experience to the degree, aiming to contribute to resizing the Supervised Teaching Practice field.

The work of the PE community took place over 18 months (2018-2020), with weekly meetings, having gone through three stages of work (Table 1).

Table 1 – Constructive-collaborative dynamics in the community

FORMATIVE STAGES	STRATEGIES ADOPTED
FIRST MOMENT (August/2018 to January/2019)	METHODS: reading, writing, critical reflection, and recording activities; elaboration and development of the teaching project. COLLABORATIVES: elaboration of charts and conceptual maps; recording of experiences (beginning of the reflective portfolio), pedagogical meeting, reflection in and on practice, discussions about the teaching profession and collective planning.
SECOND MOMENT (February/2019 to July/2019)	METHODS: discussion and sharing of responsibilities between preceptors and residents in the construction of planning activities and completion of the teaching project; reading, writing, critical reflection, and recording activities; participation in congresses. COLLABORATIVES: construction and joint production of devices to analyze the practices, such as checklists, portfolios, teaching cases, weekly and partial reports; construction of works for congresses.
THIRD MOMENT (August/2019 to January/2020)	METHODS: discussion mediated by the advisor about the devices produced, practices carried out and the perception of the formation based on what was experienced. Meetings to present the final reports and project evaluation. COLLABORATIVES: joint presentation of the final report; presentation of papers at conferences; evaluation of the participants (verbal and entry) concerning the project.

Source: Prepared by the authors.

3.2 PROCEDURES OF DATA COLLECTION

The data used in the analysis come from three sources produced within the community of PE, specifically the teaching cases, reports, and reflective portfolios. The teaching cases were built individually and discussed collectively in the first and second formative moments, in a total of two cases per selected participant. The reports were produced individually in two stages, one at the end of the second stage and the other after the third and final educational stage. The portfolio was developed individually throughout the process. These documents were delivered by the residents as a final requirement for the completion of the project.

To comply with ethical research procedures, the study was submitted to the Research Ethics Committee, through the website https://portal.plataformamaisbrasil. gov.br/, being approved under opinion number 3.635.921.

3.3 DATA ANALYSIS

The data were subjected to a thematic content analysis of the deductive type, i.e., taking the research questions and theoretical framework as a reference, and triangulated in a constant back-and-forth process between the objective of the study, the data, and the theoretical framework (BENITES *et al*., 2016; QUEIRÓS, GRAÇA, 2013). The analysis of the documents was aided by the *NVivo* software version 1.6.1 (1137).

Thematic content analysis, highlighted with research questions, contributed to identifying three themes: (1) Knowledge base and construction of the TPK; (2)

Formative devices (portfolio, teaching cases and report) as a TPK development strategy; (3) Contribution of constructive-collaborative dynamics to TPK construction.

4 RESULTS

4.1 KNOWLEDGE BASE AND THE CONSTRUCTION OF THE TPK

The narratives showed that throughout the PRP, residents mobilized different types of knowledge, such as content, context, and general pedagogical knowledge (curriculum, class management, educational, and methodological knowledge). However, the emphasis was on developing one's professional skills. To solve conflicts in class, residents denote the need to develop knowledge about students and the school and how to articulate them to different teaching situations (pedagogical content knowledge).

For example, Aline reported that when developing the teaching project with her partner in the first semester, they faced "several challenges, many of them related to the content, its adaptability to the context, and the time to explore it", and that, "therefore, we had to deepen the concepts in the area of sporting events organization, understand the students' needs and potential, and get prepared to better structure the activities".

Those challenges, together with readings, reflections, and discussions, provided learning both in terms of content and context, and the different possibilities of applicability. In terms of knowledge, Lucas reflected on what the PRP experience was,

> I acquired a lot of theoretical and practical knowledge regarding the teaching career, especially that a teacher must be very reflective, not only with his students but with his own practice of how to teach [...] it is becoming more and more clear to me that teaching is not transmitting knowledge, but adopting strategies of action and reflection where the teacher and students build knowledge together (LUCAS, portfolio).

Knowledge base mobilization appears strongly linked to the need to learn to adapt the content to the reality experienced. In the final reports, we perceived that, after 18 months of experience, the residents realized that they could teach not only in terms of assigning content but also linking teaching to the students' reality and context, as well as more autonomy in teaching. "Planning and conducting the classes proved easier than in the first semester" (ALINE, final report).

> Today I have a greater ability to teach and understand a teacher's everyday tasks and challenges; besides, knowing how to deal with some situations maturely and consciously way based on experience and literature helped me to change my attitudes as a teacher (LAVÍNIA, final report).

The quotation make it clear that the experiences lived by the residents allowed them to mobilize and re-signify knowledge, generating opportunities for the construction of pedagogical content knowledge, and minimizing tensions between qualification and the profession.

On the other hand, the data also revealed the need and the development of capacities that are strongly linked to the understanding of what teaching is and how to become a teacher. Reflection, communication, and argumentation emerge as potentiating elements for constructing the residents' TPK, which is perceived as fundamental to their evolution as teachers.

> Before, I was not able to analyze myself and observe the changes I had undergone. I believe this was due to a greater ability to "practice" reflections around the profession and oneself. Consequently, experiencing the "clinical look" (ALINE, portfolio).

> The knowledge of communication, where through practice we adapt and shape ourselves according to the age group we are dealing with and how we can approach a specific content, another example is how I should behave towards students and any other person inside the school [...] (LEANDRO, portfolio).

These capabilities stand out in the data from the perception that "More than classroom experience, knowledge of the educational process was acquired and not only how to teach, but also why and how to do it" (WANESSA, *final report*).

Knowledge base construction and mobilization for teaching evolved from the challenges faced in the experiences in the community. This mobilization was strongly linked to the development of the residents' reflective and communicative capacity. The difficulties arising from inexperience in the school context were minimized, and some critical, reflective, and communicative rationality developed throughout the project.

> Similar to the first semester, many challenges (re)emerged. Insecurity, communication, room control and student safety during activities still proved to be challenging, but I believe that I have improved a lot on these issues. From these improvements, other challenges and reflections were favoured (ALINE, portfolio).

It was also evident in the narratives that residents require the mobilization and constant deepening of knowledge to adapt the contents to the students' reality and the teaching context. However, the ability to transpose 'knowledge of content' to the context of practice was only possible from the development of 'knowledge of teaching'.

4.2 FORMATIVE DEVICES AS A TPK DEVELOPMENT STRATEGY

The data allowed us to perceive that the devices - as artifacts that materialize a specific organization of objects, actors, structures, and relationship systems - were aimed at teaching professionalization, with an educational intention linked to the construction of an understanding of the practice, the analysis of the professional situation that involves action strategies, personal implications in interactions and the possibility of facing up to the challenges (PENTEADO; SOUZA NETO, 2021).

In this way, they contributed to the structuring of the TPK, offering analyses and reflections not only about the content but also about decision-making about teaching, the consolidation of a practical sense, judging and acting, awareness, commitment, and assumption of a place in the profession, as systematized in Table 2.

Table 2 – Formative devices and components of the TPK

DEVICES	CONTRIBUTIONS TO TPK
PORTFOLIO	**Teaching learning (knowledge base)** The key point for me is to impart all the knowledge I had in a conceptual, procedural, and attitudinal way, [...], know what content to use, retrieve it and apply it consistently with the age group I am working with (LEANDRO). **Learning to feel, act, and be a teacher** Today I have a greater ability to teach and understand a teacher's everyday tasks and challenges [...]maturely and consciously way based on experience and literature (LAVÍNIA).
TEACHING CASES	**Teaching learning (knowledge base)** This incident could be mitigated if the teacher has the knowledge and is aware of the facts [...] to better direct their planning [...] for this, clear and efficient communication between school events and the teacher's planning is necessary [...] for changes to happen in class (WANESSA). **Learning to feel, act, and be a teacher** Because it was the pre-service teacher's first contact with the school and the students, he felt a little insecure and didn't know how to act in some of these situations, so he always tried to solve it through dialogue with the children (LEANDRO).
REPORTS	**Teaching learning (knowledge base)** I was able to gain a vision of the dynamics present in the school; I managed to have a different understanding of the functioning of the planning process of a Physical Education program in the municipal network and in the state education network (BRUNA). **Learning to feel, act, and be a teacher** I can participate in discussions about teacher education and practice; enter the universe of public education in the community [...], recognise its reality; have contact with different working professionals, expanding my notion of identity and professional performance (ALINE).

Source: Prepared by the authors.

Regarding the purpose of the formative devices, i.e., to enable the analysis, reflection, and rationalization of practical knowledge, the strategies adopted seem to have contributed to the process of building the residents' reflective thinking, allowing them individual and collective analysis of the practice.

> Teaching Case, where we sought to analyze a specific challenge of the teaching performance to bring new perspectives and answers [...] Reflective Portfolio, where I could exercise a self-assessment based on reflecting about my performance (ALINE, portfolio).

In turn, the reflection provided by the devices seems to have contributed to the residents' judgement regarding the importance of being a reflective teacher, a characteristic that emerged recurrently in the narratives.

> Challenges such as communication, and linked to this, shyness and fear, were present when reflecting mainly on the first conducting, the first contact. Those challenges were/are being overcome when I carry out the exercise of reflecting on the class, in addition to being attentive to the post-class discussions with the school preceptor teacher and with the group in the project meetings (LUCAS, portfolio).

Thus, it was possible to perceive that the devices allowed exteriorizing the practices, and, based often on the theory experienced in the first phase of the program,

compare the beginning and the final phase of the program, the return of the actors (residents) to what they experienced, making them reflect, bringing new rationality about teaching, profession, and teaching professionalism.

4.3 CONTRIBUTION OF THE CONSTRUCTIVE-COLLABORATIVE DYNAMICS TO TPK CONSTRUCTION

The constructive-collaborative dynamics of the PE community allowed residents to experience moments of high formative value, the result of exchanges, discussion, and interaction in the different formative spaces (university and school).

> Socialization took place in circles and seminars were held during the meetings [...], interaction events were held with residents of other subjects with the aim to exchange experiences (LAVÍNIA, partial report).

> An important point is the closer contact with collaborator teachers. Since previous experiences have been totally against this reality, in which contact with teachers was based only on the teaching practice itself, the Pedagogical Residency Program contributes to linking the theory and the teacher's practice the resident observes in the moments of reflection that the Program provides outside the school environment (ALINE, final report).

Although the residents presented the curriculum and school programs as important sources of knowledge acquisition, social interaction remained expressively as an essential source for learning to teach, denoting a critical awareness of residents about the importance of exchanges between peers and the teachers' experiential knowledge as a support for resolving conflicts that arise during the teaching practice.

> The collaborator teacher was attentive from the beginning of the classes, thinking about the development of the classes, helping us make the activities work about safety, organization logic, and waiting for the students. He also managed to teach me items such as assessment, criteria, and how to organize and plan each one according to the style of the room (LARISSA, partial report).

Regarding the contribution of interactions and collaborative actions to the construction of the TPK, we can see the development of two dimensions of learning: an individual one, which enabled the mobilization of different knowledge and the recognition of constant reflection on the action,

> From a dialogue traced between the physical education classes that I am following with the literature that has been worked [...] I am acquiring new knowledge, improving my skills and competencies, aiming to develop my teaching capacity and make myself a teacher who understands the importance of reflection in his practice [...] still, there is much knowledge about teaching practice I ignore, so I go in search of them through studies inside and outside the usual formative space (BRUNA, portfolio).

> The second, the collective dimension, is characterized by the processes of building knowledge, acting and being a professional based on lived and shared experiences in the community. This is the dimension with greater emphasis in the narratives, being a conditioning factor for the residents' perception of their professional development.

> I managed to acquire countless experiences with the preceptor teacher in strategies, methodologies, and how to deal with each student profile, among others [...] my professional identity as a teacher was built from [...] the exchange of experiences with teachers who are already in the professional

environment; research, reading and analysis that I do of works, texts, articles, about teaching in physical education and other aspects (LAVÍNIA, portfolio).

In the narratives, it is also clear that the constructive-collaborative dynamics contributed to a significant change in the professional attitude of the residents as they faced the challenges. This fact owes much to the emphasis on support, guidance, reflections, discussions, and collective experiences within the community.

> The challenges and experiences that emerged this semester were very important for my education [...] The closer contact, through meetings, with the preceptor teachers was essential for this [...] because they have a lot to offer us, always seeking to put us in a position never seen, at least by me, in teaching (ALINE, portfolio).

The meetings at the university were pointed out by the residents as important and fundamental spaces for their professional development, as they allowed them to analyze practices and become aware of the teaching process. The readings, discussions, and reflections within the community constantly appear in the reports as vital for becoming a teacher.

However, they recognize that although this dynamic has helped in learning the profession, this is a long and time-consuming process, which requires time and more opportunities for intergenerational professional experiences.

> the residents' learning is built as the experiences lived in the teaching practice are discussed [...] critically at the university [...] students and professors need to be aware of their roles within the school to reach more important focuses. [...] even with reflections and analyses made at the university and with the school supervising teacher, this change can take some time to happen (LUCAS, teaching case).

It seems that residents agree that the large number of participants and cultural, personal, and professional heterogeneities characterized some impasses in the community, sometimes causing some disorganization and divergence of ideas, as "there were many different profiles and thoughts, and for being a high number of residents, it was sometimes difficult to decide something quickly and efficiently". However, at the same time, this fact contributed to a change of attitude before the differences, "after all, teachers work in groups" (LAVÍNIA, *portfolio*).

> Like any working group, there were flaws during the process that was essential for us to reach the end of it. Some choices could have been different during the process, but we would not be the individuals we are today if it was something different at the beginning (WANESSA, final report).

Thus, it is clear that the constructive-collaborative dynamics experienced in the PE community changed the residents' professional attitudes. Several attributed this change to reflections and experiences developed with and among community members.

5 DISCUSSION

The results allowed us to understand that the constructive-collaborative dynamics proved valuable to mobilize the knowledge base and develop

professional skills, essential elements for teacher professionalism[3] and consequent professionalization[4] (NÓVOA, 2017, 2019; SHULMAN, 1987). These skills, such as reflection, communication, and critical thinking, allowed residents to develop confidence and a professional attitude. In turn, this posture contributed to affirming different professional positions by incorporating learning about being, acting, knowing, and arguing the profession (NÓVOA, 2017).

This dynamic also revealed the incorporation of a "pedagogical point of view" (AZANHA, 2006), a teacher's way of perceiving the factors that intersect teaching and acting in teaching (SOUZA NETO; SARTI; BENITES, 2016), as it depends on a long process of professional socialization that was facilitated with the creation of the PE community.

In this context, the constructive-collaborative dynamics within the PE community worked as a propellant for the development of the TPK and teacher education (NÓVOA, 2017) as it is a collective space that involved both individual reflexivity (SCHON, 1992) and collective reflexivity (TARDIF; MOSCOSO, 2018). The strategies used revealed an active partnership, sharing and experiences, giving rise to a close and horizontal relationship between different knowledge and professionals (NÓVOA, 2019; SARTI, 2020).

In the meantime, the acquisition of TPK within the PE community happened during the transition from knowledge-to-practice and knowledge-in-practice to knowledge-of-practice (COCHRAN-SMITH; LYTLE, 1999). This transition involved the resignification of the knowledge base and the experiences, the pedagogical tact (practical sense, situated intelligence) and the discernment (judgment and decision making) (NÓVOA, 2017).

In this sense, besides the pedagogical knowledge of the content, the residents also expressed in their narratives the need to develop knowledge that depends not only on cognitive rationality but rationality that is linked to practical and moral learning (SHULMAN, 2005). These other dimensions go beyond the analytical sphere of the TPK (thought and action) (SHULMAN, 1987) and are strongly linked to community work (NÓVOA, 2019; SHULMAN; SHULMAN, 2004) and epistemology of practice rooted in other forms of rationalization of education (TARDIF, 2014).

In the specific case of the formative devices, the focus was on professional development (WITTORSKI, 2022) to provide residents with a professional culture (TARDIF, 2014). The devices, by promoting reflections on school and teaching culture, in the analysis of the professional situation, allowed them to exercise confrontation (SMYTH, 1992), when analyzing, for example, their professional development during the program, describing, informing, confronting, and reconstructing action strategies and personal implications for professional learning (TARDIF, 2014).

---

3 Teacher professionalism is understood in the sense of Contreras (2002), involving moral obligation (affection and morality); commitment to the community (with peers and society) and professional competence (here it is more than knowing how to do it, associated with the first two aspects).

4 The word professionalization is polysemic, being treated in this work as professionalization-education with a focus on the manufacture of a professional (WITTORSKI, 2022).

In this sense, the results confirm that the strategies adopted within the community enabled the incorporation of a *habitus* teacher and the possibility of moving from the position of a student to the *habitus* teacher (SOUZA NETO; SARTI; BENITES, 2016).

As for the articulation between know-how-to-do, ethical posture, and commitment to the community, the devices offered a representation of teaching professionalism practice (CONTRERAS, 2002), contributing to the development of the professional *ethos* (NOVA, 2017).

Finally, the findings of the study highlight learning resulting from an intergenerational partnership, which made possible the "integration between the workplace and teacher education" as it was proposed that preceptor teachers assume a new identity as "educators of their peers" within a "socio-professional logic" (SARTI, 2013, p.218).

This partnership made it possible for residents to assume a role closer to teaching by establishing a close relationship with a professional belonging to another generation, something essential for the constitution of their professional identity (ATTIAS-DONFUT; DAVEAU, 2004; SOUZA NETO; SARTI; BENITES, 2016).

6 CONCLUSION

This study analyzed, from the narratives of students participating in the PRP, how the TPK is built in the context of collaborative practices in the community. Data revealed that the TPK was built from the: (1) experiences lived in relationships marked by the students' behavior, the management of the class, and the need to understand and explain the "essence" of teaching; (2) construction of the pedagogical tact, a practical sense, an intelligence situated in professional practice; and (3) construction of insight, the ability to judge and decide in the uncertain situations of human relationships (NÓVOA, 2017, 2019). We add to this set an amalgamation of the knowledge base, creating what can be called teacher pedagogy (TARDIF, 2014).

Besides these dimensions, the socio-professional dimension (SARTI, 2020) appears in the results as a strong characteristic of TPK learning. This result, in particular, makes it possible to fill a gap in the field of research since studies addressing this issue are scarce, ratifying the importance of induction, mentoring, coaching programs for intergenerational learning, and consequent professional development (BRÜCKNEROVÁ; NOVOTNÝ, 2017).

Thus, the study allowed us to understand that, about TPK, changes occurred in terms of content, in terms of cognitive and individual structures regarding previous learning (ERAUT, 2008), and in terms of situated knowledge, in eye-to-eye and side-to-side interactions (TARDIF, 2014) and that reside in professional communities (NÓVOA, 2017).

Finally, the analysis provided by this study allowed to understand that the construction of the TPK of the group of investigated residents constituted the passage from a peripheral and individualistic position of construction to the birth of the idea

of a community of learners. It also points to the importance of a common ground in education for the construction of the TPK, a hybrid space, a place of intertwining and meeting (NÓVOA, 2017; ZEICHNER, 2010).

The dynamics developed in the PRP by the PE community contribute to thinking about the end of education and the beginning of the profession as a time-between-two but which, as Nóvoa (2019) points out, has been silenced in universities and educational policies.

REFERENCES

ALVES, Ana Margarida; QUEIRÓS, Paula; BATISTA, Paula. O valor formativo das comunidades de prática na construção da identidade profissional. **Revista Portuguesa de Educação**, v.30, n. 2, p. 159-185, 2017. DOI: https://doi.org/10.21814/rpe.12275

ATTIAS-DONFUT, Claudine; DEVEAU, Phillipe. Géneration. **Recherche et formation**, n. 45, p. 101-114, 2004.

AZANHA, José Mario Pires. **A formação do professor e outros escritos**. São Paulo: SENAC, 2006.

BATISTA, Paula. O potencial formativo e os desafios às práticas de supervisão em comunidades de prática: reflexão sustentada numa experiência pedagógica em contexto de estágio de Educação Física. *In:* RIBEIRO, Ana Isabel *et al*. (coord.). **A supervisão pedagógica no século XXI:** desafios da profissionalidade docente. Coimbra: Imprensa da Universidade de Coimbra, 2020. p. 59-77.

BATISTA, Paula; GRAÇA, Amândio. Construir a profissão no contexto da formação de professores de Educação Física: processos, desafios e dinâmicas entre a escola e a universidade. **Pro-Posições**, v. 32, p.1-27, 2021. DOI: http://dx.doi.org/10.1590/1980-6248-2018-0084

BENITES, Larissa Cerignoni *et al*. Análise de conteúdo na investigação pedagógica em Educação Física: estudo sobre estágio curricular supervisionado. **Movimento,** v. 22, n. 1, p. 35-50, 2016. DOI: https://doi.org/10.22456/1982-8918.53390

BRÜCKNEROVÁ, Karla; NOVOTNÝ, Petr. Intergenerational learning among teachers: overt and covert forms of continuing professional development. **Professional Development in Education,** v. 43, n. 3, p. 397-415, 2017. DOI: https://doi.org/10.1080/19415257.2016.1194876

CAPES. Coordenação de Aperfeiçoamento de Pessoal de Nível Superior. Edital 6: **Chamada Pública para apresentação de propostas no âmbito do Programa de Residência Pedagógica.** 2018. Brasília: Ministério da Educação, 2018. Available at: http://cfp.ufcg.edu.br/portal/images/conteudo/PROGRAMA_RESIDENCIA_PEDAGOGICA/DOCUMENTOS_E_PUBLICACOES/01032018-Edital-6-2018-Residencia-pedagogica.pdf. Accessed on: Mar. 11th, 2021

COCHRAN-SMITH, Marilyn; LYTLE, Susan L. Relationships of knowledge and practice: teacher learning in communities. **Review of Research in Education**, v. 24, n. 1, p. 249-305, 1999. DOI: https://doi.org/10.3102/0091732X024001249

COMUNICAÇÃO DA COMISSÃO AO PARLAMENTO EUROPEU, AO CONSELHO, AO BANCO CENTRAL EUROPEU, AO COMITÉ ECONÓMICO E SOCIAL EUROPEU E AO COMITÉ DAS REGIÕES: um plano de investimento para a Europa. Bruxelas: Comissão Européia, 2015. Available at: http://cip.org.pt/wp-content/uploads/2015/03/CELEX-52014DC0903-PT-TXT.pdf. Accessed on: April 20th. 2022.

CONTRERAS, J. **A Autonomia de professores**. São Paulo: Cortez, 2002.

CORAZZA, Maria Julia *et al*. Comunidades de prática como espaços de investigação no campo de pesquisa formação de professores. **Revista Pesquisa Qualitativa**, v. 5, n. 9, p. 466-494, 2017. Available at: https://editora.sepq.org.br/rpq/article/view/138. Accessed on: July 17th. 2020.

CYRINO, Marina. **Do acolhimento ao acompanhamento compartilhado:** a construção colaborativa de uma proposta para o estágio curricular no curso de pedagogia. 2016. 344f. Tese (Doutorado em Educação) - Instituto de Biociências, Universidade Estadual Paulista, Rio Claro, 2016. Available at: http://hdl.handle.net/11449/137997. Accessed on: July 17th. 2020.

ERAUT, Michael. Learning from other people in the workplace. *In*: HALL, Kathy; MURPHY, Patricia; SOLER, Janet (ed.). **Pedagogy and practice:** culture and identities. London: Sage, 2008. p. 40-57.

GATTI, Bernardete *et al*. **Prêmio professores do Brasil:** novos cenários de formação. Brasília: Editora UNESCO, 2019. Available at: https://www.fcc.org.br/fcc/wp-content/uploads/2019/05/Livro_ProfessoresDoBrasil.pdf. Accessed on: July 17th. 2020.

GOODSON, Ivor. **Conhecimento e vida profissional**. Estudos sobre educação e mudança. Porto: Editora Porto, 2008.

LAVE, Jean; WENGER, Étienne. **Situated learning:** legitimate peripheral participation. Cambridge/Nova York: Cambridge University Press, 1991.

LOUGHRAN, John; MITCHELL, Ian; MITCHELL, Judie. Attempting to document teachers' professional knowledge. **International Journal of Qualitative Studies in Education**, v. 16, n. 6, p. 853-873, 2003. DOI: https://doi.org/10.1080/09518390310001632180

MARCON, Daniel. **Construção do conhecimento pedagógico do conteúdo dos futuros professores de Educação Física**. 2011. 574 f. Tese (Doutorado em Ciências do Desporto) - Faculdade de Desporto, Universidade do Porto, Porto, 2011.

MIZUKAMI, Maria da Graça Nicoletti. A pesquisa sobre formação de professores: metodologias alternativas. *In*: BARBOSA, Raquel Lazzari Leite (org.). **Formação de educadores:** desafios e perspectivas. São Paulo: Editora Unesp, 2003.

NÓVOA, António. Entre a formação e a profissão: ensaio sobre o modo como nos tornamos professores. **Currículo sem Fronteiras**, v. 19, n. 1, p. 198-208, jan./abr. 2019.

NÓVOA, António. Firmar a posição como professor, afirmar a profissão docente. **Cadernos de Pesquisa**, v. 47, n. 166, p. 1106-1133, 2017. DOI: https://doi.org/10.1590/198053144843.

PENTEADO, Regina Zanella; SOUZA NETO, Samuel. A docência como profissão: o portfólio como dispositivo e política de formação docente no estágio supervisionado em Educação Física. **Arquivos Analíticos de Políticas Educativas**, v. 29, n. 83, 2021. Available at: https://epaa.asu.edu/index.php/epaa/article/view/6147. Accessed on: Mar. 14th. 2021.

PIMENTA, Selma Garrido. **Saberes pedagógicos e atividade docente**. São Paulo: Cortez, 2000.

QUEIRÓS, Paula; GRAÇA, Amândio. A análise de conteúdo (enquanto técnica de tratamento de informação) no âmbito da investigação qualitativa. *In:* MESQUITA, Isabel; GRAÇA, Amândio (org.). **Investigação qualitativa em desporto**. Porto: Editora Porto, 2013. v. 2, p. 115-149.

RODRIGUES, Márcio Urel; MISKULIN, Rosana Giaretta; SILVA, Luciano Duarte da. Potencialidades dos grupos/comunidades do Facebook para a formação de professores de Matemática no âmbito do PIBID. **Acta Scientiae. Revista de Ensino de Ciências e Matemática**, v. 19, n. 6, p. 833-852, 2017. Available at: http://funes.uniandes.edu.co/28375/. Accessed on: Nov. 21st. 2020.

SARTI, Flavia Medeiros. Dimensão socioprofissional da formação docente: aportes teóricos e proposições. **Cadernos de Pesquisa**, São Paulo, v. 50, n. 175, p. 294-315, jan./mar. 2020. Available at: https://publicacoes.fcc.org.br/cp/article/view/6796. Accessed on: Nov. 21st.. 2020. DOI: https://doi.org/10.1590/198053146796.

SARTI, Flavia Medeiros. Pelos caminhos da universitarização: reflexões a partir da masterização dos IUFM franceses. **Educação em Revista**, v. 29, p. 215-244, dez. 2013. DOI: https://doi.org/10.1590/S0102-46982013000400010

SCHÖN, Donald A. Formar professores como profissionais reflexivos. *In:* NÓVOA, Antonio (org.*)*. **Os professores e sua formação.** Lisboa: Dom Quixote, 1992. p. 78-93.

SHULMAN, Lee. Knowledge and teaching foundations of the new reform. **Harvard Educational Review**, v. 57, n. 1, p. 1-22, 1987. DOI: https://doi.org/10.17763/haer.57.1.j463w79r56455411

SHULMAN, Lee. The signature pedagogies of the professions of Law, Medicine, Engineering, and the Clergy: potential lessons for the education of teachers. *In*: MATH SCIENCE PARTNERSHIPS (MSP) WORKSHOP: **"Teacher Education for Effective Teaching and Learning"**. Irvine, Califórnia, 2005. Available at: http://www.taylorprograms.com/images/Shulman_Signature_Pedagogies.pdf. Accessed on: Jun. 18th. 2021.

SHULMAN, Lee; SHULMAN, Judith H. "How and what teachers learn: a shifting perspective". **Journal of Curriculum Studies**, v. 36, n. 2, p. 257-271, 2004. DOI: https://doi.org/10.1080/0022027032000148298

SMYTH, John. Teacher's work and politics of reflection. **American Educational Research Journal**, v. 29, n. 2, p. 267-300, 1992.

SOUZA NETO, Samuel; CYRINO, Marina; BORGES, Cecília. O estágio curricular supervisionado como lócus central da profissionalização do ensino. **Revista Portuguesa de Educação**, v. 32, n.1, p. 52-72, 2019. Available at: https://doi.org/10.21814/rpe.13439. Accessed on: Aug. 20th. 2019.

SOUZA NETO, Samuel; SARTI, Flavia M.; BENITES, Larissa C. Entre o ofício de aluno e o habitus de professor: os desafios do estágio supervisionado no processo de iniciação à docência. **Movimento**, v. 22, n. 1, p. 311-324, jan./mar. 2016. Available at: http://www.seer.ufrgs.br/index.php/Movimento/article/download/49700/36619. Accessed on: Aug. 9th. 2019.

STEFAN, Sorge *et al*. Structure and development of pre-service physics teachers' professional knowledge. **International Journal of Science Education**, n. 41, p. 862-889, 2019.

TARDIF, Maurice. **Saberes docentes e formação profissional**. Petrópolis: Vozes, 2014.

TARDIF, Maurice; MOSCOSO, Javier Nunez. A noção de "profissional reflexivo" na educação: atualidade, usos e limites. **Cadernos de pesquisa**, v. 48, n. 168, p. 388-411, 2018. Available at: https://publicacoes.fcc.org.br/cp/article/view/5271. Accessed on: Aug. 9th. 2019.

WENGER, Étienne. **Communities of practice**: learning, meaning and identity. Cambridge: Cambridge University Press, 1999.

WITTORSKI, Richard. **Profissionalização e desenvolvimento profissional**. São Paulo: Fundação Carlos Chagas/Catedra UNESCO, 2022.

ZEICHNER, Kenneth M. Repensando as conexões entre a formação na universidade e as experiências de campo na formação de professores em faculdades e universidades. **Educação**, v. 35, n. 3, p. 479-504, 2010. DOI: https://doi.org/10.5902/198464442357

ZHANG, Jianwei *et al*. Sustaining knowledge building as a principle-based innovation at an elementary school. **Journal of the Learning Sciences**, v. 20, n. 2, p. 262-307, 2011. DOI: https://doi.org/10.1080/10508406.2011.528317

Resumo: Este estudo analisou a construção do conhecimento profissional docente de residentes de Educação Física no contexto do programa Residência Pedagógica no seio de uma comunidade. Participaram um professor orientador, três professores preceptores e 24 residentes, que se reuniram semanalmente, numa dinâmica de trabalho construtivo-colaborativo, totalizando 18 meses. As fontes de dados foram relatórios, casos de ensino e portfólios reflexivos, produzidos por seis residentes selecionados propositadamente. Os dados foram triangulados e submetidos à análise temática. Os residentes desenvolveram diferentes conhecimentos, mas foram as capacidades relacionadas ao agir profissional que mais se destacaram. Os dispositivos formativos contribuíram para desenvolver a racionalidade reflexiva, crítica e comunicativa dos residentes. A comunidade revelou-se espaço de partilha, de desenvolvimento de interações estreitas e horizontais entre diferentes saberes e profissionais, permitindo a transição do conhecimento-para-prática e conhecimento-na-prática para o conhecimento-da-prática, bem como a passagem de uma posição periférica e individual do conhecimento para um saber construído no coletivo.

Palavras-chave: Formação de professores. Bases de Conhecimento. Comunidade Aprendizagem. Aprendizagem Colaborativa.

Resumen: Este estudio analizó la construcción del conocimiento profesional docente de residentes de Educación Física en el contexto del Programa Residencia Pedagógica en el seno de una comunidad. Participaron un profesor orientador, tres profesores colaboradores y 24 residentes (estudiantes en prácticas), que se reunieron semanalmente durante 18 meses en una dinámica de trabajo constructivo-colaborativo. Las fuentes de datos fueron informes, casos de enseñanza y portafolios reflexivos, producidos por seis residentes seleccionados deliberadamente. Los datos fueron triangulados y sometidos al análisis temático. Los residentes desarrollaron diferentes conocimientos, pero fueron las capacidades relacionadas al actuar profesional las que más se destacaron. Los dispositivos formativos contribuyeron para desarrollar la racionalidad reflexiva, crítica y comunicativa de los residentes. La comunidad ha demostrado ser un espacio de intercambio, de desarrollo de interacciones estrechas y horizontales entre diferentes saberes y profesionales, permitiendo la transición del conocimiento-para-práctica y conocimiento-en-práctica al conocimiento-de-la-práctica, así como el paso de una posición periférica e individual del conocimiento a un saber construido en la colectividad.

Palabras clave: Formación del Profesorado. Bases del Conocimiento. Comunidad Aprendizaje. Aprendizaje Colaborativo.

USE LICENSE

CONFLICT OF INTERESTS

The authors declare that there is no conflict of interest in this study.

AUTHORS' CONTRIBUTIONS

Janaína da Silva Ferreira: 1.Conceptualization: Construction of the theoretical background; objectives and research goals; 2. Formal analysis: application of formal techniques to analyze or synthesize study data; 3. Methodology: methodology development or design; 4. Investigation: conducting the investigation and research process, specifically performing data/evidence collection; 5. Project administration: responsibility for the management and coordination for the planning and execution of the research activity; 6. Writing, reviewing and editing.

Samuel de Souza Neto: 1.Conceptualization: Construction of the theoretical background; objectives and research goals; 2. Investigation: conducting the investigation and research process, specifically performing data/evidence collection; 3. Data curation: management of activities to annotate, cleanse data and maintain research data for initial use and later reuse; 4. Methodology: methodology development or design; 5. Project administration: responsibility for the management and coordination for the planning and execution of the research activity; 6. Supervision: leadership and supervision responsibility for the execution and planning of the research activity; 7. Writing and Editing.

Paula Batista: 1.Conceptualization: Construction of the theoretical background; objectives and research goals; 2. Data curation: management of activities to annotate, cleanse data and maintain research data for initial use and later reuse; 3. Supervision: leadership and supervision responsibility for the execution and planning of the research activity; 4. Validation: verification, as part of the activity or separately, of research results; 5. Visualization: preparation, creation and/or presentation of published work, specifically data visualization/presentation; 6. Writing and Editing.

ACKNOWLEDGMENTS

RESEARCH ETHICS

This research project followed the Resolutions 466/12 and 510/2016 of Brazil's National Health Council and approved by the ethics committee of UNESP/Rio Claro under protocol number 3.635.921.

HOW TO REFERENCE

EDITORIAL RESPONSIBILITY

Luiza Lana Gonçalves*, Carla Luguetti**, Cecília Borges***

* Monash University. Melbourne, Victoria, Australia.

** Institute for Health and Sport, Victoria University, Australia

*** Université de Montréal. Montreal, Canada.