

TYPES OF COLLABORATIVE CONTINUOUS PROFESSIONAL DEVELOPMENT IN PHYSICAL EDUCATION: A DIALOGUE

TIPOS DE DESENVOLVIMENTO PROFISSIONAL COLABORATIVO CONTÍNUO EM EDUCAÇÃO FÍSICA: UM DIÁLOGO 

LES TYPES DE DÉVELOPPEMENT PROFESSIONNEL CONTINU COLLABORATIF EN ÉDUCATION PHYSIQUE: UN DIALOGUE 

 <https://doi.org/10.22456/1982-8918.127398>

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Abstract: This paper presents a dialogue between researchers from three collaborative continuous teacher professional development (CCPD) projects, each of which involved a different theoretical framework and research design. Discussing our unique contexts and the CCPD approaches we used enabled us to engage in an appreciative inquiry, in which we sought to acknowledge and build upon the strengths of each project and consider possibilities for the future. Findings highlight complexities of CCPD at different levels from the small-scale to the large, requiring thoughtful planning and implementation. Promoting intimacy, organizing schedules and timetables, and combining different modes of support are challenges that require contextualized responses. There is a need for CCPD facilitators and researchers to consider not only characteristics of effectiveness when choosing a CCPD approach, but also alignment with their own personal beliefs and theories of learning, as well as the beliefs, interests, and needs of teachers in their local contexts.

Keywords: Professional Development. Physical Education. Collaboration. Community.

Received in: 03 Oct. 2022
Approved in: 21 Oct. 2022
Published in: 15 Dec. 2022



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1 INTRODUCTION

Over the past decade there has been some consensus about the characteristics of “effective” professional development. According to Darling-Hammond, Hyler and Gardner (2017) and Parker and Patton (2016), “effective” professional development:

- is collaborative and provides participants with tools, strategies and circumstances to engage in sustained collegial interaction;
- is embedded in the contexts in which educational practice occurs;
- provides participants with a sense of ownership in the process, often due to the identification of teachers’ specific needs, and;
- enhances teachers’ knowledge and skills in pedagogy and content to improve student learning.

Amongst these features, collaboration between teachers and facilitators as co-learners is crucial, highlighting teachers’ desires for sustained professional interaction.

There are several types of collaborative continuous professional development (CCPD) that can be designed and enacted, each with varying levels of evidence to support their use. Many tend to draw from versions of social learning theory, emphasizing that knowledge develops from learning through social interactions. While we cannot provide an exhaustive discussion in the sections that follow, we introduce examples of different types of CCPD evident in the physical education literature.

Collaboration is apparent in forms of CCPD centered around the concept of **learning communities**, including professional learning communities (PLCs) and communities of practice (CoPs). According to Stoll *et al.* (2006), PLCs are characterized by shared values and vision, collective responsibility, reflective professional inquiry, collaboration, and the promotion of group and individual learning. Within the context of schools, this may include a variety of actors, such as teachers, principals and pedagogical coordinators (VANGRIEKEN *et al.*, 2017). CoPs are a particular type of PLC, framed according to the theorizing of Wenger (1998). CoPs are grounded on an assumption that learning is situated (LAVE; WENGER, 1991) and comprises three main dimensions: joint enterprise, mutual engagement, and shared repertoire (WENGER, 1998). Distinguishing between these two types of CCPD is beyond the scope of this paper, however, it is worth recognizing that physical education researchers and facilitators of both approaches have emphasized that neither a PLC nor a CoP will just “happen” by putting professional colleagues in a group and asking them to collaborate (BENI; FLETCHER; NÍ CHRÓINÍN, 2021; PARKER *et al.*, 2010; PARKER; PATTON; TANNEHILL, 2012). This includes when teachers and researchers work collaboratively on a topic of common interest (BORGES *et al.*, 2017). Stoll *et al.* (2006) suggest that with time, patience, and effort, these CCPD approaches may carry strong impacts for teachers’ learning. In addition, learning communities have been shown to be beneficial for professional development through improving pedagogical practices, professional recognition, and improving student learning (SANCAR; ATAL; DERYAKULU, 2021).

Several types of CCPD extend one or more of the features of PLCs and/or CoPs. For example, **instructional coaching** is a form of a PLC characterized by co-planning, co-teaching, and co-reflecting (DESIMONE; PAK, 2017). The collaboration often occurs with teaching colleagues or local teaching consultants. While an instructional coach often has some power due to their position in a school or school board, their role is to facilitate teachers' learning by addressing teachers' specific concerns based on their needs and contexts (FLETCHER *et al.*, 2018). **Lesson study** is both similar and different to instructional coaching. It involves collaboration between teachers on agreed upon goals and proceeds through several cycles of identifying objectives, enacting a lesson, and discussing the lesson (SLINGERLAND *et al.*, 2021). While instructional coaching and lesson study can serve as powerful forms of CCPD for physical education teachers, both require significant investments of time, money, and other resources from teachers, their schools, and school districts.

Induction or **mentoring programs** are often framed as CCPD, typically placing new teachers with more experienced colleagues. This acknowledges the importance of CCPD across different stages of the career (SANCAR; ATAL; DERYAKULU, 2021). While there is a differential in power dynamics and levels of experience, mentoring programs tend to be most powerful when all involved (mentor and mentee) approach the relationship with a learning agenda (CAPEL; LAWRENCE, 2019). In physical education, induction and mentoring programs have been shown to support beginning teachers as they navigate school and professional cultures (ENSIGN; WOODS, 2017), while also helping to establish meaningful collegial relationships (RICHARDS; TEMPLIN, 2011), and promote the retention of new teachers (RIKARD; BANVILLE, 2010).

School-university partnerships facilitate collaboration between actors in schools and universities, particularly pre-service teachers, teachers, and teacher educators (FERRAZ; VIDONI; BOAS, 2021; HEROLD; WARING, 2018). These relationships can support how pre-service teachers learn from practicing teachers in local contexts beyond the university, while also supporting how teachers learn from and contribute to university programs. This type of structure can promote a continuum for the profession, strengthening the role that teachers can play in the teaching and learning activities of universities (FLETCHER *et al.*, 2020).

Action research can support teachers as researchers and strengthen collaboration between teachers and university researchers. The action research process follows the form of a spiral of recursive research cycles: planning, acting, evaluating, reflecting and re-planning (KEMMIS; MCTAGGART, 2000). The starting point is an existing situation or problem geared towards an action plan (CATROUX, 2002). Key principles suggest that action research should be: 1) collaborative, 2) carried out as much as possible in the natural environment and 3) endeavour to measure its impact on action (O'BRIEN, 2001; VAN TRIER, 1980). Tinning (1992) recognized a limited history of action research in PE and its potential to transform teaching, however, it has seen some resurgence in the last decade (e.g. CASEY *et al.*, 2018).

These approaches contain relatively formal structures, however, there are also informal types of CCPD. For instance, the rise of social media has meant that various platforms can serve as opportunities for CCPD that require initiation from the participant, not as a directive from an administrator. There are several benefits to this approach, including development of skills and the self-directed nature in terms of when and how to access; however, potential drawbacks include the quality of content and the discourses present in the virtual world (CARPENTER; HARVEY, 2020).

This list is not exhaustive but represents several common types of CCPD appearing in the physical education literature. As researchers and practitioners, we have various levels of involvement and exposure to these and other types of CCPD and wanted to identify ways in which we could learn from each other's experiences. We engaged in a dialogue, sharing our experiences of facilitating, enacting, and researching one particular type of CCPD. We wanted to reflect on how we could have used each other's ideas and approaches to think differently about how we could design and facilitate CCPD programs. In essence, we were engaging in our own informal type of CCPD by coming together as individuals with a learning agenda to develop our knowledge.

In the following sections we present several brief outlines of a particular type of CCPD that pairs in our group have facilitated. In each section, the pairs of authors reflect on how the other pairs' approaches might have led to different insights and outcomes in their own design. We engage in this dialogue as a potentially useful – but perhaps unorthodox – approach to sharing different types of CCPD and not as an exercise to identify a “best” approach.

2 METHODS

Our methodological approach is inductive. We started from our three experiences trying to identify conceptual landmarks, methodological and empirical approaches, as well as the contexts, the participants, the challenges or difficulties encountered, and contributions or lessons from our various projects. Inspired by an article by Casey and Larsson (2018), we engaged in a conversation about our experiences of CCPD in physical education. Our goal was to highlight the collaborations undertaken in these projects and their contributions and pitfalls. Rather than criticizing or critiquing the project of others, we asked ourselves: What can we learn from our respective experiences? In this way, our inquiry was appreciative, in that we sought to acknowledge and build upon the strengths that each of us brought in terms of our experiences, perspectives, and work in CCPD (ENRIGHT *et al.*, 2014).

Four meetings were held to write the first draft of this paper. Each meeting had a specific goal and served as a springboard for the next stage. In addition, several email exchanges and collaborative writing processes took place through the creation of a shared document. Chart 1 summarizes the key tasks done in each step and the documents resulting.

Chart 1 - Group tasks.

Virtual meetings	Activities	Documents
Getting to know each other (September 30, 2021)	<ul style="list-style-type: none"> • Introduction of each member of the group • Timeline of the project • Structure of the article • Suggestion of a dialogue 	Casey; Larsson (2018)
Sharing experiences (November 3, 2021)	<p>Explanation of the different themes of the special issue</p> <p>Discussion about the article outline:</p> <ul style="list-style-type: none"> • Importance of the Brazilian project; • Comparison of contexts, frameworks and learning; • Division of tasks. 	Before starting a conversation, we decide to write a short description about our projects, outlining general aspects (context, framework, timeline, activities, goals, challenges, positive outcomes, etc.) (500-1000 words).
Sharing projects (December 15, 2021)	<p>Description of each project</p> <p>Similarities and differences between the projects</p> <ul style="list-style-type: none"> • Identification of categories to compare and analyze each project; • Structure of the paper (content of the introduction and order of the different parts). 	Table with categories characterizing each project First draft of the paper
Writing process (February 5, 2022)	<p>Discussion about our projects (first draft)</p> <ul style="list-style-type: none"> • Structure; • Findings; • Challenges; • Structure of our conclusion (outcomes, challenges and "levels" of collaboration in each project). 	Second draft of the paper Adjustments Writing of the conclusion

Source : the authors

3 RESULTS

In Chart 2, we briefly present the context and several details about the CCPD that the pairs of authors designed and facilitated, for example: the theoretical framework used, the number and types of participants, the duration, activities and tasks of the project, the levels of collaboration (e.g. small group), and references to papers written by authors which interested readers might consult if they desire more specific information. Given our desire to forefront research from Brazil, we begin with the CCPD project designed and facilitated by Roraima and Roberto followed by Stephanie and Tim and finally Anne-Sophie and Cecilia.

Chart 2 - Contextual information about the three CCPD projects and their designs.

	Roraima & Roberto	Stephanie & Tim	Anne-Sophie & Cecilia
Context	Institutional (PE Course) PIBID project within an elementary and a middle school (Brazil)	Elementary schools (Ontario)	University, School board, Public Health Department partnership (Quebec)
CCPD Approach/Theoretical Framework	Mentorship, learning community, self-efficacy beliefs (BANDURA, 1997)	Communities of practice (CoP) (WENGER, 1998)	Collaborative action research (KEMMIS; MCTAGGART, 2000); CoP (KUNTZ <i>et al.</i> , 2013)
Participants	1 professor (also researcher), 2 supervising teachers, 16 pre-service teachers, 1 graduate student (researcher)	12 teachers, 2 researchers	3 researchers, 2 pedagogical counselors, 2 public health officials, 3 grad students, 12 teachers
Duration	2 years	15 months	3 years
Level of Collaboration	One-on-one support and small group meetings	Small group meetings	Large group meetings
Activities Involved	Group meetings, supervisory meetings, observations	CoP meetings, observations in teachers' classrooms	Meetings, workshops
Main References for readers to refer to	Costa Filho and Iaochite (2020)	Beni, Fletcher and Ní Chróinín (2021)	Borges <i>et al.</i> (2017)

Source : the authors

In the following sections, each pair of CCPD facilitators/designers reflects on their own CCPD approach, while also considering the ways in which the design and facilitation of the other approaches might have led to new insights if certain features were considered. First, Roraima and Roberto reflect on their approach, and consider the ways in which the designs of Stephanie and Tim, and Anne-Sophie and Cecilia might have supported different perspectives. This dialogical approach is repeated by Stephanie and Tim, and Anne-Sophie and Cecilia respectively, as each pair reflects on their experiences and CCPD designs in light of the approaches shared by others.

3.1 REFLECTION BY RORAIMA AND ROBERTO

Initial and continuing education official guidelines in Brazil have, over the past few years, reiterated the importance of acquiring knowledge and developing professional skills and competences (BRAZIL, 2002; 2019). The development of teacher self-efficacy beliefs (BANDURA, 1997; TSCHANNEN-MORAN; WOOLFOLK HOY, 2001) can help teachers select and value information important to their pedagogical practice, which will influence their perceptions of capacity and pedagogical actions (PAJARES, 1992). Initial training is an ideal period for promoting teacher self-efficacy through learning communities. Things that can support self-efficacy during initial training include opportunities to practice teaching, having student teachers share their experiences, and presenting knowledge about self-efficacy during theoretical and practical courses (COSTA FILHO; IAOCHITE, 2018; IAOCHITE; SOUZA NETO, 2014). When these

processes are engaged in collaboratively during the practicum or internships, they may support both future teachers and those who are more experienced (and who occupy a supervisory role for student teachers).

The Scholarships Institutional Program of Introduction to Teaching (PIBID) project in physical education at the UNESP Rio Claro, titled “Teaching practices in Physical Education for a healthy lifestyle at school” was aimed at facilitating collaboration amongst teachers to promote changes in the acquisition and maintenance of a healthy lifestyle for students in two partner elementary schools. We offered collaborative professional training among undergraduate students, school teachers and university professors, all of whom worked together to outline objectives, design action plans, implement actions and evaluate the results from the practices developed in schools.

The development of self-efficacy shifted positively and negatively at different moments during the project and was related to the perception of positive or negative experiences in the regency of classes at school (COSTA FILHO; IAOCHITE, 2020). Considering teacher professional development as a process (SANCAR; ATAL; DERYAKULU, 2021), the project reported above favored the development of participants in their different career moments. For future teachers, during initial training, the development of knowledge, skills and beliefs occurred at both the university and school. For supervising teachers, it has contributed to a process of continuous training in at least two dimensions reported: by guiding and providing feedback to future teachers on their practices, and in the analysis of their own practices, beliefs, and knowledge to guide and explain what, how and why they did what they did in their classes observed by future teachers. This was only made possible by the perception that they comprised a community, going beyond the individual, to a space of mutual trust, where there was freedom to share and reflect on aspects they developed in partnerships in physical education classes.

Developing and participating in learning community projects presents some challenges. Regarding organizational difficulties, the main challenge was finding available timetables for undergraduate students and supervising teachers so that the monitoring and the activities at the school could take place in partnership. Another challenge in this dimension was the permanence of scholarship students, some of whom gave up participating in the project, motivated by the perception that learning to teach is laborious and not worth the financial return offered by the program. This led to the replacement of some participants, which required training and induction processes in a project that was already underway. In addition, the lack of foreign language skills by the scholarship holders and the duration of the project due to the high workload of the highlighted physical education course posed challenges.

As CCPD, there is value in fostering collaboration amongst teachers at various career stages to review their pedagogical practices and to help, consciously and effectively, in offering situations that may be meaningful as well as to enable future teachers’ self-reflection in relation to their own skills, knowledge and abilities to proactively manage their practices.

Observing and briefly discussing the proposals put forward by Stephanie and Tim, and Anne-Sophie and Cecilia has helped us review some of our initial ideas. Regardless of contexts, the challenge of time seems to be a barrier for teachers to engage in learning communities. Both projects used digital information and communication resources to facilitate the meetings. In our project our communications were intimate – they were personal and face-to-face. However, some content could have been unraveled at a distance using digital technologies which may have facilitated more effective use of time.

From Stephanie and Tim's project, it was interesting to note that participants played an active role in directing the themes and discussions which supported the development of trust. In our project, this space emerged from the problems faced in schools by participants and from school administration. For example, in dealing with the topic of sexuality, a member of the local education authority supported these requirements. In future projects, the teachers can propose some themes based on their needs, instead of being initially based on only challenges identified in the research literature.

Anne-Sophie and Cecilia recognized the value of institutional support, especially from principals, in the involvement of teachers in CCPD and in developing proposals within the school. Although we consulted schools in our project, we did so via the physical education department. In projects that aim to promote healthy habits, it is important to not only have the support from school management but also their involvement.

It is common for researchers, even for those who research school contexts, to disseminate their work at scientific events and journals, which may value the knowledge produced by school actors. However, Anne-Sophie and Cecilia described a dissemination event that took place at the school, providing an opportunity for teachers to share their experiences. Not only can these events help to publicize projects, but they may also encourage other teachers to get involved in their own CCPD.

3.2 REFLECTION BY STEPHANIE AND TIM

Our most recent research on collaborative CCPD involved 12 elementary PE teachers in Ontario who were learning to implement a pedagogical innovation " the Meaningful PE approach " across two school years (BENI; FLETCHER; NÍ CHRÓINÍN, 2021). The primary aims of this research were to understand teachers' experiences of learning to implement Meaningful PE and of a CCPD initiative based on fostering a CoP (WENGER, 1998) that was designed to support their implementation.

During the first CoP meeting in both years, we presented Meaningful PE to teachers and modeled the approach in some mock lessons. In addition to CoP meetings, we also visited teachers' classrooms to observe their teaching. Teachers in this study identified the CoP structure and modeling of the approach as the most effective strategies for supporting their learning about and implementation of Meaningful PE. The primary challenges we faced included scheduling group meetings around teachers' busy schedules and fostering a sense of community and trust within

the group. Given that many of the teachers already knew one another, we were initially somewhat peripheral to the group rather than fully integrated members. Consequently, teachers were sometimes reluctant to share their practice or challenges with us. In addition, in Year Two, teachers were prevented from participating due to province-wide labor negotiations and the mandated closure of schools in response to covid-19. Both situations served as significant barriers, resulting in a sooner-than-expected end to the study.

There are similarities and differences between Roraima and Roberto's approach to collaborative CCPD and that which we used. Importantly, we were carrying out these initiatives in different contexts, both geographically and in terms of teachers' career stages (our work only involved in-service teachers). Further, while our approach involved intentionally facilitating a CoP, Roraima and Roberto view a community of learners as having developed organically out of their mentorship-based approach. In other ways our projects were alike in that they involved a similar number of participants across two years, and while the challenges we faced were unique to our contexts, we were challenged by organizational and functional dimensions, particularly related to the time required to invest in the project and managing the different agendas and time constraints people were working within.

When evaluating our collaborative CCPD design considering Roraima and Roberto's, there are several things we are taking away. One is the potential value of a mentorship-based approach. While participants in our study highlighted the structure of the CoP as being valuable for their learning, they also desired more one-on-one interactions with fellow teachers, much like a critical friendship. We see value in the way Roraima and Roberto combined a learning community with opportunities for one-on-one interaction and co-teaching. Further, pre-service teachers may also benefit from being involved in this type of work. We have introduced pre-service teachers to Meaningful PE in their teacher education courses, however, if they learned alongside experienced teachers, there may have been opportunities for richer and more authentic reflective and dialogic CCPD experiences for both groups. At the same time, because some of our pre-service teachers were exposed to Meaningful PE for several years at the university, they may also have acted as mentors to practicing teachers, in a way 'upending' the traditional mentoring relationship.

Something else reported by Roraima and Roberto we could have used to good effect in our research is to begin with teachers' beliefs. Each teacher's beliefs about teaching, about the purposes of physical education, and of school more generally were crucial factors in influencing the ways in which Meaningful PE was or was not taken up. In Beni, Ní Chróinín and Fletcher (2021), we suggested that beginning with a "vision" exercise may have been a beneficial starting point to help teachers identify ways in which Meaningful PE may or may not have aligned with their goals and values in teaching. Although Roraima and Roberto were approaching their research theoretically from self-efficacy perspective, the common and central role of beliefs in shaping how teachers engage with CCPD is an important reminder to us and others who may be facilitating CCPD with teachers.

In reflecting on Anne-Sophie and Cecilia's project, we are struck by the use of action research and a CoP. While we also aimed to foster an intentional CoP in our project, we struggled with fostering trust. We often found that teachers tended to view us as researchers and themselves as teachers, indicating that our respective identities impacted upon how we went about engaging in the CCPD process. Action research may have positioned the teacher participants as researchers and offered an avenue for fostering a stronger sense of community (see also FERREIRA; PARKER; PATTON, 2022). This may also have involved the researchers actively supporting teachers in their lessons in schools, positioning the researchers as teachers. In addition, we appreciate the challenges and recognize the value of involving a broad group of stakeholders in the CCPD process. We have wondered how we might include more stakeholders and 'scale up' CCPD initiatives without losing the sense of community. We see the combined action research-CoP design and the longitudinal nature of Anne-Sophie and Cecilia's project as strengths toward this end.

3.3 REFLECTION BY CECILIA AND ANNE-SOPHIE

Our project took place in Montreal, between 2013-2016, in the context of the CCPD program for teachers set up by the Ministry of Education from Quebec: *Chantier 7*. The aim was to support universities in the design, deployment, and evaluation of CCPD projects carried out in partnership with school boards. Our project involved a collaborative action-research combination and was targeted at helping teachers implement the third competency of curriculum: "to adopt a healthy and active lifestyle" (CANADÁ, 2001; 2004).

From a CCPD perspective, this project was designed to create a CoP (WENGER, 2005) in physical education. Our framework was based on both action research (KEMMIS; MCTAGGART, 2000; ROY; PREVOST, 2013); and collaboration amongst teachers and researchers within a CoP (CATROUX, 2002; KUNTZ *et al.*, 2013). We were looking for an authentic change (BUTTLER *et al.*, 2004) in teachers' practices, something that emerged from their needs and concerns and their desire to change and improve their practices towards students.

The project took place over three years, with four day-long meetings held each year and a one-day dissemination-seminar open to 40 other teachers to close the project. Throughout the process, we tried to act as guides, as equal as possible, based on sharing and co-construction of knowledge to support teachers' projects. Our support was therefore mainly behind the scenes. In line with the principles of action-research (plan, act and observe, reflect, replan; KEMMIS; MCTAGGART, 2000), we carried out systematic evaluations of the project by surveying teachers at the end of each meeting, laying the foundations of the next meeting based on requests expressed by the teachers. The same principles of action-research were applied also in teachers' projects. Despite the interest and enthusiasm of the teachers, several aspects made the full development of this project difficult, particularly its continuity and sustainability.

In reflecting on Roraima and Roberto's project, the first point we noted was the importance of time and money. In our case, financial support was important because it allowed teachers to be released from their duties for a day to participate in the meetings.

In addition, it required significant involvement in terms of preparation, implementation, and follow-up. In this regard, the project was energy- and time-consuming for them. In addition, time was needed for building trust between community members, as reported in both Roraima and Roberto's and Stephanie and Tim's experiences. Trust between members is an important foundation for CCPD in the development of common goals and is also the basis of action-research. Nevertheless, it was not effortless to build trust along the way, especially considering the diversity of team members' expertise and background (public health, physical education, teaching), but also the cultural differences between the Anglophone and Francophone teachers' communities. Moreover, like the other projects, teachers' participation was affected by constraints in their work. For example, labor negotiations delayed the project in the third year, and other life events had an impact on participation. Some participants left, while others joined, describing the experience like "jumping on a moving train".

The second point relates to a mentoring approach. We did not prioritize this approach believing that collaboration and mutual assistance during the meetings or by email was enough to support the teachers' action research projects. However, some participants suggested we make observations in their schools and follow teachers more closely, while others disagreed that this was necessary. For those who did not want observations, we hypothesize that it might reflect a lack of confidence and trust, or fear of being judged by researchers and scholars. This also raises issues about our identities as researchers and our capacity to effectively follow teachers in the field, points also made by Stephanie and Tim.

The third point considers teachers' beliefs. Like Roraima and Roberto, we began by working on teachers' conceptions about students' lifestyles, their competencies, the role of physical educators and physical education in school, society, and students' lives. These discussions were important first steps towards identifying teachers' perceptions and in creating a common set of goals for the CCPD. The degree of interdependence between participants was evident across all of our projects and, at least during the time period involved in the projects, enabled the sharing of common knowledge and goals, and sometimes even built knowledge about their work and themselves. In addressing teachers' beliefs, we also focused on best practices and daily challenges they faced to develop the third competency. This information allowed us to build the content for the workshops, including the impact of curriculum reforms that affect teachers and their practices, which requires profound rather than simple changes to the way teachers teach. However, we do not know if the information shared in the workshops has transformed or shaken their beliefs in a sustainable way. Thus, following the participants beyond the research period may provide important information about the ways in which the CCPD did or did not profoundly impact their practice.

4 CONCLUSION

We conclude by reconsidering types of collaboration in CCPD. As we can see in the three projects, it is not possible to design and lead a CCPD, a CoP or a collaborative action-research without some degree of interdependence between the

participants. It should also be noted that different types of collaboration have been established throughout these three projects within a continuum between independence and interdependence (LITTLE, 2003) in the pursuit of common goals or joint enterprise (WENGER, 2005). Establishing shared aims entails trust and collaboration, equal or similar values and goals, and common interests and beliefs about teaching and learning. Without collaboration, joint negotiation of CCPD action plans (which includes the identification of problems, decision-making on the operations to be carried out, participation in summaries, data or measurement collection, definition of strategies and working methods, and finally, adjustments to the initial plan) the sustainability of the CCPD process is compromised. However, different kinds of collaboration can be built, based on particular features of different types of CCPD, including instructional coaching, lesson study, mentoring, school-university-partnerships, and action-research programs. In their daily work, teachers can share ideas, tools, strategies, difficulties, and support each other. They can plan together, and they can observe each other's practices. However, in the case of CCPD based in a collaborative framework, the frequency, the intensity of collaboration and the degree of interdependency amongst teachers and between teachers and researchers are more important, since the main goal is, in some way, to change teachers' beliefs and improve teachers' practices based on knowledge derived from research and validated by teachers' practice and vice-versa. This idea is strong and attractive, because as Christianakis (2010, p. 114) says: "Through collaborative work and dialogue, practitioners and researchers can build more robust educational theories and practice", which can improve teachers' and researchers' practices, and students' educational experiences and outcomes.

Nevertheless, this is not a simple idea to construct or to put in practice, because teachers and researchers are often confronted by certain hierarchies related to the knowledge resulting from research with practitioners. This can lead to goals not aligning or trust not being built as teachers may fear being judged or that their opinions are not taken seriously. Researchers also sometimes feel unsettled in their convictions or may miss opportunities to contribute when they focus only on listening attentively. Teachers also build hierarchies among themselves and do not all share the same convictions and ideas.

As we draw conclusions across our three designs, we note that, despite using characteristics of effective CCPD to guide the design of our initiatives, each of our projects took shape in different ways in relation to our unique contexts, research questions, theoretical preferences, and the participants. In considering context, we suggest one of the key factors in the shaping of our designs was the magnitude of our projects, in relation to the intimacy of the collaborative interactions, rather than the overall size of the project. For instance, Roraima and Roberto worked at an intimate level with mostly one-on-one design within a large-scale project, Stephanie and Tim worked at a level of primarily small group interactions, and Cecilia and Anne-Sophie worked at a level involving large group interactions amongst not only teachers and researchers but other contributors that spanned across stakeholder groups and policy areas.

For Roraima and Roberto, the local nature of their project meant that the proximity between the participants was an enabling factor for the development and organization of the project through mentoring. In addition to CCPD for mentor teachers, the project also served as an induction process for future teachers. On the other hand, as a local project, there was difficulty in mobilizing work organizational elements, such as modifying the schedules of school teachers and university subjects to allow more time and interaction between participants. The involvement of others (e.g. school administration) is necessary to allow the flexibility of teachers' work and schedules to get involved in their own training.

Stephanie and Tim's intention was to build on previous intimate CCPD projects (involving one teacher), engaging a larger group of teachers in ideas about Meaningful PE. While a CoP design was in many ways ideal for this, teachers expressed a desire for a more intimate CCPD experience within the context of the larger group where they might work more closely with one or two other CoP members in addition to the larger group. Further, they found that building trust and confidence and hearing from everyone was time-consuming and challenging within the group. Thus (and as Cecilia and Anne-Sophie demonstrated), balancing the scaling up of a CCPD initiative with individual teachers' needs and desires for one-on-one support should be considered in designing and facilitating these types of CCPD initiatives. Yet as Roberto and Roraima shared, types of CCPD that offer more intimate interactions are not without their own challenges.

For Anne-Sophie and Cecilia in their large-scale work at the provincial level, the largest challenge was to bring together the background, experiences, knowledge and expectations of participants from different groups: public health, physical education teachers, and university-based researchers (including students). This resulted in difficulties in combining different kinds of support for each member. For example, some teachers showed an interest in being observed at school (closer monitoring), while others preferred more remote support. In the same way, it was a challenge for researchers to closely follow and to provide effective support to teachers in the implementation of a range of projects in their schools. This quickly became very demanding and time consuming. Further, although the action research projects had a common goal (the promotion of an active and healthy lifestyle amongst students), they differed in many ways: their initiation, the level of teaching, primary or secondary school. In addition, at times the differing perspectives of various stakeholders in the group impacted trust and confidence building during the project. These factors highlight the challenges of working with a broad range of participants in CCPD.

Although there were reasons for the differences in our designs, evaluating the research designs of others allowed us to identify ways we could potentially adjust and improve upon our facilitation of collaborative CCPD in the future. Our collective findings highlight the complexities of CCPD at different levels from the small-scale to the large, all of which require thoughtful planning and implementation. CCPD facilitators and researchers not only have to choose from an array of appropriate types of CCPD that address characteristics of effectiveness but that also align with

their own personal beliefs and theories of learning, as well as the beliefs, interests, and needs of teachers in their local contexts.

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Resumo: Este artigo apresenta um diálogo entre pesquisadores de três projetos de desenvolvimento profissional continuado e colaborativo (DPCC) de professores, cada um apoiado por um referencial teórico e desenhos de pesquisa diferentes. Os resultados destacam algumas complexidades do DPCC em diferentes níveis, desde o de pequena ao de larga escala, agenciando planejamento e implementação cuidadosos. Promover a proximidade, organizar horários e combinar diferentes modos de suporte são desafios que requerem respostas contextualizadas. Discutir nossos contextos únicos e escolhas em relação às abordagens do DPCC utilizadas nos permitiu realizar uma investigação apreciativa, buscando reconhecer e desenvolver os pontos fortes de cada projeto e considerar possibilidades para futuras propostas. É necessário que facilitadores e pesquisadores ao escolherem uma abordagem de DPCC considerem não apenas a eficiência, mas também o alinhamento com suas próprias crenças pessoais e teorias de aprendizagem, bem como com as crenças, interesses e necessidades dos professores em seus contextos locais.

Palavras-chave: Desenvolvimento profissional. Educação Física. Colaboração. Comunidade

Résumé: Cet article présente un dialogue entre les chercheurs de trois projets de développement professionnel continu collaboratif (DPCC) utilisant des cadres théoriques différents. Les résultats mettent en évidence la complexité du DPCC, que ce soit de petite à grande échelle, et soulignent l'importance d'une planification et d'une implémentation réfléchies. Favoriser la proximité, gérer les emplois du temps et combiner différents modes d'accompagnement sont des défis qui nécessitent des réponses contextualisées. Discuter des contextes uniques et des choix effectués concernant les approches de DPCC préconisées nous a permis de nous engager dans une enquête d'appréciation. Nous cherchions ainsi à reconnaître les forces de chaque projet et à envisager des possibilités pour l'avenir. Il est nécessaire que les facilitateurs et les chercheurs, lorsqu'ils choisissent une approche de DPCC, tiennent compte non seulement de l'efficacité, mais aussi de leurs propres croyances et théories de l'apprentissage, ainsi que des préférences et des besoins des enseignants.

Mots-clés: Développement professionnel. Éducation Physique. Collaboration. Communauté.

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CONFLICT OF INTERESTS

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

AUTHOR CONTRIBUTIONS

Roraima Alves da Costa Filho: Formal analysis, Investigation, Visualization, Writing – original draft.

Stephanie Beni: Formal analysis, Investigation, Visualization, Writing – original draft.

Anne-Sophie Aubin: Formal analysis, Investigation, Visualization, Writing – original draft.

Roberto Tadeu Iaochite: Conceptualization, Formal analysis, Investigation, Supervision, Writing – review & editing.

Tim Fletcher: Conceptualization, Methodology, Formal analysis, Investigation, Supervision, Writing – review & editing.

Cecilia Borges: Conceptualization, Formal analysis, Investigation, Supervision, Writing – review & editing.

FUNDING

This study was not supported by funding sources.

HOW TO REFERENCE

COSTA FILHO, Roraima A. da; BENI, Stephanie; AUBIN, Anne-Sophie; IAOCHITE, Roberto Tadeu; FLETCHER, Tim; BORGES, Cecília. Types of collaborative continuous professional development in Physical Education: a dialogue. *Movimento*, v. 28, p. e28064, 2022. DOI: <https://doi.org/10.22456/1982-8918.127398>

EDITORIAL RESPONSIBILITY

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