WHAT RESEARCH TELLS US ABOUT EFFECTIVE CONTINUING PROFESSIONAL DEVELOPMENT FOR PHYSICAL EDUCATION TEACHERS

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Nearly a century ago, John Dewey (1916) remarked that if we teach today as we taught yesterday, children are robbed of today and tomorrow. We contend the same could be said about the continuing professional development (CPD) of teachers. Yet, although there is a growing recognition of the importance of CPD for teacher growth, numerous questions remain about the nature of optimally effective CPD.

In teaching, CPD refers to a variety of educational experiences designed to improve teachers’ practice and pupils’ learning outcomes (Darling-Hammond & McLaughlin, 2011). Throughout their careers, teachers experience a vast array of CPD activities with the potential to enhance their knowledge, skills, and dispositions, thus improving practice and contributing to their growth as professionals. Historically, much CPD was rather passive in nature. The most commonly reported formats were school based in-service days, structured workshops, conference attendance, and university-linked courses. Over the past decade, however, CPD approaches that view teacher learning as, “interactive and social, based in discourse and community practice” (Desimone, 2011, pp. 68–69) have emerged. These CPD formats highlight formal and informal learning within communities.

Defining continuing professional development

CPD refers to a variety of educational experiences related to an individual’s work and is designed to improve practice and outcomes (Darling-Hammond & McLaughlin, 2011). These opportunities may be voluntary or mandatory, individual or collaborative, and formal or informal (Desimone, 2011). Nabhania, O’Day Nicolas, and Bahous (2014) identify several embedded models of CPD shown to enhance teaching practices: action research/inquiry, networking, coaching strategies, and self-monitoring/self-reflection. Examining these strategies and their
possible impact on CPD is a worthwhile endeavor as these more contemporary iterations of CPD are considered a powerful mechanism for teacher growth and development.

While many points can be taken from the professional development literature there is surprisingly little agreement about what constitutes ‘effective’ CPD. Guskey (1995), among others, has argued that each individual teacher needs an ‘optimal mix’ of formats and approaches. This argument raises further questions about the purposes of CPD and the relative effectiveness of different approaches at different career stages.

Depending on the CPD’s purpose, the context, and school culture within which it resides, there are numerous viewpoints on characteristics defining effective CPD. In one instance, effectiveness may relate to teacher engagement or the extent to which the environment and actions of the CPD process increase teacher commitment. In other cases, CPD might be linked to teacher development and improved practice. Effectiveness also may relate to CPD’s impact on improving students’ cognitive, psychomotor, and affective learning outcomes. With such varying purposes it is easy to see how the concept of ‘effective’ CPD is somewhat contested and diffuse in meaning. In line with DiPaola and Hoy’s (2014) goal for CPD as “building the capacity of teachers to help students learn” (p. 101), we argue, however, that effective CPD can be linked to teacher engagement, teaching practice, and student learning. The intent of this chapter is to provide a comprehensive overview of the current international knowledge base on CPD for physical education teachers (PE-CPD), to consider questions about effectiveness and their implications for future PE-CPD design, and to identify areas for further investigation.

**Historical overview**

Inquiry into PE-CPD is relatively new. Early beginnings in the United States included descriptions of two programs. In the first, Anderson (1982) and his students at Teachers College developed and studied CPD for local school districts, while the second, ‘Second Wind,’ was a CPD resource for PE teachers in the Massachusetts area (Griffin & Hutchinson, 1988). Two doctoral dissertations were among the first empirical PE-CPD studies in the USA. In 1983, O’Sullivan’s dissertation documented changes in selected teaching behaviors as a result of systematic data collection and discussion. Faucette’s (1984) dissertation investigated enhancers and inhibitors of in-service education. She continued her line of research addressing principals’ roles in CPD (Faucette & Graham, 1986) linking elementary PE teachers’ concerns to their implementation of changes proposed within the CPD program (Faucette, 1987). By the early 2000s, four major CPD projects added to the emerging literature: the Franklin Academy of Physical Education (a PDS school in Columbus, Ohio) (Stroot, O’Sullivan, & Tannehill, 2000), the Saber Tooth Project in Nebraska (Ward, 1999), the South Carolina assessment project (Rink & Williams, 2003), and Armour and Yelling’s (2004) investigation into the provision of PE-CPD in the UK.

These early projects yielded two foundational CPD variables shaping contemporary CPD research. First, CPD process investigations provided clear pictures of barriers to and facilitators of successful CPDs (e.g., Armour & Yelling, 2004; Doutis & Ward, 1999; Ha, Lee, Chan, & Sum, 2004; Kirk & MacDonald, 1998; Pissanos & Allison, 1996; Pope & O’Sullivan, 1998; Rovegno & Bandhauer, 1997; Schwager & Doolittle, 1988; Stroot et al., 2000). Second, the majority reported teachers’ perceptions of the impact of CPD (Faucette & Graham, 1986; Ha et al., 2004; Kirk & MacDonald, 1998; Schwager & Doolittle, 1988), although these researchers did not indicate the actual CPD’s impact on teaching practices or student learning.
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Theoretical frameworks for examining teachers’ professional development

Macdonald et al. (2002) offered five perspectives within which to situate PE-focused pedagogical research: positivist, interpretive, socially critical, poststructuralist, and feminist. A small number of experimental CPD studies used a positivist perspective with systematic observations of behavior followed by planned interventions (e.g., McKenzie, Alcaraz, Sallis, & Faucette, 1998; O’Sullivan, 1983). Similarly, a few poststructuralist researchers sought to understand technologies of power in relation to CPD (e.g., Macdonald, Mitchell, & Mayer, 2006). To date, very few scholars have used socially critical or feminist perspectives to study PE-CPD.

Instead, most PE-CPD researchers have used interpretive perspectives. These perspectives are rooted in “the premise that social organizations are constructed based on purposeful actions of individuals as they negotiate their social roles and define status within the collective social group” (Macdonald et al., 2002, p. 138). Falling within the interpretive perspective, social constructivist theories are frequently utilized for examining teachers’ CPD both historically (e.g., Pissanos & Allison, 1996; Rovegno & Bandhauer, 1997) and recently (e.g., Armour & Yellin, 2007; Makopoulou & Armour, 2011a; Patton, Parker, & Pratt, 2013). While multiple definitions of constructivism exist, Fosnot (2005, p. 34) summarizes constructivist learning as “an interpretive, recursive, non-linear building process by active learners interacting with their surround – the physical and social world.”

Situated learning theory, a social constructivist approach to learning that underpins the concept of communities of practice (CoP), provides a meaningful framework for examining teachers’ ongoing CPD (e.g., Deglau & O’Sullivan, 2006; Kirk & Macdonald, 1998; Parker, Patton, Madden, & Sinclair, 2010). Lave and Wenger’s (1991) model of situated learning proposes that learning involves a process of CoP engagement, emphasizing the relationship between knowledge and situations in which it is acquired and used. As CoP develop their own understandings of their practices and profession, this framework allows researchers to examine places and spaces where teachers engage in actions about their work with students.

Current trends and issues

Effective CPD is on-going and sustained

Most CPD encourages teachers to change some aspect of their practice, ultimately requiring them to acquire new knowledge to foster increased student learning (Vetter, 2012). Traditional one-shot CPD formats may provide teachers with information, yet it is clear that these “forms of CPD provision ... are often ineffective in supporting teachers to learn in ways that can enhance practice” (Armour & Yellin, 2007, p. 178). Professional development of this type is unlikely to help teachers to become continuous learners and innovative thinkers.

Scholars argue that to support teachers CPD must be on-going, sustained, and reflective (Betchel & O’Sullivan, 2007; Parker et al., 2010; Parker, Patton, & Tannehill, 2012). Moreover, as many teachers work largely in isolation, they find it difficult to identify opportunities to engage in critical reflection (O’Sullivan & Deglau, 2006). Thus, long-term CPD is best punctuated by opportunities to work collaboratively with others on-site to practice changes to teaching. Developing teachers’ interest and capacity in such dialogue requires time if teacher learning is to be supported and nurtured (O’Sullivan & Deglau, 2006).

On-going and sustained CPD in-and-of-itself appears to be a necessary but insufficient condition for teacher growth. Instead, it is important to allocate sessions to time intensive CPD pedagogies. These pedagogies provide teachers with opportunities to learn new pedagogical
skills (Ince, Goodway, Ward, & Lee, 2006) and transfer skills between contexts (Petrie, 2010). As a result teachers more fully understand the change process, better engage with the CPD program, gain a sense of ownership, and value the changes undertaken (Murphy & O’Leary, 2012; Parker et al., 2010; Patton & Griffin, 2008a, 2008b).

Furthermore, sustained CPD facilitates the development of community, another essential component for effective CPD (Atencio, Jess, & Dewar, 2012; Keay & Lloyd, 2009; Parker et al., 2010). When studying a Scottish CoP designed for primary specialist PE teachers, Atencio et al. (2012) found problems when this CPD was subsequently expanded to a large scale, centrally driven project. The expansion resulted in a series of one-off, short duration workshops that did not replicate the former sense of community, ownership, and empowerment in the original program. Teachers, instead, reported feeling isolated and marginalized in their practice.

**Effective CPD is based on teachers’ needs and interests**

When CPD provides teachers with opportunities to participate in decision-making about what and how they will learn, and how they will use these knowledge and skills, teachers report increased ownership of and commitment to CPD (Armour & Yelling, 2007; Deglau & O’Sullivan, 2006; Parker et al., 2010; Tannehill & Murphy, 2012). This teacher-centered CPD approach does not limit the agenda to local teacher-generated content; instead, effective CPD addresses the wider political and structural schools requirements while simultaneously acknowledging teachers’ needs and interests. Easton (2008) argues that the most powerful active learning opportunities are embedded in teachers’ work, beginning with teachers’ assessments of their students’ needs and identifying their own areas for learning. PE research indicates that effective CPD encourages teachers to take an active role in shaping their practice by initiating, sustaining, and directing CPD content and focus (Makopoulou & Armour, 2011b).

Evidence suggests that CPD is most relevant when it focuses on teachers’ real work in schools with young people, addressing their unique school contexts, and acknowledging teachers’ prior knowledge and experience. Contextually based CPD responds to local conditions and can be delivered in a variety of formats and modes to meet the wide range of teachers’ learning needs. Importantly, high quality CPD successfully balances teachers’ needs with a broader vision for the CPD initiative within the wider educational context (O’Sullivan & Deglau, 2006; Parker et al., 2010). Hunuk, Ince, and Tannehill (2012) found that participation in teacher-centered CPD focusing on specific students’ needs resulted in changed teaching practices and culture. As a result, pupils increased their engagement in PE, triggering continued teacher professional and personal learning. O’Sullivan and Deglau (2006) reported that when teachers are empowered and treated as professionals and leaders, with meaningful control over the substance of CPD experiences, they are more willing to share their ideas and learn from each other (Armour & Yelling, 2007; Casey, 2012; Patton et al., 2013).

**Effective CPD includes opportunities within learning communities**

There is growing acceptance of the benefits of communities of practice (CoP) that extend opportunities for teacher learning beyond the workplace (Atencio et al., 2012; Deglau & O’Sullivan, 2006; Hunuk et al., 2012; Parker et al., 2010). Within these structures, teachers learn from and with one another, growing a culture of collaboration (Duncombe & Armour, 2004). Known by a variety of names (e.g., teacher inquiry communities, professional learning communities, CoP) these communities all focus on teacher learning. Among the most studied teacher collectives is the concept of the CoP, characterized by a common purpose, shared
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social practices and engagement, and a collective repertoire of experiences, practices, and stories (Wenger, 1998). Through CoP, teachers developed curriculum (Parker et al., 2010), designed CPD to meet their unique needs (Tannehill & Murphy, 2012), overcome contextual factors that impeded their use of pedagogical models (Goodyear & Casey, 2015), and changed their pedagogical practices (Hunuk et al., 2012; Parker, Patton, & Sinclair, 2016; Patton et al., 2005). Within a CoP, learning can be deep, focused on growth, and grounded in an understanding of teacher practice (Parker et al., 2012). In some cases the result is sustained pedagogical and curricular innovation over time (Deglau & O'Sullivan, 2006; Parker et al., 2016).

Communities of practice also have the capacity to engender camaraderie and respect between participants (Parker et al., 2012), providing safe environments for risk taking, reflecting on failures as well as sharing successful programs and practices (Wenger, 1998). This environment facilitates the creation of a shared vision through debate about key issues, theory, and practice (Parker et al., 2010), provoking “critical and even uncomfortable discussions in order to challenge teachers’ pre-existing views of physical education” (Atencio et al., 2012, p. 127). When examining CPD provision in the UK, Keay and Lloyd (2009) reported that CoPs were “seen by most providers as a valuable networking opportunity that might alleviate feelings of isolation and have a positive impact on their work” (p. 669) and that, when developed appropriately, led to increased professionalism.

Because communities of practice evolve in unpredictable and non-linear ways, often in relation to contradiction and change (Atencio et al., 2012), their development and maintenance is rarely easy. Effective creation and continuance of CoP appear to be related to many factors including: levels of support, catalysts for change, visions for student learning, understanding personal and professional relationships, and desires to engender a sense of empowerment (Parker et al., 2010; Parker et al., 2012). Conversely, if all or most of these aspects are not present, CoP may fail to achieve agreed-upon goals (Atencio et al., 2012).

Effective CPD are supported

CPD should enhance teachers’ engagement in lifelong learning. To achieve this goal, administrators need to provide continuous support to facilitate teachers’ efforts to alter their teaching (Armour, 2010). Unfortunately, adequate support is not always a component of CPD. In many cases, traditional CPD have been fragmented, creating a gap between teachers’ aspirations for pupils and the CPD availability and support (Armour & Makopoulou, 2012; Armour & Yelling, 2004).

Despite many barriers to effective CPD, considerable evidence exists that effective CPD is possible with adequate support. Supporting factors identified in CPD literature include time, support from other teachers and key stakeholders, and resources. Time during teachers’ regular working hours to engage in professional learning is an important (and often neglected) support for effective CPD (Parker et al., 2012). Time can come in several forms including time away from teaching to observe others teach, share, and learn new skills and strategies, and experiment with new curricular ideas (Betchel & O’Sullivan, 2006; Deglau & O’Sullivan, 2006). When CPD policies or projects build in time for collaborative work during regular school hours, teachers can engage in intensive and sustained professional learning activities (Parker et al., 2010; O’Sullivan & Deglau, 2006).

Scholars also point out that effective CPD is characterized by support from other teachers and key stakeholders (e.g., Armour & Makopoulou, 2012; Betchel & O’Sullivan, 2007; Parker et al., 2010; Pratt, 2015). Further, in effective CoP, they identify the importance of teachers helping teachers (Armour & Yelling, 2004), collective participation (Armour & Makopoulou, 2012),
and mentoring (McCaughtry, Cothran, Hodges-Kulinna, Martin, & Faust, 2005; Patton et al., 2005). This type of collective participation encourages sharing knowledge, providing the basis for peer support while stimulating teacher reflection (Pratt, 2015; Sinelnikov, 2009). In addition, principals or head teachers (Betchel & O’Sullivan, 2007), university partners (Parker et al., 2010; Ward, 1999; Ward & O’Sullivan, 2006), other school administrators (Parker et al., 2010; Prusak, Pennington, Graser, Beighle, & Morgan, 2010), and students (Betchel & O’Sullivan, 2007) are highly influential when encouraging teachers to make and sustain CPD-related changes to their practice. Lastly, research confirms that support in the form of equipment resources enables teachers to improve their instruction (McCaughtry, Martin, Hodges-Kulinna, & Cothran, 2006; Ward & O’Sullivan, 2006).

**Effective CPD acknowledges teachers as learners in an active and social environment**

A key factor inhibiting teachers’ ability to learn and change their practices is being treated as ‘passive learners’ (Makopoulou & Armour, 2011a). Teachers should be treated as active learners, instead of being ‘trained’ to be compliant (Easton, 2008). In PE, an essential goal of CPD is to help teachers view themselves as active (Armour, 2010; Makopoulou & Armour, 2011b). This requires teachers to conceptualize their learning as an intentional, dynamic, social, and active process. For this type of learning to occur, effective CPD focuses on inquiry and reflection, with teachers constructing their own meaning and understanding through social engagement in relevant CPD tasks and activities (O’Sullivan & Deglau, 2006; Patton, Parker, & Neutzling, 2012).

The crux of active learning environments is providing opportunities for teachers to engage in CPD activities, such as action research (Casey, 2012), observing and receiving feedback on teaching (Sinelnikov, 2009), and making presentations and/or writing for publication (Deglau & O’Sullivan, 2006; Patton et al., 2013). The format for these activities includes group discussion (Deglau, Ward, O’Sullivan, & Bush, 2006), chat rooms and use of social media (Goodyear, Casey, & Kirk, 2014; Martin, McCaughtry, Hodges-Kulinna, & Cothran, 2009), as well as observing expert teachers and/or being observed while teaching (Martin et al., 2009; Sinelnikov, 2009), and developing curriculum (Parker et al., 2010). Arranging for teachers to play a central role in designing and implementing initiatives for their own learning supports active participation (O’Sullivan & Deglau, 2006) and encourages continued involvement in the design of their own learning.

A critical factor in the social nature of teacher learning is the development of positive, trusting, personal, and professional relationships among stakeholders (Armour, 2006; Patton et al., 2013). Armour and Yelling (2007) reported that teachers placed a high value on learning collaboratively in informal networks or communities. Similarly, Keay (2006) argued that CPD providers need to recognize the importance of collaborative learning for teachers and actively incorporate opportunities for its development. Participating in informal social events as an element of CPD allows teachers and facilitators to begin to know each other on a more personal basis, helping to enhance trust and build strong collegial relationships (Parker et al., 2010; Ward & O’Sullivan, 2006).

**Effective CPD enhances teachers’ pedagogical skills and content knowledge**

Armour and Yelling (2004) point out that effective PE-CPD is discipline-specific, allowing teachers to engage with a set of teaching, assessment, observation, and reflection experiences focused on “curriculum and pedagogy for learning in physical education” (p. 109). Such activities provide learning experiences related to teachers’ daily work, affording opportunities for
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teachers to consider why and how the content they offer their students is organized and delivered (O’Sullivan & Deglau, 2006). These content and pedagogy-specific CPD opportunities stimulate the teachers’ interest, encouraging their greater participation and facilitating change toward inclusion of content knowledge and effective teaching practices (e.g., Hunuk et al., 2012; Patton & Griffin, 2008a).

Hunuk et al. (2012) found that through participation in a CoP, teachers increased their health related fitness (HRF) and assessment knowledge. Similarly, in a study of middle school PE teachers, Patton and Griffin (2008a) reported increased alignment between instructional and assessment practices. In work with urban teachers, CPD has resulted in increased self-efficacy for teaching various curriculum aspects, including motor skills, fitness, personal and social responsibility (Martin et al., 2009; Martin, McCaughtry, Kulina, Cothran, & Faust, 2008), and an increased willingness to use technology (Ince et al., 2006). Looking at the issue from another perspective, Alfrey, Cale, and Webb (2012) attribute teachers’ deficiency in HRF content knowledge to a general lack of teacher engagement with CPD specifically related to health and lifelong physical activity.

From a pedagogical perspective, Petrie (2010) found that primary generalist teachers benefited from opportunities to transfer classroom pedagogical strategies and skills to the PE context. These learning opportunities, however, need to be balanced and connected with opportunities to develop PE content knowledge. Likewise, when studying CPD associated with sport education, Sinelnikov (2009) found that teachers adopted pedagogical behaviors associated with content (e.g., choosing captains), considered benchmark elements of the model. Similarly Patton and Griffin (2008a) reported increased use of indirect pedagogies to facilitate student-oriented small-sided games and peer assessment.

Effective CPD is facilitated with care

Armour and Yelling (2007) noted CPD providers “need to tread a careful line, simultaneously being leaders (providing expert input, helping teachers to work together) and followers” (p. 195). This type of facilitation acknowledges teachers’ individual contexts, hears their voices, and identifies their assets; thus considering deficiencies in a non-judgmental manner (Deglau & O’Sullivan, 2006; Parker et al., 2010; Patton et al., 2013). Effective facilitators encourage teacher capacity-building through engagement in self-improvement and a focus on student learning (Patton & Parker, 2014). For example, Goodyear and Casey (2015) reported that a facilitator, termed a ‘boundary spanner,’ was a catalyst for the adoption and sustained use of a pedagogical innovation, thereby facilitating teachers’ use of action research, driving social energy, and supporting the subsequent emergence of a CoP.

Successful facilitation acknowledges that teachers actively construct new meaning based on prior knowledge and experiences, recognizes the influences of others in a social environment, and emphasizes the relevance of formal knowledge in teacher growth and development (Patton et al., 2012). Traditionally, CPD providers are hired solely based on their expertise to engage in one-directional content delivery. In contrast, effective facilitators are teacher-centered, providing structured experiences proposed by the teachers themselves and without dictating responses (Patton & Parker, 2014; Patton et al., 2012; Patton et al., 2013).

This “pedagogy of facilitation” (Poekert, 2011) engages teachers in meaningful ways to learn new skills and content. Patton et al. (2013) identify pedagogies that actively engage teachers such as trying out content, reporting back to the group, and sharing lessons learned with others via public dissemination. By ‘teaching without telling,’ facilitators used various participant-centered pedagogical strategies to make CPD meaningful. This strategy contributed to the development of an environment that encouraged teachers to become active participants in the creation of knowledge.
Effective CPD focus on improving student learning outcomes

Research also suggests that teachers perceive CPD to be impactful and sustainable when related to student-achievement gains (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009; Hattie, 2009). Although assessing the causal link between professional development and student achievement may be the most important outcome of CPD, it is also the most difficult, if not impossible, aspect (Kerka, 2003). CPD that is intensive and includes application of knowledge to teachers’ planning and instruction is most likely to influence teachers’ practices, in turn, positively affecting student achievement (Desimone, Porter, Garet, Yoon, & Birman, 2002; Knapp, 2003). Unfortunately, developers too often plan and conduct CPD with the aim of introducing a new teaching practice or policy rather than assisting teachers to develop a robust understanding of the impact on student learning.

Researchers typically use either proxy measures (e.g., MVPA, HR) (Johns, Ha, & MacFarlane, 2001; McKenzie, Sallis, Kolody, & Faucette, 1997; Woods & Lynn, 2001), or process variables (Ward, 1999) to assess student learning outcomes that result from PE-CPD. Few studies have specifically measured the impact of substantial CPD as improvements in student learning outcomes. McKenzie et al. (1998) reported improvements in children’s manipulative skills. They concluded that PE programs delivered by physical education specialists and classroom teachers with substantial CPD training could improve the quality of children’s manipulative skills (catching and throwing). Likewise, Hunuk et al. (2012) concluded that a CoP based on teachers’ specific needs increased their students’ learning and positively changed teachers’ teaching culture. Results of their experimental study demonstrated that treatment-group students’ health-related fitness knowledge significantly improved from pre- to post-test on a health-related fitness knowledge test. Finally, while CPD was not the focus of the study, Iserbyt, Ward, and Martens (2015) reported that an intensive one-on-one CPD format enhanced teachers’ content knowledge resulting in student learning gains in swimming.

Implications for evidence-based CPD practice

The literature reviewed in this chapter indicates that effective CPD requires considerable time, and that time must be carefully structured, purposefully directed, and focused on content, pedagogy, or both. In 1982, Anderson reflected on PE-CPD’s future indicating that:

If teacher educators are to have a meaningful role in this [PD] effort, not only will they have to assist in the creation and maintenance of new formats for inservice education, they will need to devise new ways of working with inservice teachers that acknowledge the voluntary, collaborative and collegial nature of their relationships. (p. 16)

While much more is known about the high-intensity, situated, and collaborative learning required for effective CPD, in some ways Anderson’s challenge has yet to be realized. In our own experience, although some innovative practices are reported, there have been few major changes over the last three decades in the way that much PE-CPD is conducted. There is still a need, therefore, to work towards new formulations and structures (Armour & Yelling, 2007).

Several pragmatic questions also arise when considering how to best design and implement effective CPD for teachers. For example, research results suggest that CPD is most effective when driven by teacher-generated topics (directly related to the wider political and structural requirements of schools) in close-knit communities with common goals. If this is true, large
school districts are challenged to run multiple, small CPD learning communities with both a common conceptual focus and varied goals consistent with diverse teacher populations/contexts. Thus far, in physical education, this has proven to be a tall order that school districts have been largely unable to fulfill. Hence, in spite of these challenges, schools must create opportunities for teachers to grow and develop in their practice so that they, in turn, can help students grow and develop knowledge and ability to think critically. This is especially relevant “when the growing acknowledgement of its [CPD] effect upon pupil learning is recognised” (Alfrey et al., 2012; p. 488). It is surely time to use what is known to influence and impact policy and to change CPD formats for the majority of teachers.

**Evaluation of CPD**

Quality CPD evaluation provides meaningful information that can be used to make thoughtful, responsible decisions about CPD processes and effects. The purpose of evaluation is to determine the value of specific CPD activities; asking questions such as “Are CPD activities achieving their intended results (i.e., teacher engagement, teaching practice, and/or student learning)”? To guide evaluation, Guskey (2002) argues there is a need to go beyond simplistic evaluation to collect and analyze five critical levels of information: (a) participants’ reactions, (b) participants’ learning, (c) organizational support and change, (d) participants’ use of new knowledge and skills, and (e) student learning outcomes. With each succeeding level, the process of gathering evaluation information becomes more complex. Further, because each level builds on the previous, success at one level is usually necessary for success at higher levels (Guskey, 2002). In PE-CPD literature reviewed in this chapter, evaluation efforts are most often limited to the first three levels. For example, studies most often report teachers’ initial satisfaction with the experience (level 1) and, less frequently, reflect new knowledge and skills (level 2), and the school or district’s advocacy, support, accommodation, facilitation, and recognition (level 3). CPD stakeholders find evaluation, especially in the higher levels advocated by Guskey, to be problematic as researchers often study CPD after the fact instead of being involved in planning and conduct from its inception. Evident from this review is that purposeful PE-CPD evaluation in the areas of degree and quality of implementation and student learning outcomes (levels 4 and 5) has not figured prominently in the PE-CPD literature, warranting further investigation. This call for systematic information gathering and analysis as central components of the planning for and study of CPD increases its potential for success (Guskey, 2002).

**Future directions**

Despite a growing body of research examining CPD in a PE context, more research is needed to explore the direct and indirect outcomes of CPD. Such studies should aim at describing what, how, and under what conditions teachers positively engage in CPD, resulting in sustained professional learning. Specifically, those responsible for planning and implementing CPD need better tools to critically assess and evaluate the effectiveness of what they do (Guskey & Yoon, 2009) as well as investigate the critical role that principals and key stakeholders play in supporting the unique needs of specialist teachers.

Relatively few studies systematically document established changes to teachers’ actual teaching practices. Vescio, Ross, and Adams (2008) acknowledge empirical validation of changes as an important step in documenting CPD outcomes. These authors note that “understanding the outcomes of these endeavors on teaching practice and student learning is crucial, particularly in
today’s era of scarce resources and accountability” (p. 81). Much CPD research leaves readers to question the relationship between CPD and improvements in student learning. Only a handful of PE studies examined student learning as a direct outcome of CPD (see Hanuk et al., 2012; McKenzie et al., 1998). Indeed, Guskey and Yoon (2009, p. 498) argue that robust, trustworthy evidence examining the specific CPD aspects that contribute to learning/improvements is “in dreadfully short supply and that dedicated efforts to enhance the body of evidence are sorely needed.” Therefore, CPD planning should begin with discussions of specific CPD goals, identification of evidence that best reflects goal achievement, and evaluation methods to collect evidence that is meaningful and defensible.

Additionally, more frequent use of quantitative studies and alternative theoretical frameworks may provide a much needed macro perspective and illuminate issues that may have been overlooked through an overreliance on interpretive theory. These steps can document systematic changes to teachers’ pedagogies and practices focusing CPD goals on student learning outcomes. These more robust research platforms can increase education leaders’ and policymakers’ understanding and support for the most effective forms of CPD (Darling-Hammond et al., 2009).

Summary of key findings

The existing literature suggests that ‘effective’ CPD is a contested term having diverse meanings and linked to multiple outcomes. Nonetheless, there is evidence to suggest that CPD is more likely to be effective when it:

• is on-going and sustained;
• addresses wider political and structural requirements of schools while recognizing teachers’ needs and interests;
• acknowledges teachers as learners in an active and social environment;
• includes collaborative learning opportunities within communities of physical educators;
• enhances teachers’ pedagogical skills and content knowledge;
• is facilitated with care;
• is supported;
• focuses on changes in the quality of students’ learning; and
• includes an integrated plan to evaluate Guskey’s (2002) five levels leading to increases in student learning outcomes.

Reflective questions for discussion

1. Researchers have employed interpretive theories to guide much of the existing PE-CPD research. What has the field learnt from the evidence produced using this lens, what has been masked, and what might be learnt by using other theoretical lenses?
2. Why is ‘effective’ CPD a contested concept?
3. Given the current ‘effective’ CPD knowledge base, why has CPD provision been so slow to change and what can be done to alter that?
4. What is currently known about the relationship between CPD and improvements in student learning and why is the evidence base so limited?
5. How might CPD be evaluated in the context of different purposes?
6. How could education leaders and policymakers make better use of evidence from the evaluation of CPD activities and programmes?
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References


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