Leading by Example: Teacher Educators' Professional Learning through Communities of Practice

Abstract

There has been a limited interest in examining physical education teacher educators' role and practices in embedding professional responsibility, commitment to continued professional learning, for both teacher educators and pre-service teachers in a physical education teacher education (PETE) program (MacPhail, 2011). Directed by a landscape of community of practice (CoP) as professional development (Parker, Patton & Tannehill, 2012), this paper shares four case studies that demonstrate the extent to which PETE learning can be mapped onto the landscape. In essence, a CoP is sustained over time, involves shared member goals, frequent discourse, is active and social and characterized by problems being solved by the members. The ideas in this paper in tandem with Wenger's (1998) CoP process can encourage teacher educators to consider whether opportunities undertaken in a PETE program, and with colleagues external to the PETE program encourage an authentic CoP.

Introduction

Communities of Practice (CoP) are a specialized form of PD involving members who share self-defined common learning/professional interests, in which interaction and discourse take place over time through discussion, analysis, and problem solving, resulting in professional learning. The variety of CoP initiatives taking place in the name of professional development vary throughout the literature. Studies have examined teacher learning within a CoP (Cothran-Smith & Lytle, 1999), exploring a new teacher cohort's experience of a CoP (Cuddapah & Clayton, 2011), schoolteachers' workplace learning through CoP (Hodkinson & Hodkinson, 2004), and the student teacher involvement in a school CoP (Maynard, 2001). The multiplicity of

CoP initiatives result in variations of CoP and different kinds of communities (Hodkinson & Hodkinson, 2004), leading to ‘micro-communities’ (Patton, Pagnano, Griffin et al., 2005), small group (Parker, Patton, Madden & Sinclair, 2010) and larger collectives of teachers (Parker, Patton & Tannehill, 2012). In examining perspectives of program facilitators and participants of Irish physical education CoP created to address teachers’ interest, Parker, Patton, and Tannehill (2012) uncovered a spectrum of practices, from collections of teachers, to well-established groups, to authentic CoP. They subsequently suggest a landscape of CoP as professional development sorted by the constructs of purpose and success, guideposts, roadblocks, and facilitator role. The ideas in this paper seek to explore the extent to which such a landscape, considered in tandem with Wenger’s (1998) process of CoP moving through various stages of development, can encourage teacher educators to consider the extent to which particular opportunities undertaken in a PETE program and with colleagues external to the PETE program (within their own university or beyond) can be considered as encouraging an authentic CoP.

The focus of education reform and physical education professional development literature is on in-service teachers and not that of physical education teacher educators and pre-service teachers (PSTs). Beyond limited self-study research (MacPhail, 2011; MacPhail, Tannehill, & Goc Karp, 2013; Tannehill & MacPhail, 2012), there continues to be a paucity of interest, particularly within the physical education domain, in examining teacher educators’ role and practices in embedding the professional responsibility for professional learning for both teacher educators and PSTs in a PETE program (XXXX) . The concern with this is that such a lack of interrogation may contribute to the evidence that PETE programs are overly concerned with producing teachers who follow change (O’Sullivan, 2003), rather than lead it. Engagement in communities may address teachers’ particular needs and interests and encourage them to strive for what is deemed to be a worthwhile, relevant and meaningful physical education experience for their students (MacPhail & Tannehill, 2012). The importance of teacher educators modeling the development of learning skills and involvement in a CoP (to potentially include PSTs) in a bid to affect PSTs' dispositions toward continued professional learning as part of a community is noted elsewhere (Armour, 2010; MacPhail, 2011). As Gillette and Schultz (2008) state:

> Teacher educators must develop a vision of emancipatory teacher education practice and act on that vision through the creation of communities of practice (…) We must be willing to practice what we preach if we expect to foster [related capacities] in our teacher candidates (…) If we are serious about fostering an environment that encourages our teacher candidates to take action and teach for change in the roles as teachers, we must not only facilitate environments that encourage such practice, but also model what we envision in our own daily practice as teacher educators (p. 236).

As teacher educators we have to be aware of how PSTs construct their knowledge of learning to teach, finding ways to influence them to reconsider, and in many cases shift, their initially held beliefs and values. We know prospective teachers first learn about teachers and teaching during their own schooling experiences, the 'anticipatory socialization' phase (Lawson & Stroot, 1993). The second phase, 'professional socialization', takes place when teacher education programs engage PSTs in specific experiences designed to shape them as teachers. It has been shown that unless PSTs are confronted with their held beliefs and challenged about them through commanding and focused learning experiences, they will not alter these beliefs as a result of teacher education (Feiman-Nemser & Remillard, 1996). Finally, the 'organizational socialization' phase evolves when individuals leave teacher education and become fully qualified teachers, where every professional experience and interaction continues to shape teachers. It is at this stage that entry teachers begin to set aside what they learned in teacher education as they become inducted into the social structures of schools and culture of teachers (Graber, 1989). It is hoped that teacher educators modeling their involvement in professional development might combat the potential for negative occupational socialization that exists when PSTs begin teaching.

First, we consider the inter-changeable use of ‘professional development’ and ‘professional learning’, acknowledging the importance of defining what each means in the context of a particular study. Then we frame the paper within Lave and Wenger’s (1991) model of situated learning. Finally, a discussion on a ‘landscape’ of CoP as professional development is presented before four case studies demonstrating the extent to which PETE learning can be mapped onto the landscape are shared.

Professional development and professional learning

If we consider that 1) professional development (PD) is designed to transform teaching and is determined by teachers, 2) teachers view themselves as learners both in terms of the process of learning in PD as well as the product of a specific PD situation, and 3) success for teachers is student learning, all three are equally powerful to teacher educators if one is to simply replace ‘teachers’ with ‘teacher educators’. We continue to be somewhat surprised that there is limited interest in examining physical education teacher educators’ role and practices in embedding the professional responsibility for professional learning (PL) in a PETE program, their own as a teacher educator and that of PSTs. Considerably less is known, when compared with in-service teachers, about what constitutes continuing professional learning and development opportunities within PETE programs that have potential to instill in teacher educators and PSTs an appreciation for experiences that will contribute to lifelong learning. We anticipate that a physical education teacher educator's investment in PL and PD, and the successful portrayal of that to PSTs, would not only improve PSTs' experiences in the PETE program, but also instill the appreciation and necessity to continually extend their own PL as they move into teaching in schools.

Professional learning is different from PD, in that PL is a result of PD. Professional learning constitutes the learning undertaken on a daily basis, is embedded within the remit of fulfilling the role as a teacher / teacher educator, is underpinned by research and practice-based evidence, and is more powerful when learning within a community (Parker, Patton & Tannehill, 2012). Such 'informal learning' occurs apart from formal courses or institutions, but at the same time 'explicitly" informal learning is carefully defined as that learning which is intentional and / or identified by the learner, as compared to "incidental" learning which is unintended and / or unidentified by the learner (Timperley & Alton-Lee, 2008). Professional learning requires a shift from a view of teaching as the development of expertise to teaching as the development of the scholarship of teaching. Perhaps some interrogation of the extent to which CoP result in a shift in the view of teaching would inform us of the appropriateness of PL in this instance. Professional development tends to refer to 'formal courses' and there has been criticism of such efforts where these opportunities are one-off events, providing little or no follow-up support. Saying that, we do acknowledge that both concepts strive to include the desire to enhance student learning experiences, the need to reconceptualize learning and teaching in the context of increasing and widening participation, and curriculum change.

Situated learning and Wenger's CoP stages of development

Situated learning theory underpins the concept of CoP and provides a meaningful framework for examining professional learning. A key premise of this framework is that learning is social and comes from our daily experiences. Lave and Wenger's (1991) model of situated learning proposes that learning involves a process of engagement in CoP emphasizing the relationship between knowledge and the situations in which it is acquired and used.

Wenger (2007) describes that CoP, "are formed by people who engage in a process of collective learning in a shared domain of human endeavor" and "are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly" (p. 1). Essentially, CoP define themselves in the doing, as members are involved in a set of relationships over time and work around things that matter to them. They develop among themselves their own understandings of what their practices and profession are about (O'Sullivan, 2007). Communities of practice exist, in part, because they produce a shared practice as members engage in a collective process of learning, allowing for the joint social construction of contextualized knowledge of practice through conversation and writing (Cochran-Smith & Lytle, 1999). Applying this concept to a teacher education context, CoP are places and spaces where teacher educators have the opportunity to engage in worthwhile conversations and actions about the nature and direction of their work with teacher candidates.

Communities of practice are not haphazard groups working to accomplish a task. Rather, they are meaningful, purposeful, and revolve around authentic tasks. Wenger (2007) identifies three elements distinguishing CoP from other groups and communities: the domain, the community, and the practice. First, they share a domain of interest. Membership therefore implies a commitment to the domain, and a shared competence that distinguishes members from other people. Next, community members collectively pursue that interest. In pursuing their interest, members engage in joint activities and discussions, help each other, and share information. They build relationships that enable them to learn with and from each other. Finally, a shared practice evolves over time through sustained interaction as CoP develop a unique and somewhat personal set of resources, experiences and ways of addressing recurring issues. Collectively, CoP provide value to the professional learning process of its individual members. Therefore, members develop a common body of knowledge, a common set of practices, and a common set of values. Wenger (2007) suggests that it is by developing these three elements in parallel that one cultivates such a community.

Communities of practice within a situated learning perspective have distinguishing elements that offer direction for teacher educator professional learning. Most notably, trust and respect among members of CoP has been identified as an essential ingredient of an effective community (Whitcomb et al., 2009). This trust and respect ultimately leads to a safe and supportive environment in which members are more "likely to take risks and engage in challenging discussions that push them to deepen understanding and attempt new practices that will reach more learners" (Whitcomb et al., 2009, p.210)

Like all living things, CoP go through a natural cycle. Beginning as a mere potential, they develop progressively into their mature state, and then continue to evolve until they are no longer relevant (Wenger, 1998). While CoP are in a state of constant evolution, Wenger identified a number of distinct stages meant to provide direction, not prescription. Table 1 describes these five stages characterized by different levels of interaction among the members and different kinds of activities.

Table 1. Adapted from Wenger's (1998) Stages of CoP Development

Stages	**Description**	**Key Activities**

Potential	Groups of individuals face similar situations with the benefit of shared practice	Finding each other and identifying commonalities
Coalescing	Community members come together and recognize their potential	Exploring connectedness, defining joint enterprise, and negotiating community
Active	Community members engage in developing their practice	Engaging in joint activities, creating artifacts, adapting change circumstances, and renewing interest commitment and relationships
Dispersed	Community members no longer engage intensely yet the community is still alive as a force and a center of knowledge	Staying in touch, holding reunions, and calling for advice
Memorable	The community is no longer central yet members still remember it as a significant part of their identities	Telling stories, preserving artifacts, and collecting memorabilia

Wenger (n.d.) notes that these stages provide direction, but not prescription as wide variations may occur in the ways the stages are experienced. While most communities follow the stages depicted some progress through stages more quickly than others and some may skip a stage altogether. Yet, in instances where stages are skipped groups may have to revisit a stage to deal with earlier issues; still others never progress through all the stages. This developmental model with a sequence of stages is useful in studying events and conditions considered as encouraging authentic CoP. While the concept of CoP has been frequently applied to ongoing professional development, little is currently known about how professional learning structures in teacher education might support these stages. In particular, the discussion and investigation of development as teacher educators and researchers is often overlooked.

A landscape of communities of practice

We have been engaged in studying PD, especially CoP, independently and collectively, for at least the past seven years and our work and the work of others has led us to develop some ideas about a landscape of CoP (Parker, et al., 2012). Figure 1 (adapted from Parker et al, 2012) reflects an overview of the CoP landscape of PD for teachers sorted by the constructs of success, guideposts, facilitator role, roadblocks, and potential across a range of groups from collections of teachers sharing an interest to authentic CoP. While in the form of a continuum, it is not meant to suggest moving from bad to better. Instead it reflects a progression of the potential for teacher growth and development. The farther to the right of the continuum, the deeper the learning, more focused the direction, and stronger the growth. For example, groups with shared facilitation showed the most growth, empowerment, and seemed able to reflect on their growth and its impact on teaching practice and, in many cases, student learning.

Success is inherent only when PD is transformative, encouraging those in the community space to consider overarching principles, and to be proactive rather than reactive. While there are no hard and fast ‘rules’ about this type of PD, through conversations with teachers and facilitators a few guideposts that enhance the likelihood of achieving the success of transforming teachers and teaching have been identified. These include: (1) a positive learning environment that is social as well as physically and mentally active, and where the PD focus is meaningful to teachers both in terms of content and context, (2) a supportive emotional environment, where deficiencies are discussed without teachers feeling deficient, and (3) a top down and bottom up structure of groups, acknowledging that while ideas may be generated from one group of participants they need to be supported by those in positions to provide financial and conceptual administration. A fourth, critical guidepost was the role of facilitator, who guides rather than directs, questions rather than shows the way, and listens rather than tells.

Likewise, certain characteristics or 'roadblocks' hinder the success of PD. At times roadblocks can reflect the opposite of what supports PD and at other times they portray attributes hampering PD. Roadblocks may include such as aspects as lack of time, ineffective learning environment, low morale within the teaching profession, and teacher marginalisation (physical education) in the school context.

Collections of teachers, while certainly valuable, are limited in their potential in that they may initiate change in isolated classrooms. Conversely, authentic CoP hold the potential to change school culture. In fact, it has been suggested that collections of teachers who pool new ideas without examining or extending them will reproduce the status quo instead of challenging it (O'Sullivan, 2003). Instead it is the joint work done in authentic CoP that leads to improvement through exploring challenging questions about practice together. The PD required in authentic communities must be configured to match their needs.

Mapping involvement in PETE onto the landscape of communities of practice

Cognizant of the lack of interest shown about what constitutes opportunities for physical education teacher educators to contribute to CoP, we share four examples of the extent to which the landscape of PD in the form of a CoP is suited to a teacher education context. The four examples are framed by Wenger's (2007) three distinguishing CoP elements; they share a domain of interest, members actively pursue that interest, and through sustained interaction they develop a shared practice. These case studies provide an array of examples in which physical education teacher educators encourage a community with PSTs through modeling learning (case study 1), striving to contribute to a faculty community at a department level (case study 2), and working across institutions and countries to maintain physical education teacher education CoP (case studies 3 & 4).

Case study 1: Examining pedagogical principles as a group of teacher educators in one program

The case study is set in a four-year PETE concurrent program where all but one of the faculty who predominantly teach full-time on the program are qualified physical education teachers. In year one of the PETE program, PSTs undertake a module in the foundations of teaching and learning in physical education and are introduced to pedagogical principles such as presence, setting a positive learning environment, preventive management strategies, and general teaching strategies. The pedagogical principles are explicit throughout the year one module. At the same time, there was concern from some faculty that they were not capitalizing on other opportunities throughout the program where the pedagogical principles could be revisited outside of what is commonly referred to as methods modules. This concern led to the idea of choosing three pedagogical principles to revisit, reinforce, and discuss further throughout other relevant teaching and learning opportunities in the program.

The three chosen principles were to be re-introduced to PSTs at the start of their second year autumn semester modules with faculty choosing a number of ways with which PSTs were to interact with them. Some chose to focus on one specific principle throughout a class, displaying a laminated poster on the wall of the teaching space to prompt PSTs throughout the session to take note of instances that reflected the particular principle. Others, in a lecture format, introduced a specific principle to the class and then passed around the poster for students to examine the related prompts before passing it on to their peers. Others posted all three principles in their teaching space and asked PSTs to focus on one of their choice on which to comment at the end of the session.

With respect to this pedagogical principle initiative, it is suggested that the construct of success for this group of teacher educators was towards the authentic CoP end of the landscape continuum. This is evident in the belief that delivery and reinforcement of the pedagogical principles (albeit in different ways) is contributing to the accomplished objective of reminding and enhancing PSTs' understanding and identification of pedagogical principles, as well as being able to articulate and comment on the use of such principles by the teacher educators. There appears to be one or two faculty members who have not bought into the initiative, sighting their concern that such an initiative undermines their abilities and autonomy as teacher educators, hinting that the pedagogical principles would in some way limit their practice. While such concerns are not detrimental to the success of the initiative or the remaining teacher educators' PL they encourage the teaching faculty to engage with the challenges posed.

The social investment that each faculty member brings to sharing knowledge and experiences of further engaging with pedagogical principles is an everyday discourse for some, as related discussions are taking place in the corridor or when passing each other when entering and exiting teaching areas. This places them somewhere in the middle of the landscape continuum when considering guideposts as they are involved in the collective process of learning together. They have worked through the potential and coalescing stages (Wenger, 1998) and are now progressing to the active stage of CoP development, prompting each other on what has / has not been effective in encouraging engagement from PSTs recording the pedagogical principles and, to borrow from Hargreaves and Fullan's thoughts (2012), 'pulling' and 'pushing' one another.

While one person was involved initially in floating the idea of the initiative, this quickly grew to a group of three faculty who worked on behalf of the physical education program committee to develop what such an initiative would look like. The initiative very quickly moved on to be facilitated by a group of faculty as they began teaching and resulted in a shared authentic facilitation of enactment and engagement. There is a collective investment in the initiative.

The potential for the one or two faculty choosing not to be involved in the initiative acting as a roadblock did not materialise and subsequently did not hinder the success of teacher educators' PL but rather has, as noted earlier, portrayed conceptual and philosophical attributes that challenge the worthiness of such an initiative. This only enhances the opportunity for those operating as a community to articulate their responses to such challenges and in a way, consciously or subconsciously, strengthen the notion of an authentic CoP.

While this is a new initiative now driven and practiced by a group of teacher educators it may take time for membership of the group to change the PETE program practices with respect to the promotion of pedagogical principles. In turn it may take time to change PSTs' engagement with the pedagogical principles and subsequently have an impact on the teaching of physical education in schools. This suggests that the group currently reside somewhere in the middle of the potential continuum denoted by the landscape. The potential with respect to the way in which PSTs are being encouraged to identify use (or not) of particular pedagogical principles has already been realised.

Case Study 2: Within an institution: The case that didn't work

Program coherence refers to the consistency among program goals, curricular design and sequence, and faculty beliefs and actions. Coherence is considered a hallmark of effective teacher education programs (Howey & Zimpher, 1989) and one for which many programs strive.

Graduates of coherent programs are quite simply better prepared to teach. Yet, the development and maintenance of program coherence is difficult to achieve and can be quite fragile.

This is a case about a PETE faculty and their strife for coherence that did not evolve as the members of the group would have liked, or initially envisioned. The group consisted of five teacher education faculty: four of whom formed the core of the teacher education program and who were administratively supported by a fifth long-term faculty member. The PETE program had recently been revised by one of the four (with encouragement of the fifth), one faculty joined the group just at the end of the revised program creation, and the other two faculty were new to the program and the institution. With the addition of the two new faculty, four of the group (and sometimes all five) would meet regularly regarding the program course sequence, the content of particular courses, and program assessment items. At times faculty observed and/or shadowed the other faculty teaching and frequently discussed possible modifications. Two, and later sometimes three of them, also met regularly regarding ongoing research projects. Professional conversations in the halls were frequent. Conference presentations and travel were the norm. The group often socialized together playing golf, cards, walking and hiking, or simply going for drinks at happy hour.

The group's direction was initially facilitated by the senior faculty member. While group members worked together they often split themselves into pairs with the two new faculty members collaborating, the two longer serving members working together, and one member 'floating'. In reality these were odd-couples who were unknowingly opposites of each other in terms of interests and work goals. The group however saw the potential of a common goal of a coherent PETE program, yet at times lacked agreement on how to reach the goal. The social network and frequent informal conversations were nevertheless clearly guideposts for the group.

Initial steps were achieved toward creating and maintaining an effective and coherent teacher education program and the signs indicated that this trend would only continue to be successful, contributing towards the success component of the landscape.

After about three years, subtle shifts occurred which affected the culture and accord of the group. Most notably the social network began to disintegrate and the pairings shifted. The pairings were not able to have a candid influence on each other, the walking and golfing episodes became less frequent; the hallway professional conversations shifted to offices with closed doors. As interests shifted, the groupings changed to two pairs of one senior academic and one junior faculty and one solo. The group as a whole rarely met. A clear roadblock for this group was the lack of shared facilitation and the disintegration of the social network. An additional roadblock was the assumed purpose of program coherence and how to achieve it. Members began to be focused on personal interests and needs rather than the needs of the group. This hampered group productivity. Eventually, the fragmentation of the group led to a fragility where confidence and openness were lost. The result on the potential landscape continuum was that this group was operating at one point in the middle of the continuum and had the potential to move to the right. Yet, the group splintering from a whole to pairs contributed to the CoP diminishing its potential by moving to the left on the continuum.

The result of these events had implications for the teacher education program. When the group was at its strongest, the PETE program was at its strongest. Pre-service teachers could teach and teach well and they saw the connectedness of the program, easily identifying the threads of the curriculum, and how courses fit together. They frequently commented on the strong personal and professional relationships among faculty. Not surprisingly, trust and respect among CoP members have been identified as an essential ingredient of an effective community.

When strength of the relationships among teacher educators began to waiver, the program suffered. The PSTs could not see the connectedness of the program or even identify common threads. While PSTs could still teach well they were not as strong and the culture of professional involvement of PSTs diminished as they became less engaged in professional events and the cohesion that had been previously modeled by faculty.

The members of this group were faced with an all-too-familiar situation, a PETE program struggling to achieve coherence that could have benefited from shared practice. In line with Wenger's notion of a CoP they came together and recognized their potential, they became stalled at the coalescing stage of a CoP and ultimately their potential was never realized. They were unable to negotiate their community. It is a case of the guideposts not being strong enough to compensate for the roadblocks.

Case study 3: Research collaboration across institutions

It is widely assumed that collaboration in research is 'a good thing' and that it should be encouraged. Such collaboration has been identified as a source of stimulation and creativity, providing intellectual companionship while extending an individual researcher's network. Portraying an example of a successful research collaboration, this case depicts how a pair of PETE researchers successfully navigated the process of creating and maintaining a collaborative relationship across two institutions and in essence, formed a mini-CoP.

The dictionary definition of 'collaboration' suggests the action of working with someone to produce something (http://oxforddictionaries.com/). Thus, 'research collaboration' could be defined as the working together of researchers to achieve the common goal of producing new scientific knowledge. The collaboration described in this case began rather serendipitously with two faculty members working and teaching in the same university PETE program. Though they had worked together as part of the PETE teaching faculty and a larger research group, they had never undertaken a project together. Their initial research collaboration began as the result of an informal conversation about working with teachers that turned a PD project into a multi-year research agenda. Their work together on the project was fruitful, resulting in multiple national level presentations and a well-received publication (XXXX). They quickly recognized their common interests, and determination and highly motivated work ethic. They made time, almost daily, to discuss their current work and developed future research agendas. Their working relationship, however, changed dramatically when, for personal reasons, one member of their partnership took a position at another university. This transition put the two working in different geographic locations and time zones hundreds of miles away from one another.

This move, not unexpectedly, put an immediate strain on their collaborative relationship. In fact they did not interact for several months. Initially it was this lack of frequent informal communication that strained their work. One was struggling to find roots within a new PETE program with new colleagues, new classes, and new students while the other struggled with how to work alone. Despite this transition, both colleagues made a conscious effort to maintain the collaboration, despite the physical distance between them. To overcome this roadblock both rededicated themselves to their work together, and to continue the success they had previously experienced. To do so, they took every step possible to remain connected. Often this took the form of frequent emails and Skype or phone sessions. In addition, they used time at professional conferences as well as working trips to each other's university to make progress on current projects and manuscript revisions.

The renewed social investment that each brought to the sharing of knowledge and experiences of current and future research is now nearly an everyday conversation, placing this

CoP to the right of the landscape continuum when considering guideposts. As with any type of relationship, roadblocks are not uncommon and collaboration often comes at a cost. Though the two colleagues managed to overcome many of the issues which could potentially hinder their success, the effects of physical and social proximity still loom large. As for many, spatial proximity seems to encourage collaboration since it tends to generate more informal communication.

Viewed by both as a strength of their collaboration, the facilitation of their work is internally initiated and negotiated together. Most often they have equal contributions on projects and have negotiated an openly discussed, rotating author order. Their work is never contentious and is truly shared. They pursued a common interest in their domain and through joint activities and discussions built a reciprocal professional relationship that enables them to learn with and from each other.

The potential of this type of collaboration is significant. For both PETE faculty, this collaboration served to partly overcome the intellectual isolation at their own institutions. Success meant forming a working and personal relationship that pushed each other intellectually, providing accelerated scholarly production and ongoing development as researchers. Often, the act of collaborating is a source of stimulation and creativity. Hence, collaboration is greater than the sum of its parts. Their collaboration also brings about a clash of views, a cross-fertilization of ideas which in turn generates new insights or perspectives. As individuals working on their own, they would not have grasped (or grasped as quickly) the ideas in question. Above all, this partnership provided both with a space for reflection and resonance as they came to view themselves as a CoP, learning through conversations about their teacher education practices and scholarship.

Case study 4: Two teams merging to become one

While the mini-CoP described in the previous case was developing, a similar collaboration was beginning to evolve in another part of the world. An experienced teacher educator who, for personal reasons, had a number of years previously left a strong research-based teacher education program with a cohesive research/teaching team found life as a 'solo' teacher educator in a smaller program isolating and lacking in the support of a teacher education companion. As a result she accepted a position in a solid and respected four-year PETE program at an institution that valued teaching, research, and service. At this institution was a relatively young productive scholar with an impressive publication record, extensive experience in research, and a passionate interest in teacher education. Both of these scholars were interested in PL. The senior academic sought a teaching and research team with whom she might work and that might rejuvenate her interest and desire to conduct research. The younger academic sought a colleague and a mentor with whom she might further develop and extend her knowledge and skills in both teaching and researching teacher education. While these two colleagues are not the focus of this case study, in many ways the relationship built in case study 3 was replicated as these two colleagues engaged in daily interactions, collaboratively designed and taught courses within the teacher education program and conducted and published research on their own teaching practices as a means of improving the development of their PSTs and the practicing teachers with whom they came in contact. These attributes all reflect the characteristics Wenger (1998) describes as central to CoP.

Case study 4 is about the coming together of two sets of collaborative relationships, those described in case 3 and those discussed in the previous paragraph, into a research team with a common focus in teacher education research. In each of these collaborations was a senior academic who had over a number of years, through numerous professional encounters, become both social and professional colleagues. The second member of each collaboration was a younger, capable scholar at the peak of his or her career who, while familiar with each of the other colleagues' work, had yet to make a personal or professional connection. The two senior colleagues were experienced PhD advisors, well-developed and published researchers and teacher educators, yet over the past number of years had reduced their involvement in and output of research. On the other hand, the two younger colleagues were both prominent researchers in their own right, focused on conducting school and- teacher-based research, designing and delivering teacher education built on what is known about effective teaching and student learning, and in developing competent physical education teachers through research-based teacher education. Consequently, all members of the community were individually achieving success aligned with their professional experience.

Initially, the two younger colleagues were involved in what they viewed as a mentoring relationship, where they were the mentee and their senior colleague the mentor, as they sought insight on teacher education in physical education. Little did they know that their senior colleagues viewed themselves in a similar mentoring relationship except with reversed roles with them as the mentee and their younger partner as the mentor as they sought to revitalize their research and its application to practice. As time passed, both sets of colleagues came to recognize their collaborative relationship as valuable to each partner coming to appreciate one another's strengths, knowledge, and capabilities. Two strong teams of physical education teacher educators with shared goals had developed and coalesced into one.

As the two sets of scholars began to investigate a similar line of research, teacher professional development, communication and interaction between them grew and became frequent. Joint discussions were undertaken, shared insights on current practice were shared, doctoral students undertaking semester-long visits to study with the other CoP were arranged, seminar proposals for professional meetings were planned and delivered and research initiatives were collaboratively designed, conducted and published. Rather than one scholar under-take the role of facilitator, each scholar <u>facilitated</u> the learning and interests of the collective group. When the four colleagues would connect at professional meetings their passion for their work was evident. They interacted in formal meetings, and exchanged and extended their insights through informal discussions that were often taken into a social setting usually involving food and drink. This was an exciting time for all four colleagues, whose relationship, when viewed on the continuum, was progressing toward an authentic CoP where their <u>potential</u> seemed open-ended and their community facilitation completely shared.

As time moved on, the story of these four colleagues became more complex yet, for them, it took a shape that was both familiar and comforting. The four submitted a seminar proposal for a teacher education conference with a focus on how CoP are a form of PD that should be examined as teachers strive to develop their teaching and the learning of their students. Three of the colleagues were charged with setting the stage through a research discussion of traditional PD, the evolution of CoP and an overview of their research conclusions on how to develop and support CoP among teachers. The fourth colleague was to provide a response to the presentation sharing insights on the evolution of communities. What happened was quite different to what was expected as the response caused all four scholars to question why CoP in physical education seem to be solely focused on teachers in schools with minimal consideration given to physical education communities that might exist in higher education. A <u>guidepost</u> had emerged and through discussion, probing, challenging and questioning one another around this issue, these four colleagues came to the conclusion that they were themselves a community. They were a community that had moved through the potential and coalescing stages and were firmly entrenched in the active stage (Wenger, 1998) engaging in joint enterprise, revisualizing their own practice and extending their research interest to a new area of PD. As this CoP is still in its early stages roadblocks have yet to be encountered. However, from what has been experienced to date, the interactions and collaborative work reflects a collective able to challenge one another, share and build on one another's insights, and seek to move forward with shared interest in teacher education.

Discussion and conclusion

Referring back to our proposed landscape of PD, it is clear that the embedded components within the landscape are enacted in diverse ways and to differing degrees across the four case studies, resulting in different degrees to which CoP are evident. In each of the cases presented there was a shared construction of knowledge that continued overtime resulting from frequent discourse and active and social engagement that varied in degree depending on the stage of CoP development. It is important to again reinforce that while the landscape is presented in the form of a continuum, it is not meant to suggest moving from less to more as you progress from left to right. Instead it reflects a progression of the potential for teacher education's growth and development. This is not dissimilar to what we stated earlier as regards the work of Wenger (1998) who noted that the CoP stages provide direction but not prescription as wide variations may occur in the ways communities experience these stages. We revisit the five constructs embedded within the landscape in turn to examine the extent to which each has encouraged deep learning, a focused direction and growth across the four groups of teacher educators reported in the case studies. The teacher education landscape presented in Figure 2 provides a visual to guide the following discussion.

[Insert Figure 2 here]

Success

Higher education is often characterized by intellectual silos of personal achievement and recognition yet within the communities reported here it was looking beyond oneself that epitomized success. Achievement of a group goal / shared objective was more important than individual success, enhancing teacher educators' PL by encouraging them to interrogate their beliefs and practices. Success was also attributed to the navigation of collaborative relationships, forming working and personal relationships that were intellectually challenging.

Guideposts and roadblocks

Guideposts and roadblocks appeared inextricably linked. Social networking and informal discussions appeared to be the most prominent guideposts that enhanced the likelihood of enhancing teacher educators' PL. In one instance (case study 2) it was evident that guideposts were not sufficiently strong to compensate for roadblocks that were perceived to result in a 'cost' to an individual. In other instances, different personalities did serve to enhance and complement each other, rather than act as a roadblock to PL. In other words, difference generated strength in a community. In case study 4 the most prominent guidepost was reflected in an 'ah ha' moment, i.e., when there was a shared appreciation, that served to propel the group forward.

Role of facilitator

The case studies that conveyed shared facilitation showed the most growth, empowerment, and seemed able to reflect on each teacher educator's growth and the impact on their teaching practices, research and in some cases both teaching practices and research. Those CoP that were successful in reaching the action phase also had three additional elements; willingness to negotiate, looking beyond oneself to the group, and *shared facilitation* (Patton & Parker, 2012) among the group. As can be seen from the descriptions of the successful communities, negotiation was not an abdication of individual thoughts but instead a willingness to listen to others' ideas and meld them with their own resulting in an increased capacity for all members. This reflected a strengthening of the community and empowerment within and among all members of the group. A group became stronger than any individual member.

The literature suggests that the aim of successful facilitation is for facilitators to become part of the group (Patton, Parker, & Neutzling, 2012). What we found however in these higher education communities was that all active members collaboratively facilitated the functioning of the community. At various junctures in the community's work, and depending on the community's current focus, facilitation would be perhaps led by one member yet this quickly became a cohesive and joint facilitation.

Potential

As noted earlier, the PL landscape reflects a progression of the potential for teacher growth and development. It was evident from case study 1 that potential is not necessarily negatively impacted by those choosing to stay on the outskirts of a PL initiative and does not necessarily hinder the potential for those keen to invest. In instances where a lack of investment from an individual(s) does effect the working relationships and subsequently PL of teacher educators, potential is not realized. Whether the teacher education CoP resides within one institution, across institutions, or among several institutions, we found that it was essential that they reflect all the criteria identified for any CoP as outlined in the literature. They must be *sustained over time* (Deglau & O'Sullivan, 2006) as can be seen in case 3 which has been actively engaged for over seven years despite one member relocating to a new institution. Having a *clear purpose* (O'Sullivan, 2007) to guide the communities' work was demonstrated with case 1 where the intent was to improve initial teacher education through PSTs' engaging with pedagogical principles. The successful communities worked through each phase of Wenger's (1998) *stages of CoP development* from potential to active engagement (see Table 1) to enhance learning. Interestingly, the dysfunctional group reported in case study 2 achieved active engagement before they coalesced which might be one reason for their demise. Key to this engagement among the successful communities was the development of *trust and respect* (Whitcomb et al, 2009) reflected through a transparency of thought and action. This allowed for an openness of listening to, and hearing, the voices of partners. Across all four of the cases the *social element* (Armour & Yelling, 2007) was paramount, most poignantly with case 4 where most of the interactions to date have been away from home institutions at professional meetings where dialogue spans personal, social and professional discussions.

The limited interest to date in examining physical education teacher educators' role and practices in embedding the professional responsibility for PL for both teacher educators and PSTs in a PETE program is a concern. In the same way that teachers are encouraged to view themselves as learners both in terms of the process of learning in PD as well as the product of a specific PD situation (Lieberman & Miller, 2008), so too should teacher educators be encouraged. The extent to which a teacher educator's PL and modeling the development of learning skills has the potential to affect PSTs' dispositions toward continued PL is immense, acknowledging that teacher education programs are a serious beginning point for the ongoing PL of both teacher educators and PSTs (Loughran, 2006). A physical education teacher educator's investment in PL and PD, and the successful portrayal of that to PSTs through innovative pedagogies, role modeling and mentoring, would improve PSTs' experiences in the PETE program. In addition, it has the potential to instill the appreciation and necessity for lifelong learning (possibly through a CoP) as they move into teaching in schools, and perhaps combat the negative aspects of occupational socialization.

In concluding, there is scope for the landscape of CoP as PD reported here to act as a catalyst for (physical education) teacher educators to consider the extent to which particular opportunities undertaken in a PETE program, and with colleagues external to the PETE program (within their own university or beyond), can be considered as encouraging an authentic CoP. We would like to contend that a more focused interest and investment in PL that can be undertaken and experienced in PETE programs, by PETE faculty and PSTs, would assist in determining and informing the most appropriate PL and PD opportunities that PSTs strive to maintain as newly qualified teachers and, in time, as members of a CoP. The majority of the research on PD / PL and CoP in physical education has focused on physical education teachers and not on PETE. There is no doubt that there are a number of reasons for this and this may be a good place to begin discussion on how to extend this research focus.

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	Collections of Teachers	Established Groups	Authentic CoP
SUCCESS	Acquisition of new ideas	Accomplished objective + empowerment	Accomplished objective + empowerment
GUIDEPOSTS	When together	Continuous	Continuous
ROLE OF FACILITATOR	External/internal leaders and workshop leaders. Dispenser of knowledge	Internal leaders and workshop leaders; some shared facilitation	Shared facilitation and workshop leaders
ROADBLOCKS	Leader attempts to sort issues arising	Issues identified by group; solved by leader or shared facilitators	Issues identified by and solved by group
POTENTIAL	Change in isolated classrooms		Change school culture and physical education

Figure 1: Landscape of professional development

	Collections of Teacher Educators	Established Groups	Authentic CoP
SUCCESS	Success determined as an individual	Group goal / shared objective	Interrogation and integration of beliefs and practices Engage with posed challenges
GUIDEPOSTS	Limited social investment Social networking and informal discussions	Everyday discourse in an informal manner	Shared appreciation of enactment and engagement
ROLE OF FACILITATOR	Active individuals	Creation of sub-groups Groups facilitated by one member Common goal but lack of consensus on how to achieve the goal	Willingness to negotiate, look beyond self and share facilitation Internally initiated and negotiated facilitation together
ROADBLOCKS	Individual conceptual and philosophical attributes that do not encourage discussion and are subsequently not solved No shared facilitation	Engage socially but do not interrogate conceptual and philosophical attributes	Engage as a group with posed challenges
POTENTIAL	Haphazard individuals / groupings Intellectual isolation	Realization of a shared impact	Sustained over time Clear purpose Trust and respect Social element

Figure 2: Landscape of professional development for teacher educators