Chapter 2: Effective Professional Development—What We Now Know

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Calls for Professional Development for Teachers

There have been increased calls from around the world for greater commitments to designing professional development (PD) opportunities for practicing teachers. Three major forces are propelling this increased attention on PD: the education standards movement, professional organizations, and a call for research on teaching.

First, the standards movement in education has highlighted the professional needs of teachers. Higher standards for both teachers and students have been established by content area specialists and learned societies (National Association for Sport and Physical Education [NASPE], 2002, 2004). The National Board for Professional Teaching Standards (NBPTS) created a certification process based on a set of assessments concerning teaching and student learning in physical education. Participation is voluntary and teachers who pass often view this as a positive PD experience. The National Association for Sport and Physical Education (NASPE) has established performance-based standards for the preparation of preservice and in-service teachers that teacher preparation programs strive to achieve. NASPE Standard 8 addresses becoming a “reflective practitioner and its contribution to overall professional development . . .” (NASPE, 2003, p. 17). The standards movement has affected PD programs in physical education. Providing different and better educational experiences for children raises the expectations we have for children and the teachers who teach them. Professional development opportunities are seen as critical mechanisms to facilitate teacher learning.

A second force is that teaching and subject matter professional organizations have been a catalyst in increasing the importance of professional development. Professional teaching organizations like the National Council of Teachers of English (NCTE) have sought to increase the professional status of teaching and teachers.
and have argued that teachers require ongoing PD throughout their careers, not only during the induction period. A third force is a call for research on teacher learning since little is known about what teachers learn during PD or the nature of the processes that facilitate learning. These forces have impacted the physical education profession in several countries, including the United States.

Although research on PD with classroom teachers has increased significantly in recent years, very little of the work has focused on systematic evaluation of the impact of PD initiatives in terms of teacher practices in schools. Research on PD of physical education teachers has been slower to develop. Much of the early work done by scholars has been with one or two teachers. Inez Rovegno’s work in this area has been with a school teacher (Rovegno & Bandhauer, 1997a, 1997b) and Templin & Schempp (1989) focused on teachers’ careers and life histories. Experimental research focused on changing teaching behaviors of elementary (Dunbar & O’Sullivan, 1986) and secondary school physical education teachers (O’Sullivan, 1983) showed some promise. Systematic efforts in the implementation and evaluation of PD initiatives of cohorts of teachers were rare in the United States until quite recently. The early work was done at Teacher’s College by William Anderson (1988) and his doctoral students. The project involved several schools across New York and New Jersey where in-service work with teachers was systematically provided over several years. The research, mostly published and extended upon by Schwager & Doolittle (1988), focused on the process of change and the importance of addressing the needs of teachers and their local contexts. Sarah Doolittle has been working in New York State providing PD for practicing teachers. Griffin and Hutchinson (1988) initiated Project Second Wind, a systematic effort to provide PD to teachers across several schools. More recently, Rink and Mitchell (2003) and their colleagues at South Carolina have been engaged in teacher PD via a statewide project focused on improving physical education programs via program assessment. Phil Ward, Marybell Avery, and colleagues at the University of Lincoln, Nebraska, designed the Saber-Tooth curriculum, showing how attention to teachers’ lives and the conditions of schooling are critically important to promoting substantive and sustained teacher change (Ward & Doutis, 1999). In England, Kathy Armour has been involved with a cohort of teachers as part of a master’s program (Armour & Yelling, 2004) and studying the contributions of action research and auto-ethnography to teacher change and development.

Internationally, the Berlin Summit in 1999 called for investment in in-service professional training and development for teacher educators and increased opportunities for on-going PD for teachers of physical education. Most recognize that quality physical education depends on well-qualified professionals and curriculum time even when other resources like equipment and facilities are in short supply. In the United States, the federal government funded physical education and after-school physical activity initiatives with the Carol M. White Physical Education for Progress Grants, known as PEP grants. The first allocation of funds was in 2001, with $5 million distributed across 18 grants. Many of these grants provided PD for physical education teachers.

Designing effective PD opportunities for teachers both in general education and physical education is a difficult challenge (Armour & Yelling, 2004; Deglau, 2005; Guskey, 1986, 2002; Rink & Mitchell, 2002; Ward & Doutis, 1999). Previous research has addressed teacher change, teacher beliefs, and continuous professional
development in order to better understand and develop key principles of high quality PD (Deglau, 2005). The purpose of this monograph’s review of literature is twofold: (1) to review some of the theoretical frameworks for research on PD conducted in education and physical education settings and (2) to present key findings that have impacted physical educators as they participated in PD programs.

**Theoretical Frameworks for Professional Development**

Several theoretical frameworks related to teacher change have been developed to better understand teachers’ PD. In this section, three specific frameworks are presented: Fullan’s theory of teacher change; Shaw, Davis, and McCarty’s theory of the teacher change process; and Guskey’s model of teacher change.

**Theory of Teacher Change**

Fullan (1992) addressed how a school district had been successful in the implementation of computers in the classrooms. He explained that many changes in the early years had been adopted without anyone asking about “why it was needed and no thinking that addressed the follow-through of the change” (p. 21). Many schools had been viewed as targets for change rather than the sites for change. This view meant that teachers and schools were considered as objects for PD rather than receivers of PD who would then explore the potential for and focus of changes in the teaching process. The former view caused problems in the change process, and teachers had no sense of ownership of the proposed changes. Fullan identified four key elements in his theory that are needed to impact the change process at the school level:

1. There needed to be active initiation and participation by all teachers.
2. There needed to be pressure and support for change at the local level.
3. There had to be changes in teachers’ behaviors and beliefs regarding the change.
4. Teachers needed to feel the ownership of change. (Fullan, 1992, p. 25)

Using this theory, there could be few effective changes made within the school until teachers felt they were a part of the change process and PD was developed with them rather than for them. Utilizing this theory of change helped the change process to occur in schools, as teachers were more willing to participate in PD programs.

The initial PEP (Physical Education for Progress) grant studied herein was jointly initiated by the health and physical education coordinator and university PETE faculty. The needs and the interests of the teachers drove the project, and teachers were involved from the beginning. The two PEP grants were designed to get teachers to actively participate in learning content and to actively try this content with their physical education students. Both pressure and support were provided for the teachers’ efforts. The pressure was found in the clear expectations that if teachers joined the project they would
• have to agree to plan a unit of their choice using the curricular approach
• have to try it with one class
• share their experiences with others

The support systems were

• we provided funding for their training and time to plan (summer stipend)
• we provided funding for equipment necessary to teach the unit of their choice
• we provided support as they implemented the lessons (worked in teams to plan units, paid teachers for planning time, provided support staff to come and team teach/assist them as they began teaching the unit.

Theory of the Change Process

Shaw, Davis, and McCarty (1991) developed a framework to explain the process of teacher change with mathematics teachers that has relevance to PD in other subject areas (see Figure 1). There are four key components of this change framework: their cultural environment, quality of perturbations, commitment to change, and visions of potential changes. The process of reflection plays a key role, as teachers examine how and why they are teaching in specific ways. The cultural environment provides the shell for the model and is composed of several key elements: “support, time, money, resources, taboos, customs, and common beliefs” (p. 163). Support comes from colleagues, administrators, parents, and the students. Teachers hold certain beliefs concerning the customs and taboos of schools that need to be dealt

Figure 1 — The Shaw, Davis, and McCarty (1991) cognitive framework of teacher change in mathematics.
with for change to occur. Unless these customs and taboos are addressed, change is often slow to occur.

A second component of this model for understanding teacher change was the presence of a perturbation, or what has been called a period of mental dissonance. Teacher change or the consideration of making change was due to having experienced a perturbation. These perturbations come from many sources, such as colleagues, students, books, PD programs experienced, or any item that caused a teacher a period of frustration, discomfort, and reflection. The third component was a commitment in one’s decision making to initiate change as a result of the perturbation (Shaw et al., 1991). Having this commitment allowed teachers to self-reflect and then begin to take risks in implementing new strategies in their teaching. The final component of this model for understanding teacher change is vision. Teachers must know what new teaching and learning will look like in their classrooms once change has been implemented. Teachers may need to be helped to realize and accept a new vision of an effective learning environment.

This model did not suggest that change is a one-time experience, but a process that teachers go through as they attempt change in their classrooms. Each teacher experienced new perturbations, new commitments, and new visions as he/she was introduced to new practices that prompted change. Shaw et al. (1991) proposed that all components of this process should be considered when designing effective professional development programs for any content area.

The perturbation presented to the teachers in the two PEP grants focused on contemporary curriculum models and presented a content focus for the workshops.

**Model for Teacher Change**

Guskey (1986, 2002) proposed a new model for teacher change because of the poor reputation of staff development among teachers. Previous staff development models were based upon psychotherapeutic models of change (models used in psychotherapy to prompt change), which did not appear to apply to the staff development of experienced teachers. Most staff development programs that were based on these models failed because they did not address two key factors: “what motivates teachers to engage in the staff development process and the process by which change in teachers typically takes place” (p. 6). Guskey believed that the major outcomes of staff development were “change in classroom practices of teachers, change in teacher beliefs and attitudes, and change in the learning outcomes of students” (p. 6), and he questioned the temporal order of these outcomes.

Guskey rearranged the order of the outcomes in his model (Guskey, 1986, 2002). He felt that change in teachers’ beliefs and attitudes occurred only after they saw changes in student learning outcomes. His model is presented in Figure 2. Support for this model came from ideas that addressed how teachers’ viewed themselves as successful and this was usually when students improved their learning. Teachers’ beliefs about what worked in classrooms changed when they viewed how effective a particular model was in improving student performance in their own practice. If a new practice didn’t work with their own students, teachers were not likely to continue to use the practice.

Guskey (1986, 2002) drew three implications of his research for the design of high-quality professional development programs. First, staff development
designers needed to recognize that change takes place gradually and is a difficult process for teachers. Second, professional development programs must ensure teachers receive regular feedback on student learning. Teachers need to see how their practice impacts student learning for them to continue use of the practice. Providing feedback opportunities on student learning needs to be included in staff development programs. Third, staff development programs must provide continual support and follow-up after initial training. As this model suggested, “change took place after the implementation and when there was evidence of student learning obtained” (p. 10). This necessitates on-going support as critical for change to occur. Staff development programs that utilize this model in the design of new programs would be more effective in producing changes in programs or teaching.

The support staff providing regular feedback to the teacher participants addressed the importance of feedback. The midpoint debriefing in the first PEP grant served as a time for public accountability, as well as a time to get affirmation on the quality of their work. Several participants were encouraged to present their work at local and state physical education conferences.

In these PEP projects, teachers planned new student outcomes with the help of the project designers. After the implementation, the teachers perceived students’ reactions as being positive and this helped to encourage further experimentation by the teachers for the duration of the projects.

In this monograph, sociocultural frameworks are used to interpret the nature of the teacher learning and PD that occurred during these PEP grants specifically with the research presented in chapters 3 and 5.

### Research on Professional Development in Physical Education Settings

Research on PD in physical education has addressed three different aspects of the process. The first strand has focused on the contextual factors of teachers’ lives, including culture, micropolitics of schools, support (principal and collegial), and workplace conditions. The second strand for research has been the impact of dispositions, both personal and psychological, and teacher beliefs on curricular change. The third strand has been on the scope and effectiveness of continuing professional development. Each strand will be discussed with the research in that area being presented in the following sections.

### Contextual Factors

In secondary physical education, teacher change and reform have been addressed in a number of projects, including the Saber-Tooth Project conducted by Ward and
his colleagues (1999a). Teachers were engaged in a PD program with curriculum improvement in middle school physical education as a focus (Ward, 1999a). This project targeted the school district rather than individual teachers. Key elements of this reform project were that the PD was continuous rather than one-time, as it occurred over the course of a school year. The collaboration between the university and the teachers was on a regular basis as members of the research team were in the schools daily. The university personnel were as invested in the curriculum project as the teachers owing to their feelings of being “along for the ride with teachers and students” (p. 380). The Saber-Tooth Project provided a successful example of the reforms that could occur in secondary physical education. More projects of this type must be developed and implemented if we are to improve secondary physical education in our schools (Ward, 1999a).

School Culture. The influence of school culture on a teacher’s change process was the focus of a study by Rovegno and Bandhauer (1997a). The study was undertaken over 3 years as a teacher adopted a constructivist approach to physical education. The teacher was involved in the adoption of a movement education approach in her elementary physical education classes. School culture impacted the teacher’s learning and adoption of the new curricular model. Five school norms were identified as having had a positive impact on the teacher’s change process:

- The school philosophy
- Teacher learning
- Teacher participatory power and responsibility
- Continual school improvement
- The tendency “to feel that we can do anything” (p. 407)

The norms of school culture helped facilitate the teacher change process for the participant as she successfully implemented the movement education approach in her physical education classes (Rovegno & Bandhauer, 1997a). Two of the school norms were viewed as having had a direct impact on the teacher’s change process. The norm defining school philosophy impacted the change process because the principals, staff, and classroom teachers shared similar goals and values concerning their work and felt all teachers had connections with each other. This view prohibited any teacher from experiencing a sense of isolation, which is common in schools. The norm of teacher learning encouraged teachers to learn new approaches in their fields and continue their own learning. This norm supported the physical education teacher as she learned the movement education approach. The last three norms were seen to contribute to the climate of the school. The climate consisted of “optimism, possibility, and empowerment” (p. 421). With this climate, individual teacher change was highly encouraged and promoted within the school.

Pope and O’Sullivan (1998) explored a teacher’s professional culture and the impact on teacher change during the implementation of a new physical education curriculum model. Professional culture refers to the personal cultures that can impact change on an individual basis. The cultural ecology of the school was also examined during this study. Four themes emerged that described the change process for this male physical education teacher: distraction, distance, dismay, and determination. The authors suggested that to accurately understand the change process in physical education, one had to consider the cultural context in which the change takes
place. “The degree to which each cultural component impacts the teacher may determine the extent of the change process” (p. 220). When change occurred at the individual level, it happened because a link was established between the context and the individual involved. The use of a new teaching practice indicated a cultural change had been made, whereas the use of traditional teaching practices indicated no cultural change had been made. It was suggested that in attempting to improve schools there must be strategies utilized that addressed the local culture as it is a key component in the success of the change process. The goal of school reform is not to dismantle the school culture, but to revise it. Teachers’ professional culture must be considered when attempting to prompt change in teachers.

The school culture and context impacted the planning of the workshops throughout the PEP grants, as all but one of the workshops were held in the schools where the teachers were working using the limits of time, space, and equipment available in the school districts. This kept the context realistic for the teachers, so they could see how the process might work in their schools.

**Micropolitics of Schools.** Sparkes (1988) conducted a study that dealt with the micropolitics of a school during an innovation in physical education. Micropolitics are the mini political systems that occur at the school level or department level rather than at the district level. The case study was conducted over a three-year period with a seven-person department in England. The department head attempted to change the structure of the program from grouping students based on ability levels in games to a more mixed-ability group setting. As the change was being implemented the micropolitics of the school and department emerged. In order to remove the “streaming by ability” concept the department head saw a need to change the emphasis in classes from team games to one that offered a varied curriculum that benefited more students. Some of his department colleagues thought the purpose of physical education was to create better school teams in the major sports and this created disagreement in the department concerning the vision of the department.

The only issue that all colleagues agreed on was that the status of physical education was low at their school. In order to increase their content’s status, those within the department developed a language based on the current change literature. The use of this rhetoric was seen as a way to “justify the status of the subject” to upper administration (Sparkes, 1988, p. 166). However, the use of a new language did not change the teaching practices of teachers. The use of new language helped the department provide an illusion of a unified group in the change process. In teachers’ own classrooms there was little change of the type the department head desired. The physical education teachers were still isolated from one another and had little opportunity for collaboration. This allowed teachers to continue their own practices, and no one knew that the practices were different from their talk.

The micropolitical makeup of the school created both possibilities and limits in terms of educational change. Some members of the department attempted change on a limited basis and others continued with their former practices even though the classes were structured as mixed-ability groups. The micropolitics of the school were found to negatively affect the teachers’ change process in the department. When teachers were not united in the change efforts within a department, it was hard for effective change to take place. Therefore the micropolitics of the school
must be considered as a contextual factor that impacts the change process and PD programs (Sparkes, 1988).

**Support.** The impacts of the support of school principals and support of other teachers on the teacher change process have been examined in physical education. Faucette and Graham (1986) examined the impact of an in-service program on the curricula and teaching behaviors of two elementary physical education teachers. At the beginning of the study when the participants thought the principals were partners with them, they were very enthusiastic toward the curricular change and the change in teaching behaviors it required. As the principals withdrew from the program as partners, the enthusiasm of the participants decreased toward the innovation. Both principals impacted the teachers’ implementation process in two areas. The first area was meeting equipment needs and addressing concerns related to scheduling and class size problems. The second area concerned the principals’ ability to provide empathy and constructive feedback to the participants as they implemented the curricular change. The results of this study indicated “the greatest influence on teacher’s levels of commitment were their feelings about the principals’ actions and perceived attitudes” (p. 88). Whether the principal was perceived as an influencer or an inhibitor affected the participants’ use of the new curricular approach. Principals need to be involved with teachers during in-service programs, if teachers are to successfully implement innovations.

A follow-up study of physical education teachers’ concerns and participation styles during an in-service program provided additional insights regarding principal support in the teacher change process (Faucette, 1987). Seven elementary teachers participated in an in-service program concerned with the implementation of a movement approach in their school system. Initially all principals of the participants were to jointly attend the in-service program. However, this was not the case as the study progressed. The concerns-based adoption model developed by Hall, Wallace, and Dossett (1973) was used to determine the types and intensities of participants’ concerns with the in-service program. Data were collected over a 3-month period that included both qualitative and quantitative measures. Participants were classified according to three levels of participation in the innovation. The levels were resisters (nonusers) to the innovation, actualizers (users), and conceptualizers (nonusers who looked at the innovation as being positive) of the innovation. For the two actualizers, the support they received from their principals helped them to implement the innovation because they felt “the principals contributed to their sense of self-efficacy” (p. 439). In addition to determining the participation styles of in-service teachers, this study reemphasized the impact of the principal’s support or lack of support in the teachers’ change process.

Principal support was also found to impact teacher change in a study conducted by Bechtel and O’Sullivan (in press) to determine enhancers and inhibitors to the teacher change process. In this study, four secondary physical educators in an urban school district served as participants to determine the enhancers and inhibitors to the teacher change process. Each of the teachers had implemented changes in either the type of curriculum model offered, instructional methods utilized, the focus of physical education program provided, or structure of the physical education program. Support from principals played a key role in the change process for the participants. The results of the study could impact the design of future professional
development programs. Key to the design of more effective PD programs is gaining support from school principals.

Initially, the Health and Physical Education Coordinator visited all the principals of the participants to inform them of the projects and the requirements and to encourage them to be supportive of the their teachers. The principals were later interviewed to determine what they knew of the project and in what ways they did or did not engage with the work of the physical educator in their school during the project.

Collegial support was also a key component in the teacher change process. The interactions within physical education departments were studied by Stroot, Collier, O’Sullivan, and England (1994) in a study of workplace conditions. Collegial support aligned with collegial interactions and placed into three categories. The first category was a department in cohesion where all teachers shared similar philosophies and goals for their programs. Support from colleagues was included in this category. The second category found more social cohesion with some philosophical differences, so support appeared to be less prevalent. In the third category, coworkers separated themselves professionally from each other by teaching in their own spaces with minimal interactions. There was very little support provided to colleagues in this department. When teachers did not have collegial interactions, then support was not available and change was unlikely to occur. The collegial support was instrumental in influencing the teaching environment. This collegial support should be a key component of more effective PD programs.

A study conducted by Bechtel and O’Sullivan (in press) found collegial support to be a key enhancer for teachers in the change process. Teachers in change often sought other teachers either within their departments or schools who helped them gain new ideas or reassured them as they attempted changes. This support often helped participants maintain the changes introduced. The participants in this study also expressed a desire to meet often as a district department to share ideas from others who had been successful at implementing new ideas and approaches in their programs. Professional development program designers need to address the component of collegial support of teachers when developing programs.

Initially, PD designers had hoped to have teams (i.e., pairs) of teachers from schools, but the teachers’ union insisted that all teachers from all of the schools had to be invited to participate. This limited the number of pairs that could be a part of the projects.

Workplace Conditions. A study conducted by Stroot et al. (1994) explored the workplace conditions of secondary physical education teachers and the influence these had on the culture of the workplace. Three categories emerged from the data relative to the contextual factors of the workplace that affected the culture. The first category addressed why participants entered the profession and what they perceived as the major purpose of physical education. The second category described the daily workload of teachers, the dual role of teachers and coaches, and the rewards and challenges found in the teaching and coaching settings. The third category addressed the status that physical education held within the school. The quality of the workplace was found to be an important consideration as changes were suggested in secondary physical education.

In the Saber-Tooth Project (Doutis & Ward, 1999), one focus was to improve the workplace conditions of the participants. Three key themes related to improv-
ing workplace conditions in physical education were “collegiality, the role of planning and assessment, and professionalism” (p. 426). Collegiality between the participants changed drastically during the study. Teachers moved from working in isolation to working together in their classes and their planning; they viewed this positively in terms of their willingness to implement new ideas, revise existing ideas, and create a more engaging physical education experience for their students. Time was built into their week for this to take place. A sense of unity was developed within the department and this impacted their status in the school. Expecting teachers to do this professional development work outside of school time has not been shown to be an effective way of engaging teachers in professional development.

The new curriculum and the changes in the workplace conditions helped to raise the professionalism of teachers (Doutis & Ward, 1999). The teachers felt their work had taken a more professional approach and this affected them positively. Their program was viewed with increased status in the school and in turn this helped them to realize greater professional job satisfaction. Teachers’ job satisfaction levels were positively influenced, as the students were held accountable for outcomes of the curriculum. The newly found professionalism demonstrated by these teachers helped them to look at physical education differently. They became “willing to take risks, to push the boundaries of their knowledge and levels of comfort, and to make a difference with their students, as well as become activists in their profession” (p. 427).

Four tentative conclusions were drawn from the Saber-Tooth Project (Ward, Doutis, & Evans, 1999). The first is that “vision [purpose] is everything” (p.459). The shared vision of the teachers in this project helped to strengthen the view that the physical education program should be the unit upon which reform efforts are focused. Shared vision was initially designed to impact the curriculum for students; however, the teachers benefited as well, both professionally and personally. The second conclusion was that workplace conditions needed to be addressed in the change process. If the workplace conditions are not appropriate, there will be less chance for change. The workplace conditions often served to distinguish a good school from a bad school in terms of the opportunity for change to occur. The third conclusion centered on the relationships between the areas of planning, teaching, and assessment. All of these areas must align if there is to be an effective program. The last conclusion from this project was that if you changed the business of teaching from the typical multiactivity approach to a more focused curriculum, you could improve physical education programs. Eliminating the “business as usual” approach is one step to accomplish reform in secondary physical education. Helping teachers see the need to attempt new methods of teaching and assessment are critical to the change process.

Personal and Psychological Dispositions, Teacher Beliefs, and Curricular Change

Contextual factors have been shown to impact both teacher change and the PD process. Key to understanding these processes are personal and psychological dispositions, and beliefs of teacher. The literature from the teacher change perspective has focused on both the personal beliefs and psychological dispositions
teachers bring to the PD process. The examination of these areas provides a better understanding of their impact on effective PD program designs.

**Personal Dispositions and Psychological Dispositions.** A study conducted by Cothran (2001) examined the characteristics of physical education teachers who had successfully made curricular changes in physical education programs. The six participants in the study attempted self-initiated curriculum changes. The curriculum models implemented by the participants were the social responsibility model, fitness models, sport education, wilderness sports, and adventure education. Three phases were found to occur in the teachers’ change processes. The first was the initiation phase where factors were considered and decisions made that led to changes being considered. The second phase was the implementation phase. In this phase the change was made. Usually this phase lasted through the first years of the change. The last phase was the continuation phase. Many teachers involved in the change process never reach this phase because the change is discontinued. Four of the participants in the study successfully maintained their changes for 3 years, so they were seen as being in the continuation phase. Three of the participants were in their first or second year of change, so they had not made it to the continuation phase because the change had not been implemented for an extended period of time.

There were two personal characteristics these six teachers shared in initiating and sustaining change. First these teachers wanted to make successful curricular change and reported “they reflected on their programs and the impact it had on their students” (Cothran, 2001, p. 77). The second characteristic was these participants reached beyond their own classrooms and schools for help during the change process. They talked to other physical education professionals, such as university faculty members, and expanded their support network beyond the traditional supervisor. Professionals working with teachers in their change process need to address these characteristics when designing more effective PD programs.

The impact of psychological dispositions held by a teacher were explored in a study conducted by Rovegno and Bandhauer (1997b), with a physical education teacher participating in the change process. The curricular change the teacher made was to move from an activity-centered elementary curriculum to a movement education curriculum. In this study, five dispositions emerged that helped the participant during her change process. First, a teacher had to have correct knowledge of the approach and present it well. Second, the teacher had to realize that learning a new approach is difficult and he/she may need questions clarified. Third, the teacher had to develop practices that were aligned with sound philosophies and theories. Fourth, the teacher had to be willing to change and learn new ideas. Fifth, the teacher had to be willing to suspend judgment on the changes until she tried them. These dispositions helped the participant to understand and implement a new curricular approach as designed. These dispositions were essential for her teacher change process. Dispositions that encourage or enhance teacher change need to be understood and fostered before change from PD opportunities can effectively take place.

**Teacher Beliefs.** The study of the impact of teacher beliefs has taken a prominent role in education literature. Pajares (1992) conducted a review of teacher
belief literature with the goal of providing a better understanding of the impact of teacher beliefs on educational practices by developing a definition of the term. In his attempt to develop a definition for teacher beliefs, he discovered that beliefs are usually defined by the agendas of researchers, so developing a concise definition was not possible. He suggested that the closest we can come to a definition is agreeing that “belief is based on evaluation and judgment; knowledge is based on objective fact” (p. 313). He also discussed several theories concerning teacher beliefs that have emerged and how they related to knowledge that teachers possess. Pajares (1992) suggested that research on teacher beliefs is necessary to gain a better understanding of the role of teacher beliefs on educational practices because beliefs do impact practices.

Ennis (1994) explored the interdependence of beliefs and knowledge of physical educators and how these impacted curricular expertise and decision making. She found that teachers typically made decisions on instructional methods and curricular approaches used in classes based upon their beliefs and knowledge. The strength of a belief impacted how easy or hard it was for them to make change. A teacher’s determination to overcome barriers has been related to the strength of the belief. Weak beliefs are easier to change while strong beliefs are more challenging to change. She also found that teachers hold on to beliefs that are often proven incorrect. New knowledge has not always been effective in changing beliefs. New beliefs “fight” with existing beliefs in order to establish a place in the individual’s belief network. Beliefs that are challenged prior to becoming established in the individual’s belief network are more easily moved out of the network. Knowledge and beliefs impact curricular expertise of teachers.

Kulinna, Silverman, and Keating (2000) studied the role of teacher beliefs on teacher action. They explored the relationship between teacher beliefs toward physical activity and fitness and the activities teachers taught. Teachers holding strong beliefs about the value of physical activity and fitness were hypothesized to incorporate higher levels of moderate-to-vigorous physical activity (MVPA) in their classes and spend more class time involved with these types of activities. Actually, teachers who expressed strong beliefs toward higher MVPA levels and fitness were not able to implement activities that reflected their strong belief or their actions did not align with their beliefs. There appeared to be no relationship between teacher beliefs and teaching behaviors. Contextual variables such as activity space, number of students, and available equipment affected the actions teachers took in their classes, which contradicted their belief systems. The relationship between teachers’ beliefs and actions is a complex one to understand, but it is important as teacher beliefs have the potential to impact the effectiveness of PD programs.

In a study conducted by Bechtel and O’Sullivan (in press), a key enhancer to the teacher change process was teacher beliefs. The beliefs teachers held regarding physical education and teaching influenced their willingness to improve their programs or consider making changes. Teachers’ beliefs often served to prompt them to change and then to sustain the change. Teachers with stronger beliefs about the efficacy of the innovation made more substantial changes to their programs and were willing to take the risk to change. Helping teachers to examine their beliefs should be a included as a component in effective PD programs so that teachers
understand their own beliefs and in some cases try to alter their beliefs through PD programs.

**Continuing Professional Development**

Continuing professional development (CPD) has been defined by Armour and Yelling (2004) as learning experiences that occur after completion of initial teacher education by in-service teachers. Continuing professional development programs are part of the educational reform movements in several countries, including the United States and the United Kingdom (Armour & Yelling, 2004). Many CPD programs are required both by U.S. federal and state education departments as a means to improve student learning (Guskey, 2002; National Commission on Teaching and America’s Future, 2003 [NCTAF]; Rink & Mitchell, 2003; Ward, 1999a). Guskey has written extensively on the impact of CPD programs on teacher change. According to Guskey (2002), it is not merely the exposure to professional development that changes teachers’ beliefs, “but the successful experience of implementation that changes teachers’ attitudes and beliefs” (p. 383). This model has implications for the design and planning of CPD programs and their concern with student improvements in learning.

Armour and Yelling (2004) examined physical education–CPD programs in the United Kingdom. In one study, 20 physical educators with over 5 years of teaching experience were interviewed about CPD opportunities they remembered and the “effectiveness from their point of view” (p. 104). Armour and Yelling provided three suggestions for better-quality physical education–CPD. First, PD needed to be school based and take place in school settings rather than off site. This meant physical educators needed to change how they viewed themselves and their practice so that they understood their practice with students is where they have the greatest opportunity to impact learning (Armour & Yelling, 2004). Often physical educators did not view themselves as able to provide CPD to others but instead relied on outside physical educators to provide them with CPD. Continuing professional development programs could be designed with teachers from the same district or school providing CPD to each other (Armour & Yelling, 2004).

Second, quality CPD programs need to include collaborative opportunities with teachers seeing themselves as members of a community of physical educators as learners. Support could be provided to others in the CPD program and this might impact the effectiveness of CPD. Changes in school policies that allow for communities of learners to be established may first need to occur in order for this suggestion to be implemented (Armour & Yelling, 2004).

Third, a set of experiences (i.e., models or a course) focused on “curriculum and pedagogy for learning in physical education” (Armour & Yelling, 2004, p.109) must be developed. Participants in the study had lifelong involvement in activity as a goal for their students; the development of a curriculum and pedagogy for learning with a lifelong involvement in physical activity focus was an effort to focus teachers’ attention on achieving this goal with their students. This approach to PD suggests that student learning should be the starting point of any PD initiative (Armour & Yelling, 2004). Use of this suggestion may help in designing CPD programs that have a greater positive impact on student learning and activity in physical education.
Summary

Guskey (2002) noted that “although the process of teacher change through professional development is complex, it is not haphazard” (p. 389), and there is a process through which teacher change occurs. There are many factors that affect the design of effective PD programs. This review of literature focused on some of the theoretical models used to explain teacher change, the contextual factors that impact teacher behaviors and curricular change, and the role of continuous professional development in changing teaching practices and learning outcomes. These factors are considerations in designing effective PD programs for physical educators in the future.

Even though the processes of PD have been evaluated over time, it is rare to find systematic research that examines what teachers learned and how what they learned impacted their practice. It is disappointing though hardly surprising to know that many teachers did not perceive a lot of the PD they received as beneficial to their growth as teachers. Providing quality PD is a complicated process. Teacher learning is fragmented and almost totally voluntary. There are few systems in place to allow teachers to build a coherent set of PD experiences. In reality, teachers patch together a diverse curriculum of PD opportunities in odd and assorted ways. Some pursue any opportunity to learn with passion whereas others attend workshops when mandated by the school principal. Another challenge for professional development providers lies in the poor reputation of traditional in-service. Teachers have little respect for 1- or 2-hour workshops when outside experts make little effort to discuss how the content might be applied to their specific teaching contexts.

With a growing interest in PD, there have been many criticisms of traditional notions of PD. Some of the longstanding assumptions have been challenged. These include the assumption that only outside experts can provide PD for teachers. Most outside experts have little knowledge of local contexts and many are not viewed as credible with teachers in the school. For a long time, PD was about providing time to “upgrade” teachers in national curriculum initiatives. Teachers were “inserviced” in new content and/or instructional strategies. In this scenario almost 80% of the funding would be devoted to preparing and delivering the curricular or instructional initiative and 20% to support structures to help teachers implement the initiatives in their teaching contexts (Lieberman & Miller, 1979). As a result, too few teachers bought into the ideas and little of substance changed in the teaching over time. Indeed teachers’ knowledge of the context, of the subject matter, and of students was not only not valued, but was also considered a barrier to successful implementation of the curriculum project.

Additional new types of PD experiences have emerged, such as teacher book clubs (Florio, 1994) and auto-ethnographic writing (Armour & Fernandez Balboa, 2001) but little is known about what is learned by teachers and their students from these experiences. Providers are also challenged by the “agenda-setting dilemma” of PD. There is the tension in knowing how to balance the focus of the PD between the Monday morning content focus and a theoretical/philosophical focus on the topics. It is a constant negotiation between what the clients expect and the educational goals of the PD provider. One also has to balance attention to a priority on content (subject matter of focus), the teaching learning process, and how best to deliver and assess content, as well as the personal development of the teacher as
professional educator. Finally, the intellectual rigor of the PD initiative must be balanced with some teachers’ expectations for practical relevance. High-quality PD must address the needs of teachers and the contexts of their teaching lives while providing challenging and intellectually stimulating work that drives their thinking and critiquing what and why they teach and deliver physical education as they do. None of these challenges are easy to overcome.

Once registered for PD, providers must engage teachers in meaningful ways that can help them shift their thinking and their practice to ensure better-quality physical education teaching and programming for the children and youth they serve. There are several challenges to providing such quality PD. These include

- Creating opportunities where physical education teachers move beyond politeness to substantive talk about their own teaching practices and ideas and a willingness to engage in critical discussion about these ideas with peers.
- Ensuring that teachers’ knowledge of the subject matter, of teaching and learning, and of their students is shared and valued.
- Designing PD experiences where teachers can admit deficits without being considered deficient.
- Addressing what teachers say and cataloguing what they do in practice.

In order to design more-effective PD programs, the above challenges must be addressed during planning and implementation of programs. It is hoped these new PD approaches will result in better PD experiences for physical education teachers and better physical education programs for students.