

Teachers' beliefs

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Trwyddedwyd i'w ddefnyddio ar gyfer y cwrs BMPE7002 - Philosophical perspective in PE

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4.7 Teachers' beliefs

NIKI TSANGARIDOU

Over the last years, teachers' beliefs has become one of the most important concepts in teaching and teacher education (Calderhead, 1996; Pajares, 1992). In codifying and understanding the complexity of teaching, scholars have suggested that greater attention needs to be paid to the teachers' thoughts and actions and how they affect quality teaching (Borko and Putnam, 1996). A number of scholars have suggested that educational researchers need to shift their research focus from pedagogical strategies and teaching behaviors to the beliefs that prompt teachers to use these strategies and behaviors (Richardson, 1996). As Rovegno (2003) suggested "to understand good teaching, we need to hear teachers' voices and study what good teachers thought, knew, and believed" (p. 295).

Calls for exploring the nature and role of teachers' beliefs in teacher education have proliferated in the literature (O'Sullivan, 1996; 2003; Wilson and Berne, 1999; Zeichner, 1999). O'Sullivan (2003), for example, argued that in quality teacher education programs, teacher educators need to understand the critical role of teachers' beliefs and address them in their programs in order to influence teachers' views of teaching and learning. In contemporary research, teachers' change is assumed to lead to better teaching which implies a better education of students (Richardson and Placier, 2001). Scholars have suggested that the beliefs that teachers hold, serve as filters through which their learning takes place and they are critical targets and major determinants of changes in teaching practice (Borko and Putnam, 1996).

This chapter aims to provide an overview of what do we know about teachers' beliefs in physical education. The content of this chapter is based on a selected number of studies in which teachers' beliefs are explicitly represented. Given the rapid growth of research this chapter is not meant to be exhaustive or even comprehensive. The scope, rather, is to define this body of literature, to represent the basic dimensions and directions of this work, and to make it accessible to the physical education community in general. The chapter is intended to provide an

overview of the forms of beliefs teachers hold, how beliefs are developed, and the role of teachers' beliefs on teaching and learning. It is organized around the main area of research on teachers' beliefs and each of its sections examines categories of research conducted on this topic.

More specifically, the first section of the chapter opens with an analysis of the construct of teachers' beliefs and an effort is made to clarify the term. Subsequently, the role of teachers' beliefs in the act of teaching is discussed. Finally, the first section provides a short presentation of the kind of experiences that are influential in the development of teachers' beliefs. In the second section research findings on teachers' beliefs are reviewed and discussed. The third section provides an analysis of major findings and conclusions from this line of research and provides directions for further inquiry and implications for teacher education practices.

Definitions, functions, and origins of beliefs

Defining beliefs

This part of the chapter presents a brief orientation of the meaning of the term teacher beliefs in an attempt to clarify the concept. The construct of teachers' beliefs has been used extensively in the literature and, on many occasions, in quite problematic ways. Distinguishing and defining the concept is a daunting undertaking (Calderhead, 1996; Pajares, 1992). Ennis (1994) observed that beliefs are more difficult to measure directly than is factual knowledge because "an individual's beliefs often must be inferred from statements or actions. They reflect a tacit understanding of personal, social, or professional truths that have been constructed over time through enculturation, education, or schooling" (p. 164).

In his review article, "Teachers' beliefs and educational research: cleaning a messy construct", Pajares (1992) proclaimed that the concept of beliefs is rarely, clearly, defined in educational discourses or

used explicitly as a conceptual tool in research studies. Pajares (1992) commenting on the construct of teachers' belief noted:

Defining beliefs is at best a game of player's choice. They travel in disguise and often under alias – attitudes, values, judgments, axioms, opinions, ideology, perceptions, conceptions, conceptual systems, preconceptions, dispositions, implicit theories, explicit theories, personal theories, internal mental processes, action strategies, rules of practice, practical principles, perspectives repertoires of understanding, and social strategy, to name but a few that can be found in the literature. (p. 309)

Nespor (1987) described beliefs as framing or defining tasks, established a view of cognitive processing essential to understand this function, and identified four levels of thought: internal processing, resources, control or metacognitive processes, and belief systems. Nespor (1987) made the argument that in understanding teaching from teachers' perspectives we have to understand the beliefs which define their work. Fang (1996) defined beliefs as the rich store of general knowledge of objects, people, events and the relationships that teachers have that influence their planning decisions as well as their classroom actions. Educational beliefs have been referred to as beliefs about confidence to affect students' performance, about the origin of knowledge, about causes of teachers' or students' performance, about perceptions of personal feelings, about confidence to perform specific tasks, and about specific subject matters or disciplines (Pajares, 1992).

Generally speaking, beliefs has been a global concept with a variety of meanings. Beliefs are rarely clearly defined in studies or used explicitly as a conceptual tool, "but the chosen and perhaps artificial distinction between belief and knowledge is common to most definitions: Belief is based on evaluation and judgment; Knowledge is based on objective fact" (Pajares, 1992: 313). In other words "although beliefs generally refer to suppositions, commitments, and ideologies, knowledge is taken to refer to factual propositions and the understandings that inform skillful action" (Calderhead, 1996: 715).

The functions of beliefs

Most would argue that beliefs are an important concept in understanding teachers' thought processes, classroom practices, change, and learning to teach (Richardson, 1996). Teaching is embedded in explicit and implicit beliefs, mainly because teaching involves evaluation, judgment, and choice. All teachers hold beliefs about their work, their students, and their subject matter which are part of their broader general belief system (Pajares, 1992).

Teachers' beliefs are considered to play an important part in the judgments, understanding, and interpretations they make every day. Nespor (1987) emphasized that teachers' beliefs influence perception, interpretation, and judgment and therefore have important consequences for what teachers do and say. The beliefs teachers hold influence their perceptions and judgments which affect their teaching practices. Teachers' beliefs play a critical role in defining teaching tasks and organizing the knowledge and information relevant to those tasks (Calderhead, 1996).

Teacher's beliefs only recently gained prominent attention in the literature (Richardson, 1996). Understanding the belief structure of teachers is critical to improving the teacher education programs and teaching practices (Calderhead, 1996; Ennis, 1996; Feiman-Nemser and Remillard, 1996; O'Sullivan, in press; Pajares, 1992). According to Richardson (1996) teacher beliefs "are important considerations in understanding classroom practices and conducting teacher education designed to help prospective and in-service teachers develop their thinking and practices" (p. 102). Richardson (1996) continued to suggest that, in such teacher education programs, beliefs of teachers "strongly affect what and how they [prospective and in-service teachers] learn and are also targets for change within the process" (p. 102).

The origin of beliefs

In the literature three major categories of experience are identified as influential in the development of beliefs about teaching. Research studies have shown that teachers' beliefs may have been acquired and formed (a) during their experiences as pupils in schools, (b) from life experiences, and/or (c) by their teacher education professional preparation program (Fang, 1996; O'Sullivan, 2005; Pajares, 1992; Richardson, 1996). As Richardson (1996) pointed out these forms of experience may not be mutually exclusive and at times may be studied together as is the case with several teacher biography and life history studies.

Research findings indicated that different life experiences contribute to the development of strong and enduring beliefs about teaching and learning (Richardson, 1996). It has also been found that teachers hold many untested beliefs that influence how they think about classroom issues and respond to particular teaching and learning situations (Calderhead, 1996). Several scholars have suggested that teacher beliefs must be brought to light, discussed, tested, and reframed during professional preparation programs in order to make significant changes in teaching and schooling (Calderhead, 1996; O'Sullivan, 2005; Pajares, 1992; Richardson, 1996; Schon, 1983, 1987). Readers interested in this issue

might examine Chapter 4.3 on field experiences by Behets and Vergauwen.

Research findings

Research studies in physical education indicated that teachers' hold strong beliefs about educational issues. Representative studies of this field of inquiry are reviewed under the following ten major categories: (a) beliefs of recruits and prospective teachers about the purposes of PE, (b) beliefs about learning to teach and teaching experiences, (c) beliefs about effective teaching, (d) classroom teachers' beliefs of teaching PE, (e) beliefs about learners and learning, (f) relationship of beliefs to teaching practices, (g) beliefs about subject matter, (h) beliefs about self and teaching role, (i) beliefs about the nature of their work, and (j) teacher concern based on Fuller's framework.

Beliefs of recruits and prospective teachers about the purposes of PE

In the recent past, Lortie (1975) suggested that prior to entering teacher education programs prospective teachers would have spent over 13 000 hours in observation and apprenticeship in K-12 schools. His influential work has shown that preservice teachers enter professional preparation programs with well-developed beliefs about teaching and most of the time their beliefs are difficult to change. Research in physical education indicated similar findings. Preservice physical education teachers enter teacher preparation programs with a broad spectrum of beliefs about physical education and change little over time (Graber, 2001; O'Sullivan, 2005; Stroot, 1996).

Doolittle et al. (1993) suggested that it is vital to explore and understand recruits' beliefs because "beliefs filter what recruits learn during formal training, most adopting ideas that fit their beliefs and ignoring those that do not. ... Understanding recruits' beliefs is also important for teacher educators to exert maximum impact" (p. 355).

Placek et al. (1995) designed a study that used a large national sample to describe recruits' physical education backgrounds and beliefs about the purposes of physical education. Background findings indicated both a wide range of activities and significant similarities across the total program, with more emphasis on team and competitive sports and fitness. Findings revealed that the most frequent belief about the purposes of physical education was for students to learn motor skills or activities and develop physical fitness. The researchers concluded:

Clearly, our recruits' beliefs about physical education are shaped through the social institution of the school – teachers, physical education programs, and sport experiences. The messages absorbed through this socialization probably provide even more powerful messages than those of university-based teacher educators. (Placek et al., 1995: 259)

O'Sullivan 2005, summarizing the major results of this line of research, indicated that "the dominant view of new recruits is that they perceive physical education as being primary skill oriented, prefer coaching to teaching, and are more conservative than other teachers" (p. 5).

In the literature there are some studies which described the influence of teacher education programs on the beliefs of preservice teachers. In an initial study, Doolittle et al. (1993) examined three recruits' beliefs about the purposes of physical education and good teaching from entry to exit in one teacher education program. It was found that the participants' beliefs were well established when they entered the professional program, developed during the recruit stage, but did not change markedly during their training program. "Their rejection or adaptation of particular teaching skills offered by this program illustrated how recruits filter new experiences through the screen of their earlier belief systems. They accepted practices that complemented their core beliefs and ignored practices that did not fit" (p. 364). In explaining the lack of program impact on the recruits beliefs system, Doolittle et al. (1993) noted that possibly the program was not as well designed to help preservice teachers deliberately and directly confront their belief systems. The investigators pointed out that:

Although more teacher educators now recognize the strength of recruits' entering beliefs and the impact these will have on how well recruits absorb program messages, few of us are yet sufficiently skilled in helping recruits articulate, share, discuss, or debate – much less change – their beliefs. (p. 364)

In another study, Graber (1995) explored the beliefs held by student teachers, from two universities, regarding the elements of the teacher education program that most directly guided their practice. Findings suggested that the preservice teachers believed that the practicum experiences were the more valuable aspects of the teacher education program. The participants also believed that professional activity courses (e.g. tennis, basketball) were significant to developing subject matter knowledge. Results also suggested that the prospective teachers had greater difficulties in making a connection between university education courses and the

knowledge they believed essential for physical education teachers. Finally, all participants from one university believed one particular teacher educator mainly influenced their beliefs about physical education.

In a longitudinal study, Matanin and Collier (2003) explored three preservice teachers' beliefs as they evolved throughout a 4-year teacher education program. Data collection spanned 5 years and included interviews, open-ended questionnaires, and reflective documents. Findings show that the preservice teachers assimilated only part of the program messages on teaching physical education relative to content, teaching effectiveness, and the role of planning. The participants emphasized students' effort and participation and rejected the program philosophy on assessment of student learning outcomes. Results also indicated that, due to the impact of their biographies, the participants were less likely to assimilate the teacher education program's messages about classroom management and the purposes of physical education. Matanin and Collier (2003) concluded that the preservice teachers' K-12 and personal experiences played a powerful role in the formation of their beliefs about teaching physical education.

The effects of a teacher education program on the beliefs of a beginning teacher were studied by Curtner-Smith (2001). More specifically, he examined the positive influence of one university PETE program on the practices and perspectives of a beginning teacher with a strong teaching orientation. The PETE program's influence was mediated by the teacher's biography and entry into the workforce. Findings indicated that the PETE program and the teachers' biography influenced his pedagogical philosophy and practices to a great extent. Workplace factors (i.e. facilities, classroom teachers, etc.) did not have a negative impact on the teacher. The teacher "was determined to teach as he had been trained even in the face of some serious situational constraints" (Curtner-Smith, 2001: 81).

Beliefs on learning to teach and teaching experiences

Teachers, especially preservice teachers, hold beliefs about professional development and how someone learns to teach (Calderhead, 1996). McIntyre et al. (1996), in a review article, concluded that teaching experiences have been considered by teachers to be the most valuable component of the teacher education programs. The literature suggested that the role of these experiences in the professional development of teachers is not always positive (Bain, 1990; Dodds, 1989; Graber, 2001). Evidence suggested that school experiences stimulate preservice teachers to adopt more rigid attitudes toward teaching and that

preservice teachers become more custodial, authoritarian, and utilitarian (Dodds, 1989; Graber, 2001; O'Sullivan, 2003; Richardson, 1996). Research findings also indicated that prospective teachers' attitudes toward students decreased significantly as they progressed through teaching experiences and aligned with those of the cooperating teachers (McIntyre et al., 1996).

Reviewing findings on the role of teaching experiences, Bain (1990) concluded that "student teachers seem to become more concerned with control and discipline and to feel less responsible for student learning" (p. 768). In addition, findings revealed that prospective teachers are rarely provided with opportunities for analyzing and reflecting on different aspects of teaching and schooling (O'Sullivan, 2003; Tsangaridou and Siedentop, 1995).

Several scholars have pointed out that during the formal teacher education program and teaching experiences, reflective inquiry should be used to help change the custodial ideologies of the preservice teachers. Tinning (1988), for example, indicated that the pedagogy developed by student teachers is a "pedagogy of necessity". He proposed (1988) that teacher educators should employ a critical-inquiry methodology and break the cycle of the pedagogy of necessity, which characterizes student teaching. Similarly, Kirk (1986) emphasized that "teacher education should be concerned with producing teachers who are critically aware of the complexities of the educational process, of their contribution to this process, and of the potential for change" (p. 242). Reflective approaches and strategies that attempt to surface, challenge, and transform teachers' beliefs have been proposed and used by scholars in several teacher education programs (Byra, 1996; Carlson, 2001; Dodds, 1989; Macdonald and Tinning, 2003; McCollum, 2002; McCormack, 2001; Tsangaridou and O'Sullivan, 2003; Tinning, 1988; Tsangaridou and Siedentop, 1995).

Hardy (1999) examined preservice teachers' perceptions of how they felt the school-based experience helped them learn to teach. Findings suggested that the preservice teachers placed a great deal of emphasis on the accumulation of experiences and "coming to terms" with the realities of teaching. Furthermore, the preservice teachers' personal histories, the context of the teaching environment, and the general ecology of the school setting influenced preservice teachers' beliefs and their development as teachers.

Beliefs about effective teaching

Few studies were found on teachers' views and beliefs about effective teaching. Parker (1995)

reminds us that much of the research on teacher effectiveness has been process-product studies in which the behavior of the teacher constitutes the process, and student-learning outcome is treated as the product. Based on the fact that studies which describe teachers' voices and personal accounts of effective teaching did not exist, Parker (1995) conducted a study to explore high school physical education teachers' views of effective teaching. Findings suggested that teachers' beliefs of effective teaching reflected a hierarchy of pedagogical practices including organization, management, discipline, and control with student learning being the ultimate goal.

A similar observation was made by McCullick (2001) who pointed out that "in socialization research in PETE, one voice is missing: that of the practitioner" (p. 36). McCullick (2001) explored the perspectives of practicing teachers related to the values, knowledge, and skills required for teaching physical education and training teachers to teach. Results revealed that these practicing teachers believed that future teachers should have a love for physical activity, be physically fit, have a love for children and people, and be flexible. The participants believed that teacher educators' effectiveness in preparing prospective teachers related to being credible, displaying a love for physical activity, and having concern for the growth and development of future teachers.

Classroom teachers beliefs of teaching PE

One aspect that has received little attention is classroom teachers beliefs about teaching physical education. Xiang et al. (2002) designed a study to describe the impact of a field-based elementary physical education methods course on preservice classroom teachers' beliefs. The authors suggested that "the methods course had a positive impact on the preservice teachers' beliefs but no impact on their disposition toward teaching elementary physical education" (p. 145). The preservice classroom teachers shared similar beliefs about the value and purposes of elementary physical education as those held by physical education specialists. More specifically, the participants believed that contributing to the development of the whole child; enhancing students' physical fitness and guiding them to a healthy and active lifestyle; helping students develop personal and social skills, and teaching students motor skills were the four major purposes of elementary physical education. Finally, the authors suggested that the two most important aspects of the course that contributed to the participants' beliefs were teaching physical education in an elementary school setting and observing physical education classes.

In another study, Tsangaridou (2002) described the learning process of an elementary classroom teacher during student teaching. Findings indicated that the preservice teacher designed instructional tasks with an emphasis on students' learning. The teacher also used several student-centered pedagogical strategies during the lessons based on her belief that students' knowledge is more meaningful when it is experiential. The researcher concluded that it is essential and valuable to understand preservice classroom teachers' beliefs and practices of physical education if we are to design teacher education programs which may influence prospective teachers to acquire and refine professional knowledge.

Beliefs about learners and learning

Woods et al. (2000) explored what preservice teachers learned about students in an early field experience that involved them in a structured teacher research project. Results suggested that the research project process helped the preservice teachers to learn more about students' motivation and interests, characteristics, and interactions. The research process forced the preservice teachers to challenge "previous beliefs and assumptions about students, as PTs began making connections between their newfound knowledge of students and its implications for curriculum, instruction, and management decisions" (p. 15).

Allisson et al. (2000) explored the epistemological stances on movement skillfulness of preservice teachers. A constructivist approach, that individuals' meanings are created based on the interaction of their previous knowledge and beliefs with recently experienced phenomena, was used as the framework for inquiry into a teacher education program which put emphasis on the development of skillful movers as the major goal of physical education. The findings revealed that the preservice teachers believed that above average ability, task commitment, and creativity were seen as characteristics of being skillful.

Some studies provide descriptions of experienced teachers' perceptions of how students learn, how instructional practices affect students' learning, and what is important for students to learn in physical education. Veal (1998) investigated secondary teachers' perceptions and practices of pupil assessment in physical education. The findings were categorized into five themes that "represent an umbrella of ideas, beliefs, and concerns about pupil assessment which appear to influence all assessment practices" (p. 332). The themes were named: effort, improvement, individualization, purpose/utility, and efficiency. Veal (1998) reported that teachers' assessment practices were affected by the effort and improvement of their students, and that teachers'

individualized assessment strategies. Results of the study also indicated that some teachers use no formal assessment. These teachers believed that "they can see whether a student is learning and that testing was unnecessary. Other themes show that teachers are concerned with efficient use of allocated time and that many of the formal practices are impractical for their situations" (p. 332).

O'Reilly et al. (2001) explored seven female Canadian physical education teachers' perspectives on the experiences they believed important for students to have in their physical education classes. The authors found that "In many cases, 'having fun' became substituted for skill development or even 'challenge' as the most appropriate and the most attainable outcome for their students" (p. 219). The participants believed that the crowded facilities, inadequate equipment, and limited allocated time prevented them from providing constant opportunities for their students to experience profound pleasure in purposeful, focused movement. O'Reilly et al. (2001) pointed out that the conditional restrictions were constant sources of frustration for the participants. They concluded that "despite their desire and efforts to promote lifetime involvement with physical activity, it was most often fun that was highlighted, rather than any attention to skill and challenge" (p. 220).

In another study, Tsangaridou and O'Sullivan (2003) explored experienced teachers' educational theories and found that the teachers held firm and clearly articulated views about student learning and what constitutes a physically educated student. The primary goal of the physical education programs for these teachers was skill development and they believed guided student practice was important for student learning. In addition, the investigators concluded that the teachers' selection and implementation of teaching practices demonstrated their commitments to gender equity and to the needs and abilities of their students.

Relationship of beliefs to teaching practices

Most agree that teachers hold various beliefs about teaching and learning which are part of their broader general belief system. It has been a contestable issue, however, whether or not such beliefs influence their classroom practices (Calderhead, 1996). Researchers of teaching have often overlooked the degree to which beliefs influence the nature of teachers' actions and there is very limited empirical work on the alignment of teacher's beliefs and actions (Fang, 1996; Kulinna et al. 2000; Pajares, 1992; Richardson, 1996; Tinning, 1988; Tsangaridou and O'Sullivan, 2003).

Studies in general education have shown inconsistent results with a few researchers reporting teachers' beliefs related to their practices while other

studies have not shown a relationship between teachers' beliefs and teaching (Calderhead, 1996). In physical education results on the alignment of teacher's beliefs and practices are mixed. Some evidence suggests consistent alignment between teachers' beliefs and their practices. Chen and Ennis (1996) investigated the impact of physical education teachers' value systems on their curricula by examining two physical educators' curriculum content and implementation. Results indicated that the two teachers established curriculum goals and addressed aspects of the physical education content that were associated with their individual value orientations. In another study, Tsangaridou and O'Sullivan (2003) described the relationship between teachers' theories of action and theories-in-use and found that the teachers held strong and well-articulated views about teaching and learning, and the teachers' theories-in-use were consistent with their theories of action.

Other research evidence has shown a partial relationship between theories or beliefs and teaching actions. Veal (1992) used a case study design, to examine the practices (enacted theories) and perceptions (espoused theories) of two middle-school teachers who included formal assessment in their teaching. Teachers who held strong beliefs about student assessment were affected by a desire to treat students as individuals. The author also suggested that the teachers' espoused and enacted theories were often congruent, but they were more incongruent in the areas of performance testing and formative record keeping.

Finally, some studies suggest inconsistent results between teachers' theories or beliefs and actions. Using a multiple case study design to examine the teachers' espoused and enacted theories of action, Romar (1995) found that there was a level of discrepancy between teachers' espoused theories and professional practices. Kulinna et al. (2000) investigated the relationship between teachers' belief system toward physical activity and fitness and what was taught in their classes and found that there was no relationship between teachers' belief systems and their teaching behaviors.

Beliefs of subject matter

Some studies have explored physical education teachers' views of their subject matter incorporating a philosophical perspective. Using this orientation, Green (2000) explored the everyday "philosophies" of 35 secondary teachers working in secondary schools in England. He found that the participants' ideologies related to sport, health, academic value, education for leisure, and "sport for all". Enjoyment was a major consideration for the teachers and the emphasis on enjoyment was prominent in all teachers' "philosophies". Green (2000) indicated that the

participants seldom had anything that could be called philosophies in the sense of integrated, sound sets of ideas. He indicated:

Confusion and contradictions were common features of their views. What PE teachers articulated was typically a kind of check-list of aims and practices frequently centering upon words and phrases like 'enjoyment', 'health', 'skills' and 'character'. ... Indeed, their 'philosophies' appeared more like justificatory ideologies; that is to say, ideologies that served to vindicate teachers' preferred conceptions of PE. (p. 124)

Green (2000) concluded that the impact of philosophy on teachers' "philosophies" from a figurational perspective was limited. Teachers' "philosophies" according to him are best understood as processes rather than states. He argued that "a figurational sociological approach to making sense of PE teachers' 'philosophies' holds out more promise than a (traditional) philosophical perspective" (p. 126).

In another article Green (2002) analyzed and discussed extensively how the figurational sociological perspective can contribute to our understanding of teachers' physical education "philosophies". He suggested that teachers' "philosophies" need to be viewed in context and "can only be fully understood when teachers are located in the figurations they form with each other – as inescapably interdependent people" (p. 65). Physical education teachers are a group of professionals who "have similar habituses at the personal level and all constrained by similar circumstances at the local and national dimensions of their figurations" (Green, 2002: 79). He concluded,

The largely normative views of their subject that teachers internalize are, to some extent, transmitted by these teachers to future teachers whilst the latter are pupils experiencing school and college PE. Hence, the likelihood that PE teachers' outlook on PE remains to a greater or lesser extent tied to 'yesterday's social reality' ... As such, PE teachers' 'philosophies' tended to be practical 'philosophies'; that is to say 'philosophies' that bore the hallmarks of their prior PE and sporting practice and their contemporaneous practical teaching contexts. (p. 80)

Beliefs about self and teaching role

Biographical research on teachers' lives and socialization research has indicated that preservice teachers come to any learning situation with ideas, knowledge, and beliefs acquired through prior experiences (see Chapter 4.6). These all influence the ways in which

preservice teachers think, interpret, and make use of new information (Calderhead, 1996; Stroot, 1996; Stroot and Whipple, 2003; Zeichner and Gore, 1990). Empirical evidence has shown that most of the people who chose physical education as a career, are academically average students who are mostly successful in physical education and sports rather than in academic achievement (Stroot, 1996). They had positive experiences in sports and their physical education teachers and coaches were role models for them. Their experiences in sports during schooling influenced their understanding of what it means to be a physical education teacher (Stroot, 1996).

Research evidence also suggested that the decisions prospective teachers make about their role as teachers are made long before they learn how to teach. Hutchinson (1993), for example, investigated the perspectives on teaching physical education of ten high-school students who had chosen to become physical education teachers. The participants held similar and narrow beliefs about physical education and viewed teaching as a career contingency for coaching. The participants' histories of participating in organized sports or other physical activities prior to teacher education had significantly affected their decisions to choose physical education as their major area of study.

In another study Griffin and Combs (2000) examined physical education interns' perceptions and beliefs about the role of the physical education teacher, their sense of readiness for the student teaching experience, and the consistency of their desire to become physical education teachers during the socialization process. Findings of the study supported the view that individual beliefs are deeply ingrained and neither teacher education programs nor teaching experiences significantly alter them. The researchers stated "it became apparent that the interns either held significant philosophical differences or lacked knowledge about the purpose of teaching physical education" (p. 45).

O'Bryant et al. (2000) investigated what influenced the decision of prospective teachers to become physical education teachers and what were their beliefs about physical education teaching and teachers. The eight participants in the study entered an M.Ed. program in a Holmes institution. They were older than traditional-aged students and several had previous career and educational experiences in areas other than physical education. The participants "were attracted to the field by the love of the content, the dynamics and culture of the work with young people" (p. 191). The prospective teachers believed that their role as a physical education teacher was to be a physically active role model and help students to understand the importance of physical activity, contribute to the development of all students' self-esteem and especially those marginalized in classes, and plan and implement lessons that would

reinforce all students to participate in an active way in class. O'Bryant et al. (2000) concluded that:

This cohort of students was primarily interested in and committed to teaching (as opposed to coaching) and equity in the curriculum and their work with children. These two trends observed in this cohort of students appear to fit core values and shifting paradigms linked to diversity and improved quality of teaching in teacher education programmes. Perhaps faculty in PETE programmes should consider that older, non-traditional students (undergraduate and graduate) bring life experiences (personal and professional) that will enhance their professional socialization. (pp. 191–192)

Teachers' beliefs about the nature of their work

Teacher socialization research described and explored potential factors affecting teachers' work and sought to understand and improve the work of teachers in schools (Stroot and Whipple, 2003; Zeicher and Gore, 1990). In exploring physical education teachers' beliefs about their working lives many investigators have used the occupational socialization framework (Lawson, 1986). Findings from this line of research suggested that the working environment and the nature of physical education teachers' work produced multiple frustrations to physical education teachers. Workplace factors and conditions which affect teachers' work are the low status of physical education teachers and their subject matter, poor communication and interaction with school administration, sexism, work overload, poor facilities, isolation, routinized work, and lack of rewards (Graber, 2001; Macdonald, 1995; Stroot and Whipple, 2003). Readers interested in an extensive review on teacher socialization research might examine Chapter 4.4.

Doune Macdonald and her colleagues used different epistemological traditions (e.g., critical orientation) and different methodological strategies (e.g. life history) to better understand teachers' beliefs. In one study, Macdonald (1995) argued that the professionalization and proletarianization model is another useful framework in understanding teachers' professional work. She pointed out "the tensions between professionalization and proletarianization provide a useful lens through which to understand patterns in beginning teacher attrition" (p. 130). Macdonald (1995) described the frustrations and disappointments for beginning physical education teachers in schools and examined the dissatisfactions that motivated the teachers to leave the profession. She proposed that "rather than being disparate concerns, they can be understood through the dynamic of the proletarianization of teachers' work" (p. 130).

Macdonald (1995) found that some of the situational constraints for physical education teachers, including lack of status, repetitive nature of physical education work and limited decision making was similar to earlier research findings (Graber, 2001; Stroot and Whipple, 2003). Additional concerns included the lack of intellectual stimulation, personal and professional surveillance, and unprofessional staffroom culture. She concluded that the teachers' early phase of socialization reflected the trend of proletarianization, and that the professionalization and proletarianization tension is a useful framework for understanding the perspectives of physical education teachers' attrition. She indicated this perspective can "offer a frame of reference for considering how the nature of teachers' work and their organizational contexts may be changed in order to stem the tide of talented and initially enthusiastic beginning teachers from leaving the profession" (p. 140).

Using the same theoretical lens, Macdonald (1999) examined whether experienced physical education teachers perceived the same frustrations and dissatisfactions as beginning teachers. She found that the participants' work-based frustrations and satisfactions emerged under the general themes of competence, commitment, and authority. Macdonald (1999) found that the participants' working conditions and orientations were more supportive and positive than those reported in other studies by beginning or experienced teachers. The participants' stories differed from other teachers' stories in the following four key ways. "All but one of the experienced teachers: (a) had started their careers in supportive environments; (b) greatly valued their interactions with the students; (c) derived ongoing intellectual challenge from teaching 'Board' physical education; and (d) could influence what they perceived as significant aspects of their work practices and environments" (p. 51). Macdonald (1999) concluded that the professionalization-deprofessionalization tension is a valuable framework at a theoretical and practical level. It allows the exploration of the social regulation and bureaucratic constraints on teachers in different contexts and developmental stages of their careers. Practically, they suggest what work practices should be maintained and "strengthened to support committed, experienced teachers and also what might constitute more satisfying working conditions for beginning teachers" (p. 52).

Macdonald and Kirk (1996), recognizing the role of the dialectical relationship between teachers and cultural context of their work, explored beginning teachers' working dissatisfaction in non-metropolitan school contexts. They found that the participants faced several pressures relating to their isolation, beginning professional status, and personal lifestyle

choices. The participants felt that they were under constant and continuous observation in both their public and private lives. Macdonald and Kirk (1996) concluded that teachers' identities as physical educators were shaped by the dual configuration of schooling and sports. They suggested that "the dynamic process of corporeal regulation within the tightly knit communities put pressure on and shaped how the teachers conducted their professional and personal lives, and constructed their identities, which in turn influenced their satisfaction with physical education teachers' working conditions" (p. 65).

In another study, Macdonald and Kirk (1999) explored the students' beliefs and lifestyles, as self-identified Christians, and the tensions they experienced between their beliefs and professional and pedagogical practices. They concluded that the visibility of students' religious beliefs with professional, curricula, and instructional issues is another challenge to current pedagogies. As they pointed out:

When confronted with contemporary pedagogical principles for health and physical education, the Christian students are faced with dual moral missions; on the one hand, responsibility to their church to proselytize and, on the other hand, responsibility to the socially critical liberal curriculum as defined by the State. For teacher education, this raises questions concerning the breath of beliefs and practices considered appropriate for a graduate moving into contemporary schooling. (p. 140)

The occupational socialization process for physical education teachers has been identified in the literature as complex since "the process not only reflects the expectations and constraints generated by the society, educational organizations, and bureaucracies but also the pervasive influences of working with and within sport" (Macdonald, 1995: 129). O'Connor and Macdonald (2002) used the identity theory to understand how physical education teachers manage their dual teacher/coach roles and the possible tensions that arise through inconsistencies across teaching and coaching responsibilities. They argued that properties of identity theory, such as the dialectical interaction of context and societal influences on personal identities, provide a different way to understand how teachers who work in multiple contexts with multiple responsibilities negotiate their identities in achieving complementarity in their work despite tensions across contexts. O'Connor and Macdonald (2002) studied Australian physical education teacher/coaches' personal philosophies, their dual responsibilities, and the risks and rewards derived from teaching and coaching. Findings suggested that the participants generally enjoyed the dual responsibilities of teaching and coaching. The dynamic tension that existed in

teachers' work was constantly monitored and negotiated by the teachers to reach a level of security. "Teachers constantly negotiated, both self-reflexively and publicly, ways to reduce tensions and maximize complementarity across the responsibilities, and in line with their personal lives" (p. 49). The participants' pedagogical theories and practices involved a commitment across tasks for the benefit of themselves and the students. O'Connor and Macdonald (2002) concluded that the teachers' identities were evolved and established through a reflexive monitoring of action which occurred in light of new information, experience, and knowledge.

Teacher concerns – Fuller's framework

There is much research today documenting how formal or informal social structure of schools affects teachers' perceptions and practices (Stroot and Whipple, 2003; Zeichner and Gore, 1990). Wendt and Bain (1985) suggested that "the informal social structure in certain situations may be more powerful than formal. Success in teaching may depend on accurate perceptions of what is accepted as 'good' and where the power lies" (p. 25).

Over the past several decades, research in physical education has suggested that physical education teachers have a wide range of concerns which affected their teaching practices. Large class sizes, inappropriate facilities, insufficient equipment, increased pupil assessment, external accountability, and new curriculum initiatives are a few of the several variables that influenced their teaching (Meek and Bethets, 1999). Working under such conditions teachers, whether preservice or inservice, undoubtedly have concerns about their teaching and about their capacity to be effective teachers (Meek and Bethets, 1999; Richardson and Placier, 2001).

Teachers' concerns about their teaching as well as their professional progress and development through their careers have attracted the attention of educators for quite some time now (Graber, 2001; Meek and Bethets, 1999; Richardson and Placier, 2001). A number of approaches have been suggested and used to describe teachers' progress and development through their careers. These approaches have been focused on different aspects of the teachers' learning, thinking, and action (Richardson and Placier, 2001). Fuller's model of teacher development and the enormous empirical research upon which it was based underpins concerned-based approaches to research on preservice and inservice teacher education programs. This model is "perhaps the most classic of stage theories in that it was meant to be relatively invariant, sequential and hierarchical" (Richardson and Placier, 2001: 910).

The theoretical foundation of teachers' concerns research focused primarily on the work of Frances Fuller. The primary assumption was that concerns about teaching are an expression of the need to become a more competent teacher (Meek and Bethets, 1999). Fuller's (1969) seminal work of the evolution of teachers' concerns describes the stages that teachers go through as they become teachers. Fuller (1969) defined teachers' concerns as perceived constructive problems, worries, or frustrations when focusing on tasks or challenges. In her model, she suggested three developmental stages of teachers as they gain teaching experience. She indicated that "the evidence seems to support a developmental conceptualization of teacher concerns. We posit three phases of concern: a pre-teaching phase, an early teaching phase and a late teaching phase" (p. 218). Fuller (1969) categorized concerns into three teaching clusters and believed that teachers progress through as they mature in their teaching environment. First, self-concerns are concerns associated with the teachers' ability to teach and dealt with class control and discipline. Second, task-concerns are concerns associated with teaching tasks such as working with big classes, and inadequate instructional materials. Third, impact-concerns focused on the needs of the pupils. Teachers are concerned about themselves as individuals, about the tasks and contents of the teaching process, and about the impact of their teaching on pupil behaviors. Fuller's theory has been used extensively by her associates and other researchers who focused their research effort in the teaching concerns domain. As Meek and Behets (1999) pointed out Fuller's theory "has achieved a status as a developmental paradigm of sorts with concerns frequently being operationalized via George's (1978) Teacher Concerns Questionnaire (TCQ)" (p. 498).

A number of studies explored the nature of physical education teachers' concerns at various career stages using Fullers' framework (Graber, 2001). Studies that adopt a concern-based model include research on both preservice and inservice physical education teachers. Research evidence from these studies on the development of teaching concerns has yielded mixed results. The following are representative of these studies which have used a sample of preservice teachers, a sample of inservice teachers, and a sample of both preservice and inservice teachers.

Preservice teachers

Wendt et al. (1981) attempted to test Fuller's theory of teaching concerns applied to professional preparation of physical educators and found that the theory was not supported by their findings. The cross-sectional results indicated that no change occurred while the longitudinal findings suggested

that self, task, and impact concerns were lowered. They concluded that the Fuller's theory would predict a lowering of self-concerns but heightened task and impact concerns with progression through a teacher education program.

Bogges et al. (1985) examined the level of concern that exists in physical education student teachers with regard to self, task, and impact identified in Fullers' model. In order to detect changes in the participants' concerns patterns the TCQ was administered on three occasions during student teaching: prior to the actual teaching task, at mid-semester, and at the end of the student teaching experience. They concluded that "although the results did indicate a developmental process over the semester, they did not appear to bear out Fuller's theory in the case of preservice teachers" (p. 210).

In exploring the concerns of Belgium physical education student teachers Behets (1990) used two different data collection strategies: (a) a TQ questionnaire and (b) a logbook. Only impact concerns increased significantly and could be documented as a stable variable. The major concerns in the participants' logbooks were concerns about student control and organization. The data from the TCQ and logbooks reflected both idealistic and realistic concerns (Behets, 1990).

Meek (1996) conducted a study to investigate the concerns of British prospective physical education teachers prior to and following teaching experiences. The study had two major purposes (a) to assess the effectiveness of the TCQ with a sample of preservice teachers and (b) to compare the changes in concerns for each preservice cohort as an indicator of developmental shifts in concerns during teaching practice. The author suggested that the TCQ was a poor instrument for the participants. In addition, no significant differences were found on developmental shifts in concerns between cohorts, based on teacher education program and experience.

Capel (1997) described prospective secondary physical education teachers' anxiety and concern after completing two teaching practices. She found that the students experienced moderate levels of anxiety and concern after their first and second teaching practices with no significant differences between the level of anxiety or concern in both teaching practices. She concluded that "the greatest cause of anxiety and concern for these students on both teaching practices was being observed, evaluated and assessed by the teaching practice supervisor" (p. 225).

Another study of testing Fuller's developmental theory of preservice teachers concerns was conducted by Hynes-Dusel (1999). The aims of this study was (a) to describe the concerns of physical education student teachers and (b) to assess the extent to which student teachers expressed concerns that reflect Fuller's theory. Twenty-five physical

education students from two different American universities were administered the Teacher Concerns Questionnaire – Physical Education (TCQ-PE) three times during their student teaching experience. Results did not support Fuller's model. At the beginning of the semester the participants were primarily concerned for self, less concerned for impact, and least concerned for task. At the middle of the semester they were concerned for impact, less concerned for self, and least concerned for task. By the end of the semester they were concerned for self, less concerned for impact, and least concerned with task.

Inservice teachers

Research on experience physical education teacher concerns has been limited. McBride et al. (1986) found the participants followed the Fullers' three patterns of development expressing their highest scores on the impact scale, a moderate score on the self scale, and the lowest score on the task scale.

Faucette (1987) used the Concern-Based Adoption Model to describe seven elementary physical education teachers' types and intensities of concerns as they proceeded through an inservice program and to examine their degree of implementation of the proposed changes. The cross case analysis of the data suggested little change and non-use of the innovations. "Individual profile analysis revealed three distinct participation styles among the 7 teachers – resisters, actualizers, and conceptualizers" (Faucette, 1987: 430). Two of the participants, the actualizers, become users of innovations. Three of the participants, named conceptualizers, felt positively disposed to the changes but did not become users during the inservice program. The other two teachers, named the resisters, were negatively disposed to the innovations and failed to implement them.

More than 10 years ago, McBride (1993) observed that concerns research in physical education had used the TCQ instrument extensively in collecting data. He pointed out that "the instrument is based on Fuller's theory and is designed to assess classroom teachers concerns. The instruments therefore may not be as appropriate in the physical education setting" (p. 189). He conducted a three-phase study to identify task items appropriate to a physical education setting for a planned adaptation of the TCQ instrument. Analysis of the data revealed five new task items for use in the Teacher Concerns Questionnaire – Physical Education (TCQ-PE). McBride (1993) concluded that the TCQ-PE instrument was a valuable data collection strategy for physical education teacher concern research.

Preservice and inservice teachers.

A study with both preservice and inservice teachers was conducted by Wendt and Bain (1989). They used

cross-sectional data to describe physical education teachers' concerns and found that the experienced teachers had lower self and impact concerns. Longitudinal data revealed only evidence of lower self concerns over time. They concluded that "Fuller's hypothesis has not been fully substantiated. It seems evident that change is occurring over time in concern for self. Both cross-sectional and longitudinal data support this. However, lower concern for impact does not follow. It may be that Fuller's scale is valuable only in predicting self-concerns" (p. 180).

Meek and Behets (1999) conducted a study to examine whether the Teacher Concerns Questionnaire – Physical Education (TCQ-PE) was representative of concerns of a sample of British and Belgian preservice and inservice physical education teachers. Data were analyzed according to nationality and teaching experience. "The results of the confirmatory factor analysis cast doubt on the applicability of the TCQ-PE as a adaptation of the TCQ for physical educators in Belgium and Britain" (p. 503). Meek and Behets (1999) suggested:

While there is considerable need to develop and validate applications of TCQ-PE within other culturally different and experience-related samples of physical educators, it is predicted here that to determine the processes involved in concern resolution of physical educators it will be necessary to analyze Fuller's concerns conceptualization within developmental and interpretative analysis, not with adaptation of existing questionnaires. (p.505)

As has been mentioned earlier Frances Fuller's (1969) theory is one of the most classic approaches of teachers' stages of concern and has been accepted by the educational community as a developmental paradigm (Meek and Behets, 1999). Over the past several years we have seen a proliferation of studies using this perspective. More specifically, the vast majority of studies conducted on teachers' work and concerns have used Fuller's framework and the TCQ instrument. Although there is much to be learned from these efforts, findings and conclusions derived from this work need to be interpreted with caution. As Richardson and Placier (2001) indicated, an often unstated assumption of these studies is that the three developmental stages are meant to be generalized to teachers other than those involved in the studies, including teachers in quite different contexts. In addition, these studies seldom address the issue of what causes the change from one stage to another or how a teacher moves along a developmental continuum.

Another concern of these studies relates to the nature of Fuller's conceptual framework as a one-dimensional and linear model (Richardson and Placier, 2001). Few will disagree that nowadays teaching is a complex profession that takes place in

complex environments. Based on this assumption, it seems that alternative conceptual and epistemological models that envisage multiple and different paths may be more appropriate at this time for the investigation of teachers' work and concerns. Today, several conceptual, theoretical and epistemological alternatives (e.g. critical theory, conflict theory, symbolic interactionism) as well as multiple research methodologies (e.g. narrative research, life history, biographical research) are available to the research community. Hopefully, a subsequent review in the near future will be able to call upon a sufficient number of studies with a variety of epistemological orientations and research methodologies to not only describe teachers' concerns but also to describe and assess what happens to students learning when their teachers progress through their career and confront specific concerns.

Summary

Although, teachers' beliefs are considered to play a vital role in defining teaching tasks and organizing the knowledge and information relevant to those tasks (Calderhead, 1996) teachers' beliefs have only recently gained prominent attention in the literature (Richardson, 1996). Several scholars suggested that understanding the belief systems of teachers is critical in improving teacher education programs and teaching practices (Calderhead, 1996; O'Sullivan, 2005; Pajares, 1992).

Research studies have shown that teachers' beliefs may have been acquired and formed during their experiences as pupils in schools, from life experiences, or by their teacher education professional preparation program. The physical education literature suggested that preservice physical education teachers enter teacher preparation programs with a broad, yet conservative range of beliefs about physical education. Studies which described the influence of teacher education programs on the beliefs of preservice teachers suggested that preservice teachers' beliefs about teaching may or may not change or become more sophisticated over time.

A number of studies have described the role of teaching experiences and the teachers' beliefs about these experiences. Teaching experiences have been considered by preservice teachers as the most valuable component of the teacher education programs. Research findings have indicated that prospective teachers' attitudes toward students decreased significantly as they progressed through teaching experiences and that their attitudes become more custodial, authoritarian, and utilitarian towards teaching. Little evidence exists currently which describes teachers' voices and personal accounts of effective teaching. Another area which has received

little attention in the literature is classroom teachers' beliefs on teaching physical education.

Research evidence has indicated that teachers hold firm beliefs about learners and learning. It has also been demonstrated that inquiry-oriented strategies, reflective strategies, and constructivist approaches can help preservice teachers learn more about students' motivations, needs, interests, and characteristics. Such approaches have been helpful in forcing prospective teachers to alter prior beliefs about students and learning.

Very few studies have investigated the relationship between teachers' beliefs and practices even though it has an important role to play in teaching. Some evidence has suggested a consistent alignment between teachers' beliefs and practices. Other evidence has shown a partial relationship, and some studies have suggested inconsistent results between teachers' beliefs and actions.

Biographical and socialization studies on teachers lives have shown that people who choose to become physical education teachers hold several beliefs in relation to the teaching role. It has also been documented that their prior histories shape the ways in which preservice teachers come to think about teaching physical education.

Many investigators have used the occupational socialization framework (Lawson, 1986) to describe physical education teachers' beliefs about their work while others (Macdonald, 1995) have used other theoretical frameworks (e.g. the professionalization-deprofessionalization tension framework) and approaches (e.g. the identity theory approach). Such newer approaches have highlighted teachers' frustrations and situational constraints included the lack of status, the repetitive nature of physical education work and the limited decision making.

Considerable attention has been given to the study of teachers' concerns about their professional practice for quite sometime now (Fuller, 1969; Graber, 2001; Richardson and Placier, 2001). Research findings indicated that teaching concerns ranged from self-survival issues as teachers face the demands of teaching realities, having an impact on students' needs and progress, and improving the educational system more generally. Today, there are several conceptual alternatives and research methodologies that can be used in describing the concerns that teachers face during their professional lives. Insights gained from this line of research can be helpful in addressing key concerns at appropriate times in teacher education programs.

Conclusions

Thus far, this chapter has discussed the construct of teachers beliefs in relation to its development and its

role on teaching. Throughout the chapter, issues of methods, findings, and conclusions of research studies conducted in the area of teachers' beliefs were reviewed and discussed. Since this review is based on selective studies, no claim can be made that is inclusive. However, it is neither mutually exclusive although some important work may have been left out. The goal was to portray some of the promising lines of research which have evolved in this area. In this final section, some of the broader issues found in this area of study are addressed.

The recent attention on teachers' beliefs has demonstrated some of the complex dimensions and factors that interrelate in the process of teaching and learning. This chapter begins and ends with the same premise; that is, still there is inadequate research on teachers' beliefs in physical education. Knowledge derived from the teachers' beliefs area of study will have robust impact on teaching practices only when more research findings will reveal the conditions and possibilities of how to change teachers' beliefs. Researchers interested in educational improvement need to further explore how teachers' beliefs are created and under what conditions these beliefs may have changed over time.

Several scholars interested in quality education point to changes in teachers' beliefs on the basis of specific non-traditional teacher education programs. For many, the solution to quality education is a move to more globalized teacher education programs that will fully prepare teachers for the extremely complex act of teaching. Of course such efforts will definitely need further exploration.

Implications for teacher education

Research evidence has demonstrated that teachers' beliefs play a critical role in teaching. In addition, it was found that the beliefs teachers hold are difficult to change during professional education programs. More often, teachers' initial beliefs shape the professional knowledge acquired through teacher education programs, instead of initial beliefs being shaped by professional knowledge. Based on these indications, a greater emphasis should be given during teacher education programs to the influential role that beliefs play in educational contexts. As has been suggested by several scholars, meaningful change in educational practice may be achieved more easily when teachers' beliefs are brought to the surface and tested through reflection and analytical processes.

Future research directions

Even though, research on teachers' beliefs has increased during the last ten years it is still in its

infancy (Fang, 1996; O'Sullivan, 2005). The first and foremost recommendation, is that more studies in this area of inquiry are definitely needed. Studies, with an emphasis on how teachers' beliefs are manifested in their teaching practices in relation to the complexities and constraints of their context, is a necessary direction of future research.

A second common suggestion is that teachers' beliefs, understanding, judgment, and interpretation should be considered by researchers within the teacher's own context. Therefore, more effort to study and describe the nature of teachers' beliefs need to be placed within the context where such practices occur.

A third recommendation relates to the research methods and designs used to study teacher beliefs. Researchers often describe and record teacher beliefs by detaching them from direct experience or action. Teachers, however, teach within the classroom and school contexts and there is no easy distinction between beliefs and actions. Given the fact that little evidence exists of the relationship between teachers' beliefs and practices there is considerable need to conduct more studies in this area. Investigating the relationship between teacher beliefs and practices empirical knowledge can be generated to inform professional practices. Knowledge deriving from such studies will definitely enhance teacher educators' understanding of the nature, status, and role of teacher beliefs in teaching and learning.

The emerging research work on teachers' beliefs, although valuable, revealed some methodological concerns, which need careful reconsideration in future studies. The difficulties with definitions, inadequate conceptualizations, and different understandings of the manifestation of teachers' beliefs, is an endlessly complex area of inquiry. Some of the existing empirical evidence described the nature of teachers' beliefs but stops short of describing their role and value for the long-term development of teachers. Investigators seem to assume that teachers' beliefs remain the same for a long time. With the exception of a few studies, no rich and longitudinal descriptions exist today, on whether, how, and in what direction teachers' beliefs change over long periods of time. Portraying the essence of beliefs proved to be problematic because they are difficult to articulate, and the subtle, indirect evidence that manifest their existence must be gathered over long periods of time to show stability or evolution (Doolittle, Dodds, and Placek, 1993). Longitudinal studies therefore are needed, to explore teachers' beliefs over their professional development in providing thick descriptions and insights for this area of inquiry. Studying the trajectories of teachers' beliefs, over the years, a knowledge basis can be generated beyond the teachers' self-reported recollections about beliefs. This knowledge can be beneficial to teacher educators in redesigning inservice and preservice education programs.

A final note: No study has yet explored the nature and role of teachers' beliefs as they relate to students' learning outcomes. I strongly agree with Pajares' (1992) proposition that little will have been accomplished if future research into educational beliefs fails to provide insights into the relationships between beliefs, teacher practices and student outcomes.

The review of literature indicated that the study of teacher beliefs is critical to the educational enterprise since beliefs lie at the hard of teaching (Calderhead, 1996; Pajares, 1992). Based on this review it is obvious that methodological and theoretical improvements in educational research during the last decades have helped researchers study teacher beliefs more closely. At the same time this chapter suggests that there is a long way to go in physical education scholarship before we feel confident that we have a clearer picture of the complex construct of teacher beliefs. Future inquiry needs to espouse a diverse range of methodologies (e.g. multivariate designs, narrative research, life history) and theoretical frameworks (teacher identity, sociocultural perspectives) in revealing the complex and unique nature and role of teacher beliefs about the teaching and learning process. Knowledge deriving from these studies should provide insights and help teacher educators contribute to reconstructing teacher education programs. Of course the next decade should speak of our capacity to provide an excellent education to children through excellent teacher education programs.

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