AN EXAMINATION OF TEACHING PRACTICES OF
ELEMENTARY PHYSICAL EDUCATORS

DISSERTATION

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By

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ABSTRACT

Responding to the current educational issue on improving teacher quality as a means to improve student achievement, the need for more learning opportunities for teachers is considered significant to improve teacher quality. The issue of physical educations’ exclusion as a core subject within No Child Left Behind (NCLB) has limited the scale of professional development (PD) programs that university and school districts have provided for physical educators. It is believed that teachers learn many of their teaching practices in the school context in order to survive and sustain their teaching career. The purposes of this study were to describe elementary physical educators’ teaching practices using Academic Learning Time–Physical Education (ALT-PE) and Classroom Assessment Scoring System (CLASS) instruments, to provide valuable insight into why teachers choose these practices in their context, and to explore how they come to learn them. A concurrent mixed model design, which involves two strands of research, qualitative and quantitative, was used to identify teaching profiles of teachers. Two units of 4th grade physical education classes for each of six physical educators (a total of 45 lessons) were observed and videotaped to collect both qualitative (e.g., field notes, interview transcript) and quantitative (CLASS and ALT-PE instruments) data. Interviews were conducted with each teacher before and after each unit and between lessons. The interview and field note data was analyzed by constant comparative analysis and content
analysis and member check, triangulation, peer review and debrief, and negative case analysis were utilized to improve credibility of the data and data interpretation. Data of teaching practices coded with ALT-PE and CLASS were analyzed with descriptive analysis and reliability was established using inter-observer agreement (96%). Profiles of teaching practices within the ALT-PE and CLASS instruments were distinguished by Profile A and Profile B among 12 units. Profile A (n=7) of teachers who scored in the high range in both Classroom Management and Student Outcome domains in the CLASS and spent effective Management time (<10%) in the ALT-PE, concerned on their students and time management issues within the given context to choose their teaching practices. The Profile A of teachers’ learning was featured on-going activities across their teaching career through integrating reflection process into their learning and teaching. In contrast, Profile B of teaching practices was characterized by low range of scores in three domains in the CLASS among four domains and relatively the highest time spent on the Management in the ALT-PE. The Profile B of teacher mainly utilized a book introduced to her 20 years ago to choose her teaching practices with limited reflection on the given context. This study highlighted that teachers’ bottom-line of efforts to be engaged in the given opportunities and community may require for developing and integrating knowledge, skills, and dispositions responding to the context. In addition, this study supported the fact that how and what teachers teach depends on the teacher quality issue that, furthermore, is associated with the quality of schools (Feiman-Nemser, 2001).
Dedicated to my father-in-law
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CHAPTER 1

INTRODUCTION

Teacher quality has gained attention as a vehicle to improve school quality and student achievement. Feiman-Nemser (2001) addresses that “what and how teachers teach” (p. 1013) is directly related to student learning. Moreover, the knowledge, skills, and dispositions these teachers “learn in and from their practice” (p. 1013) will relate to teaching behaviors in their classes (Feiman-Nemser, 2001). The National Commission on Teaching and America’s Future (NCTAF, 1997) supported the assumption that “teachers’ knowledge and skills powerfully influence student learning” (p. 2).

According to Feiman-Nemser (2001), teacher quality is considered to be dependent on what teachers learn to teach and how they implement their learning into their classes across their teaching career. Responding to trends that emphasize acquisition of a certain degree of teacher knowledge, skills, and dispositions that guarantee teacher quality, several sets of standards across the teaching career have been developed and implemented to put the nation on a path of improvement in teaching and learning. For example, standards for teacher education (the National Council for Accreditation of Teacher Education: NCATE, 2002) have been designed to hold accountable high quality teacher preparation programs by indicating accreditation institutions. Moreover,
standards related to teacher performance across teacher career, such as beginning teacher licensing (the Interstate New Teacher Assessment and Support Consortium: INTASC, 1992) and the advanced certification of accomplished veteran teachers (the National Board for Professional Teaching Standards: NBPTS, 1990) are developed and being implemented. The standards provide guidelines for what teachers should know and be able to do in order to support students’ success at meeting the new standards for student learning (NCTAF, 1997).

Accompanying the standards is the need for more learning opportunities for teachers in order to produce and retain high quality teachers at the national, state, and district levels across teaching career. However, currently, teachers’ learning opportunities were criticized from both aspects of quality and quantity including professional development (PD) for in-service teachers. PD is defined in several ways. According to the National Association of State Directors of Teacher Education and Certification (NASDTEC, 2002), professional development is defined as “any coursework, experience, training, or renewal activity required by a state to maintain the validity of a license” (p. E-2) within which 45 states do mandate professional development (Neville, & Robinson, 2003). Moreover, Craft (1996) addressed that continuing PD is “all types of professional learning undertaken by teachers beyond the initial point of training” (p. 6). In order to achieve success at meeting new student standards, PD is considered a critical need to deepen teachers’ content knowledge and develop their teaching practices (Desimone, Porter, Garet, Yoon, & Birman, 2002; NCTAF, 1997). Along with recognition of the need for professional development for in-service teachers, No Child Left Behind (NCLB) Act (2001) requires states to increase the percentage of teachers receiving high-quality
professional development on an annual basis. In addition, development of the National Board for Professional Teaching Standards (NBPTS, 1990) motivates more teachers to participate in professional development and develop more accomplished teaching practice.

In spite of those efforts to improve teacher quality, research in this area continues to reveal several problematic issues related to the current educational context, such as a limited effect of teacher preparation program, induction, and PD programs (Feiman-Nemser, 2001). Accompanied with the standards for teachers and teacher education programs, teacher educators have advocated the identification of a knowledge base for effective teacher education programs that produce prospective teachers who meet the demands of performance-based evidence of competent teacher candidates from NCATE (Christensen, 1996; Munby, Russell, & Martin, 1996). According to several papers, such as Shulman’s knowledge base for teaching (1987) and Munby, Russell, and Martin’s (2001) extensive review of the literature, the current trend is to attempt to bridge the gap and integrate the theoretical knowledge (propositional knowledge) and practical actions of teachers to achieve a readiness of prospective teachers for teaching, comparable to that of experienced teachers when they enter their teaching profession. The focus of the knowledge base for teacher preparation programs is not only “knowing that” but also “knowing how” and “being able to do” that allow for the improvement of teaching performance within a classroom (e.g., content knowledge, pedagogical content knowledge, pedagogical content knowledge, knowledge of curriculum, and knowledge of student) (Borko & Putnam, 1996; Carter, 1990; Grimmett & MacKinnon, 1992; Grossman, 1995; Shulman, 1987).
Aligned with the emphasis on practical knowledge and adaptation of a performance-based assessment system for standards, student teaching internship as school-based field experience has been considered the most essential and valuable period in a teacher preparation program (Askins & Imwold, 1994; Coleman & Mitchell, 2000; Conant, 1963; Ocansey, 1988; Paese, 1984; Tannehill, 1989; Tannehill & Zakrajsk, 1988; Wilson, Floden & Ferrini-Mundy, 2002; Zeichner, 1980). However, according to the literature review, limited impact of field experience on the ST’s perception, belief, concerns, and teaching is reported (Boggess, McBride, & Griffey, 1985; Doolittle, 1993; Hynes-Dusel, 1999; McCallister & Napper-Owen, 1999; Rikard & Knight, 1997; Schempp, 1985). Moreover, inadequate preparation and limited skills of those involved in the field experience such as cooperative teachers, supervisors, and student teachers are sometimes considered barriers to effective teaching and supervisory practice during field experience (Rikard & Veal, 1996; Tannehill & Zakrajsk, 1988). In addition, research on socialization found that insufficient learning of new teachers during teacher preparation program extends to which beginning teachers struggle to survive within their school context during the induction period (Mohr & Townsend, 2001).

According to the research on teacher induction, new teachers address several pervasive issues related to general classroom issues, such as management, individualizing instruction, and assessment (Stroot & Ko, 2006). In addition, five specific themes were consistently addressed by beginning teachers over the last decade: reality shock, wash-out effect, workload, marginalization, and isolation. In response to those beginning teachers’ concerns as well as standards for beginning teachers, induction programs during which new teachers are still learning to teach need to be offered through providing the
conditions, support, and guidance to help them construct a professional, standards-based practice in the context of their teaching (Feiman-Nemser, Schwille, Carver, & Yusko, 1999). However, the results of the AFT analysis (2001) addressed that though 33 states have induction policies, only 22 mandate and fund induction programs. Moreover, currently, it is reported that only 27 states have a formally approved and implemented a state wide support system for beginning teachers (Feiman-Nemser, 2003). Given this context, the overall picture of induction is still uneven and varied across the nation, states, and districts (Feiman-Nemser, 2001; Feiman-Nemser, Schwille, Carver, & Yusko, 1999). In addition, the quality and effect of the programs varies considerably by several conditions: vision of induction, policy support, quality of mentoring, matching, professional standards, and duration of the program. Feiman-Nemser (2001) described that often induction programs suffer from a lack of the necessary resources to improve effectiveness of programs, which “may not foster beginning teachers for complex learning on the part of students” (p. 1031).

With the emphasis on the need for professional development for in-service teachers, a variety of funding sources support professional development either at the district, state, or federal levels (Miles, 2003). Moreover, professional development is offered with varying formats and duration. However, according to the literature review, many professional development programs resulted in a limited effect on change in teacher practices, attitudes, beliefs, and student outcomes (Armour & Yelling, 2004; Desimon, Porter, Garet, Yoon, & Birman, 2002; Guskey, 2002; Porter, Garet, Desimone, Yoon, & Birman, 2000). In addition, by reason of a lack of evaluation on the effect of professional development, it is unclear exactly when and how the influence of
professional development occurs related to the teachers’ learning and teaching practices (Opfer, 2004).

The area of physical education is also responsible for reacting to the demands of current educational issues. Physical education teacher educators have recognized the significance of adequate preparation of teachers for highly qualified teaching performance (Metzler & Tjeerdsma, 1998). Content-specific standards such as the criteria for teacher preparation, licensing, and hiring in physical education have been developed. For example, the National Standards for Beginning Physical Education (1995) has been developed and aligned with the principles of INTASC standards. Moreover, the significance of school-based teaching experience has been recognized as a crucial part of a physical education teacher education program to develop preservice teacher’s knowledge base and improve teaching practice (Askins & Imwold, 1994; Coleman & Mitchell, 2000; Conant, 1963; Ocansey, 1988; Paese, 1984; Tannehill, 1989; Tannehill & Zakrajsek, 1988).

In spite of these efforts to provide sufficient preparation for physical educators, beginning physical educators experience not only the general concerns of new teachers across general and physical education such as reality shock, wash-out effect, and workload, but additional concerns of marginalization and various degrees of isolation have shown remarkable differences from the general education literature (Stroot & Ko, 2006; Williams & Williamson, 1998). Given this context, it is clear that the beginning physical educators need emotional support and professional guidance to remain in and improve their teaching in the context of their new school (Napper-Owen & Phillips, 1995; Stroot, Faucette, & Schwager, 1993).
Considering these specific needs of beginning physical educators, involvement in a high-quality induction program including mentors from the same content area is important (Moir, 2003; Stansbury & Zimmerman, 2000). Specifically, matching the mentor and mentee (beginning teacher) by the same grade level or content area increases both the likelihood of regular interaction and the effectiveness of the support (Gold, 1996; Stansbury & Zimmerman, 2000). Moir (2003) suggested that matching of content area and grade level saves valuable mentoring time and builds opportunities for deeper collaboration. However, if the physical educators are engaged in the induction program, it is unlikely they are assigned to the same content area mentor because of the small number of physical teachers working within a school building, especially at the elementary level.

Exclusion of physical education content as a core subject within NCLB has restricted learning opportunities of professional development programs for physical educators. According to Amour and Yelling (2004), PD for physical education teachers provided by the majority of university and school districts are comparatively little. Moreover, physical education teachers have characterized their PD experiences by a lack of coherence, progression, and relevance to their instruction (Armour & Yelling, 2004; Ward & Doutis, 1999). However, Ward and O’Sullivan (2006)’s two two-year PEP grants of PD resulted in changes of teachers’ belief and practices.

Taken together, though the efforts to provide teachers with more learning opportunities are identified, limited impact and ineffectiveness of the opportunities on teacher change and teaching practices have been found in the related research (Feiman-Nemser, 2001). However, in order to survive and sustain the teaching career, teachers
learn to teach in the context of their actual working environment (Feiman-Nemser, 2001). According to the study conducted by Ward and O’Sullivan (1998) reporting the differences in teaching experience between the same teacher’s 1st year and 6th year of teaching, on-the job-experience mainly serves to shape teaching behaviors in a teacher’s career. Teaching practice modified by experience is the product of “acts of reflection, mentorship by others, professional development, and contextual factors such as the length of time in a setting and the stability of that setting” (Ward & O’Sullivan, 1998, p. 196).

According the situated learning theory, learning occurs in the process of engagement in social-cultural practice in a social setting and means becoming a master or full participant in the community of practice (Lave & Wenger, 1991). In this study, situated learning theory was used to help guide the conceptualization of teachers’ learning process both within and out of their school and/or class settings to see how that process contributes to the development of their current teaching practices observed in their instructional units. In addition, situations that influence a teacher’s choice of teaching practices across the levels of teaching experience within different contexts were explored.

Statement of the Problem

With the recognition of the importance of high quality education in the United States (NCTAF, 1996), education policy and practices in the United States have guided programs and practices for improving teacher quality as a means to improve student achievement (e.g., No Child Left Behind, 2001). Responding to this current educational issue, the need for more learning opportunities for teachers is considered significant to improve teacher quality. However, research shows a lack of teachers’ learning
opportunities across the teaching career as well as limited impact on teacher change and teaching practice in general (Feiman-Nemser, 2001). This issue is of particular concern in the content areas excluded as the core subject areas, such as art, music, and physical education (Armour & Yelling, 2004; Napper-Owen & Phillips, 1995; Stroot, Faucette, & Schwager, 1993). Exclusion of physical educations from a core subject within NCLB has resulted in limited professional development programs that are provided for physical education teachers (Armour & Yelling, 2004). Moreover, even the programs provided to teachers as a part of their professional development have generally been characterized by a lack of coherence, progression, and relevance to their instruction (Armour & Yelling, 2004; Ward & Doutis, 1999). It is believed that teachers learn many of their teaching practices in the school context in order to survive and sustain their teaching career (Feiman-Nemser, 2001), but we know little about how this occurs.

Purpose of the Study

This study intended to provide an opportunity to see how teaching practices develop and provide valuable insight into why teachers choose these practices, and how they come to learn them. The specific purposes of this study were:

- To describe teaching practices of physical educators within the ALT-PE and CLASS.
- To identify why and how teachers choose specific practices in their context.
- To identify how teachers have come to learn these practices
Research Questions

The research questions guiding this study were:

1. What profiles of teaching practices in the ALT-PE and CLASS instruments can be distinguished for teachers units?
2. Why do teachers choose their specific practices?
3. How do teachers develop competencies within their profiles of teaching practices?
4. Are there variations in the profiles of teaching practice between teachers who teach in contextually different environments (e.g. socio-cultural; socio-economic)?

Significance of the Study

According to the literature related to each of the teaching stages, preservice preparation, induction, and professional development in physical education, little research has been conducted to identify how particular teaching behaviors were developed across their teaching career. This study was significant because it contributed to enhancing our understanding of teaching practices of physical education teachers, the manner in which teachers have developed these practices, and the contextual influence on teachers' abilities to demonstrate effective practices.

From a methodological perspective, this study adopted Lave and Wenger (1991)’s situated learning theory as a theoretical framework. A mixed methods research paradigm was used to gather different types of information associated with teaching practices of teachers and contextual influence on the teaching practices. Moreover, this study utilized the observation instrument, Classroom Assessment Scoring System (CLASS: Pianta, La
Paro, & Hamre, 2005), that has been currently developed and validated to identify teaching profiles across multiple subject areas.

From an applied perspective, the findings of study allowed greater insight into meaningful teacher education programs and in-service professional development that can help teachers improve their teaching behaviors within their context and across their teaching career. In addition, this study helped to identify the needs of teachers within different contextual environments.

Limitation and Delimitation

Several limitations and delimitations were considered in this study.

Limitations

1. Data collection protocols included informal and/or formal post-lesson interviews with teachers. Since these interviews were conducted between lessons, teachers were engaged in a differing number of interviews. The focus of the interviews was limited to collecting information about learning related to the particular teaching practices identified in the observed lesson.

Delimitation

1. This study, as a case study, was limited to the description of teaching practices of six teachers. Three teachers were from an urban setting and the others were from a suburban setting.

2. This study focused on teachers in different stages of their teaching career: six to 24 years of teaching experience.

3. The teachers were drawn from a sample of voluntary teachers among those who were initially identified by referral.
4. This study was limited to a focus on elementary physical educators.

5. This study observed two instructional units per teacher. One unit was limited to dance unit and other was each teacher’s self-selected invasion game of activity unit.

6. Since this study focused on two instructional units for each teacher, the duration of this study was varied depending upon the teachers’ unit/lesson plans.

Definitions

Classroom Assessment Scoring System (CLASS)  An observation instrument, which is designed and developed to assess classroom quality and is based on development theory and research exploring interactions of teachers and students (Pianta, La Paro, & Hamre, 2005).

Concurrent Mixed Model Design  Research design that involves two strands of research, qualitative and quantitative, simultaneously, which encompasses “both types of questions, both types of data and analysis, and both types of inferences that are pulled together at the end to reach a meta-inference” (Tashakkori & Teddlie, 2003, p 687).

Induction  A transitional time from teacher preparation to continuing professional development (Huling-Austing, Odell, Ishler, Kay, & Edelfelt, 1989), “which coincides with the first year(s) of teaching, is a time of intense learning and anxiety, different from what has gone before and what comes after” (Feiman-Nemser, Schwille, Carver, & Yusko, 1999, p. 7).

Inference  Final outcome of mixed methods research, which “refers to the inductively or deductively derived conclusions from a study” (Tashakkori & Teddlie, 2003, p. 35).
Inference Quality  The accuracy of inductively and deductively derived conclusions from a study (Tashakkori & Teddlie, 2003).

Meta Inference  The process by which initial inferences derived from each research strand are integrated (Tashakkori & Teddlie, 2003).

Mixed Methods Research  Research that involves qualitative and quantitative data collection and analysis as well as integration of two types of data in the process of a single study (Creswell, Plano Clark, Gutmann, & Hanson, 2003).

Professional Development  “All types of professional learning undertaken by teachers beyond the initial point of training” (Craft, 1996, p. 6).

Teaching Practice  Teaching behaviors coded in CLASS instrument to assess classroom quality. It is categorized by two domains: emotional support and instructional support. Teaching practices that demonstrate emotional support in classes includes positive climate, negative climate, teacher sensitivity, regard for student perspectives, and behavior management. Moreover, instructional support is characterized by effective instructional teaching behaviors of teachers such as productivity, concept development, instructional learning formats, and quality of feedback (Pianta, La Paro, & Hamre, 2005).
This study sought to understand teaching practices of physical educators, to identify why and how teachers choose specific practices in their context, and to identify how teachers have come to learn these practices. To understand practices and the process of learning to teach across the teaching career, this chapter focuses on the literature review in each of the teaching stages: teacher preparation, induction, and professional development. The second section of this chapter provides an overview of the theoretical framework that guides this study across phases of the research procedure: situated learning theory (Lave & Wenger, 1991).

Learning to Teach in the Teacher Preparation Stage

Accompanied with the development of the standards for teachers responding to the current reform efforts (e.g., No Child Left Behind, 2001) teacher educators have advocated identifying a knowledge base for effective teacher education programs that prepare prospective teachers meeting the demands of teacher standards as well as student learning standards (Christensen, 1996; Munby, Russell, & Martin, 2001). In general,
those aspects of the knowledge base for teaching and/or teachers focus on how to improve a teacher’s skill in teaching and create a classroom environment that best supports learning (Christensen, 1996; Shulman, 1987). The efforts to define this knowledge base have evolved between several teacher educators from various perspectives in the general education area. For example, Shulman’s (1987) knowledge base for teaching seems to strengthen the idea of a knowledge base as a starting point and it appears to be the one most frequently adopted in professional education programs regardless of the context (Christensen, 1996; Metzler & Tjeerdsma, 1998; Munby, Russell, & Martin, 2001). His knowledge base began with the assumption that good practice for teachers is dependent upon not only the teacher’s management of the classroom but also the management of ideas within the classroom discourse to provide a sufficient guide for the designing of better education (Shulman, 1987). For example, teachers can employ their own conceptual framework into their teaching, such as the sequencing of materials and formulation of questions.

By focusing on the teaching of particular topics, the significance of content knowledge and pedagogical strategies is suggested and integrated into the teacher’s knowledge. Specifically, Shulman’s knowledge base for teaching includes seven categories of teacher knowledge: 1) content knowledge, 2) general pedagogical knowledge, 3) curriculum knowledge, 4) pedagogical content knowledge (PCK), 5) knowledge of learners and their characteristics, 6) knowledge of educational contexts, and 7) knowledge of educational ends, purposes, and values.

Among these categories, PCK is identified as the distinctive bodies of knowledge for teaching, which provides “understanding of how particular topics, problems, or issues
are organized, represented and adapted to the diverse interests and abilities of learners, and are presented for instruction” (Shulman, 1987, p. 8). Shulman also identified four major sources for the teaching knowledge base: 1) scholarship in content disciplines, 2) educational materials and structures, 3) formal educational scholarship, and 4) wisdom of practice. Thus, Shulman’s knowledge base attempts to include not only propositional knowledge but also the practical, pedagogical wisdom of prospective teachers that supports the highly contextualized content-specificity of the pedagogical strategies employed. Specifically, his PCK reinforces connection between teachers’ understanding of subject matter and classroom practice (Schempp, Manross, Tan, & Fincher, 1998)

Following Shulman’s knowledge base, focus of knowledge base is shifted from propositional to practical perspectives. For example, Carter (1990) started to pay attention to a teacher’s practical knowledge and PCK. The teacher’s practical knowledge includes both the teacher’s personal knowledge that provides a theory of how teachers learn by teaching and how they use their knowledge, and practical knowledge focusing on classroom knowledge that is situated and grounded in the experience of classroom events. Classroom knowledge particularly focuses on classroom order and curriculum progress. Moreover, PCK draws on what teachers know about their subject matter and how that knowledge is translated into classroom curricular events. Accordingly, learning-to-teach issues are concerned with “translating knowledge from one form into another and from propositional to procedural” (Munby, Russell, & Martin, 2001, p. 881).

Grossman (1995) devoted to link teacher’s knowledge to the professionalization of teaching and presented six domains of teacher knowledge: 1) knowledge of content, 2) knowledge of learner and learning, 3) knowledge of general pedagogy, 4) knowledge of
curriculum, 5) knowledge of context, and 6) knowledge of self. However, these domains are integrated and interrelated to each other as teachers draw on them. For example, the knowledge of content includes sub-domains of PCK and subject matter knowledge.

The significance of experience is emphasized with the contribution of Grimmett and MacKinnon’s (1992) study dealing with the concept of craft knowledge as an amending form of PCK and general pedagogical knowledge. Derived from response to experience, craft knowledge is constructed with situated, learner-focused, procedural and content-related pedagogical knowledge. They comment that teaching as a craft embodies sensibility and reflectivity rather than propositional knowledge.

Borko and Putnam (1996) identified knowledge base for prospective teachers within three areas of knowledge categories that are considered applicable regardless of the context: 1) general pedagogical knowledge, 2) knowledge and beliefs about subject matter, and 3) PCK and beliefs. General pedagogical knowledge is described as the form integrating conceptions of self and teaching, of learners and learning, and of classroom management. Knowledge and beliefs about subject matter deal with knowledge growth and variance within subject understanding by teachers. PCK and beliefs include the teaching subject and knowledge of instructional strategies and representation. Thus, for the development of knowledge for teaching, Borko and Putnam (1996) also acknowledged the importance of experience where teachers learn and reflect about new instructional strategies and ideas in the context of their own practice.

Responding to the demands of current educational issues, several physical education teacher educators have also discussed the knowledge base and design for physical education teacher education (PETE) programs from different perspectives that
can guide developing a qualified physical educator based on the standards (Fernandez-Balboa, 1997; Graham, 1991; O’Sullivan, 2003). The significance of school-based teaching experience has been recognized as a crucial part of PETE program to develop preservice teacher’s knowledge base and improve teaching practice (Askins & Imwold, 1994; Hardy, 1999; Kevinston, 1995; Ocansey, 1988b; Paese, 1984, Zeichner, 1980). Based on those perspectives, this section will be followed by review of research on PETE regarding: 1) knowledge base for prospective physical educators, 2) design of PETE programs, and 3) the research on field experience.

**Knowledge Base for Prospective Physical Educators**

As previously discussed, various models have been developed to define a knowledge base for teaching and teachers from different perspectives. Among them, Shulman’s (1987) framework has been pervasively adopted to guide teacher preparation programs. This section describes a knowledge base for prospective physical education teachers in respect to the knowledge categories that Shulman (1987) identified: 1) content knowledge, 2) general pedagogical knowledge, 3) curriculum knowledge, 4) pedagogical content knowledge (PCK), 5) knowledge of learners and their characteristics, 6) knowledge of educational contexts, and 7) knowledge of educational ends, purposes, and values. The issue of what constitutes the seven knowledge categories in physical education will be conceptualized by reviewing related studies and several teaching method textbooks.

**Content Knowledge**

Content knowledge is considered an essential component of a teacher’s pedagogical content knowledge and teacher effectiveness (Curtner-Smith, 1996;
Siedentop, 1989a). The significance of content knowledge is reinforced by several empirical studies in physical education that attempt to present beliefs about the content knowledge in physical education from the perspectives of pre-service and in-service physical education teachers (Curtner-Smith, 1996; McCullick, 2001; Schempp, Manross, Tan, & Fincher, 1998). For example, pre-service teachers recognize the need for subject matter knowledge for their teaching. According to Curtner-Smith (1996), although the pre-service teachers who completed well-supervised secondary school early field experiences believed that content knowledge was a vital component of teacher effectiveness, they knew little about the sports and physical activities that were generally taught within a secondary school curriculum.

Some studies have accounted for the physical educator’s perspective toward content knowledge. Schempp, et al. (1998) investigated the influence of subject matter expertise on a teacher’s PCK. The authors defined the subject expertise of teachers with three criteria: 1) self-identification of expertise on an expertise rating scale, 2) participation in the activity for a sustained period of time and in multiple capacities, and 3) a background interview about subject matter knowledge and experience. This study found that subject expertise plays an important role in a teacher’s ability to employ pedagogical activities. Moreover, subject expertise allows the teachers to conduct effective and enthusiastic teaching practices to the degree to which non-experts cannot demonstrate. This study concludes that subject experts who have demonstrable expertise in a subject area feel more comfortable and enthusiastic in their work.

Practitioners also held perspectives on the need for the dedication to, and a certain level of competency in, a variety of physical activities for undergraduates in physical education.
education teacher education (McCullick, 2001). The practitioners in this study identified physical activity, fitness, and sports as the subject matter in physical education and suggested that a high level of competency as much as being able to perform these activities is desirable and necessary for effective teaching. They believed that visual instructions along with teacher demonstration are critical in teaching physical education. In addition, the practitioners thought that a love for the subject matter would lead to teaching a wide range of curricular activities.

Taken together with the findings of empirical studies, it is clear that there is an agreement on the significant role of content knowledge for teachers. In addition, prospective teachers require acquisition of the content knowledge aligned with K-12 curriculum in schools as well as a certain degree of competence in the subject matter for effective teaching. However, the issue of what content knowledge is in physical education remains the task to be defined (Fernandez-Balboa, Barrett, Solmon, & Silverman, 1996; O'Sullivan, 2003). Early researchers (e.g., Henry, 1964) advocated sub-disciplines of physical education for teacher education content (e.g., exercise physiology, sport psychology). Since then, diverse perspectives on the content knowledge have emerged. Some asserted that the content knowledge domain for pre-service teachers is to be aligned with K-12 curriculum in schools such as sport, games, and fitness (Siedentop, 1989, 2002). Siedentop (1989, 2002) argued that sub-disciplines cannot logically serve as the content knowledge base for professional preparation in physical education because the discipline of kinesiology is not being taught in schools. He has asserted that teachers of physical education need to have a reasonable mastery of the sport activities for their content knowledge. Expertise and effectiveness in teaching
were distinguished by the degree of subject matter competence along with high skilled teaching (Siedentop & Eldar, 1989). Although mastery of subject matter is not necessary to be effective in teaching, performance-oriented subject matter mastery is reinforced as one of the critical elements for expertise in teaching. However, those who support Siedentop’s definition of the content knowledge have had discrepancies with respect to the nature of the content. For example, Tinning (1992, 2002) advocates both an academic and practical domain of content knowledge. According to Tinning’s perspective, knowledge of how to perform a practical activity is essential, but performance competence is not absolutely necessary for physical education teachers. Thus, debate on content knowledge of pre-service teachers in physical education is ongoing from different perspectives. However, few studies have focused on defining what the specific content knowledge in physical education is.

Despite the lack of studies on content knowledge as well as the absence of a national curriculum in the United States, national standards for physical education and several teaching methods textbooks serve as a guideline to determine what to teach in physical education. As a means of accountability for teaching and student learning in physical education classes, the National Association for Sport and Physical Education (NASPE) published the document, *Moving into the Future: National Standards for Physical Education* (NASPE, 1995, 2004), to define what students should know and be able to do in physical education. Although the standards have not been mandated at a national level, they have been adopted as a framework to design and determine educational programs at the state, district, and/or school levels including content and curriculum. The standards attempt to provide developmentally appropriate physical
education for students across grades K-12. For example, the choice of content across the grades is shifted from fundamental motor skills (e.g., locomotor, nonlocomotor, and manipulative skills) in the primary years to specialized skills in the middle school year and more advanced skills to master in the high school. Examples of the content that are indicated in the standards are presented in Table 2.1.

<table>
<thead>
<tr>
<th>Grades K-2</th>
<th>Grades 3-5</th>
<th>Grades 6-8</th>
<th>Grades 9-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>Fundamental Motor Skills</td>
<td>Specialized Skills</td>
<td>Advanced Skills</td>
</tr>
<tr>
<td>- Sequential</td>
<td>- Locomotor</td>
<td>- Modified sport</td>
<td>- Aquatics</td>
</tr>
<tr>
<td>locomotor skills</td>
<td>- Nonlocomotor</td>
<td>- Dance</td>
<td>- Team sports</td>
</tr>
<tr>
<td>- Manipulative</td>
<td>- Manipulative</td>
<td>- Gymnastics</td>
<td>- Dual sports</td>
</tr>
<tr>
<td>skills</td>
<td>skills</td>
<td>- Outdoor activities</td>
<td>- Individual sports</td>
</tr>
<tr>
<td>(Some</td>
<td></td>
<td></td>
<td>- Dance</td>
</tr>
<tr>
<td>specialized skills)</td>
<td></td>
<td></td>
<td>- Gymnastics</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Outdoor pursuits</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>- Self defense</td>
</tr>
</tbody>
</table>

Table 2.1: NASPE proposed content of physical education.

Considering that the focus of this study is on elementary physical education settings, this section will pay more attention to the content of elementary physical education by reviewing several elementary physical education textbooks. The NASPE standards contribute to the content development of physical education within the textbooks (Gallahue & Donnelly, 2003; Graham, Holt/Hale, & Parker, 2004; Pangrazi, 2001). Although the authors approach teaching physical education from their own perspective, overall, they attempt to provide developmentally appropriate physical education programs aligned with the standards. Concerning the growth and development
of students, the models such as developmental physical education (Gallahue & Donnelly, 2003), skill theme approach (Graham, Holt/Hale, & Parker, 2004), and dynamic physical education (Pangrazi, 2001), focus on teaching fundamental movement skills (e.g., locomotor, nonlocomotor, manipulative, nonmanipulative) at the primary school levels and refining and/or applying the skills during middle and high school years (Table 2.2 and 2.3). They also identify several specific physical activities as appropriate content of physical education, such as sports, games, dance, gymnastics, and recreational activities.

<table>
<thead>
<tr>
<th>Title</th>
<th>Purpose</th>
<th>Focus of Skills</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gallahue &amp; Donnelly (2003)</td>
<td>Developmental Physical Education</td>
<td>To provide developmentally appropriate PE - Movement skills</td>
<td>Sports, dance, recreational activities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Locomotor Manipulative Stability</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physical fitness - Health-related Performance-related</td>
<td></td>
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<tr>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Graham, Holt/Hale, &amp; Parker (2004)</td>
<td>Skill Theme Approach</td>
<td>To provide developmentally appropriate PE - Movement concepts</td>
<td>Game, dance, gymnastics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Skill themes: Locomotor Nonmanipulative Manipulative</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pangrazi, (2001)</td>
<td>Dynamic Physical Education</td>
<td>To provide developmentally appropriate PE - Movement concepts</td>
<td>Rhythmic movement, gymnastics, game, sport</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fundamental motor skills - Locomotor Nonlocomotor Manipulative</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Specialized motor skills - Rhythmic movement, gymnastics, game, &amp; sport skills</td>
<td></td>
</tr>
</tbody>
</table>

Table 2.2: Different approaches to content of physical education.
Table 2.3: Different approaches to development of physical education content.

For example, the *skill theme approach* was developed by Graham, Holt/Hale, and Parker (2004) by adapting and expanding the curriculum diamond (McCrum & Mustain, 1995) to elaborate three areas of focus and progress for content of physical education across elementary, middle, and high school programs. During elementary school grades, children learn and accomplish a certain degree of proficiency regarding movement concepts and skill themes (e.g., fundamental movement) to build a foundation that allows children to combine other skills within a complex setting. Middle school students are exposed to broad content areas related to lifetime and health-enhancing activities that require integrating the foundation built in elementary grades into a variety of movement forms. Students in the later grades devote time to refining the skills to the degree to
which they develop expertise in specific sports and physical activities that they enjoy and desire to be proficient. Finally, the skill theme approach can produce students who are competent in a variety of locomotor, nonmanipulative, and manipulative motor skills through designing the content appropriate to a child’s developmental level as well as reflecting on the needs and interests of students across the grades (Graham, Holt/Hale, & Parker, 2004). In addition, the concept of fitness and the cognitive and affective domains of physical education are embedded across the content areas.

Graham, Holt/Hale, and Parker (2004) described elementary physical education that focuses on learning movement concepts and skill themes. The movement concepts and skills are incorporated in the various movement forms within sport contexts including games, dance, and gymnastics. Tables 2.4 and 2.5 present the specific content of movement concepts and skill themes within the skill theme approach.
Table 2.4: Movement concepts (adapted from Graham, Holt/Hale, & Parker, 2004, p. 27).

Table 2.5: Skill themes (adapted from Graham, Holt/Hale, & Parker, 2004, p. 27).
Graham, Holt/Hale, and Parker (2004) suggested focusing on movement concepts for primary grade children to provide them with time to learn and understand vocabulary related to the movement concepts that are also pervasively used in skill themes. Later grades emphasize the quality of skills themes beyond the movement concepts. Although the focus of the content differs from one grade to the next, the movement concepts and skill themes are taught concurrently (Graham, Holt/Hale, & Parker, 2004).

Taken together, although there is no consensus on the definition of content knowledge in physical education, it is clear that prospective teachers should know and be able to teach the content being taught in the grades K-12. According to the national standards for physical education (NASPE, 2004) and several recent textbooks (Gallahue & Donnelly, 2003; Graham, Holt/Hale, & Parker, 2004; Pangrazi, 2001), the focus of content for elementary school grades should be to develop fundamental skills and some specialized skills. Specialized and advanced skills are considered the main focus for middle and high school grades. Moreover, several specific activities are identified to teach these skills across the grades, such as sport, dance, and gymnastics.

General Pedagogical Knowledge.

The need for pedagogical knowledge and skills is reinforced for effective teaching. Shulman (1987) defined pedagogical knowledge as “those broad principles and strategies of classroom management and organization that appear to transcend subject matter” (p. 8). Contemporary pedagogical knowledge advocates the integration of theory and practice effective teaching practices to extend the degree to which it articulates the aspects of ‘how to’ solutions (Tinning, 1992). Tinning (1992) argues that teachers require pedagogical skills to organize and manage a class corresponding to the motor skills.
students need to acquire. Some studies support the significance of the pedagogical knowledge of teachers to improve teaching effectiveness within the class settings (Griffey & Housner, 1991; Hardy, 1999). For example, Griffey and Housner (1991) conducted a study comparing experienced and inexperienced physical education teachers with respect to their class planning as a prerequisite skill for pedagogical competence. The findings indicated that experienced teachers were more concerned with managing activities during instruction. The authors concluded that familiarity with the complexity of instructional settings is necessary for effective teaching behaviors to employ pedagogical skills appropriately. Hardy (1999) also found that pre-service teachers could use their “learn-to-teach strategies” (p. 194) and build up pedagogical skills during their school-based experiences. Overall, these studies suggested that pedagogical knowledge and skills that are applicable to the school setting can help prospective physical education teachers employ effective teaching.

Research on effective teaching contributes to identifying pedagogical knowledge and skills that facilitate intended teaching and student learning (Rink, 2003). Early studies were devoted to describing effective physical education classes by identifying and investigating the proxy variables associated with student achievement to analyze teachers’ and students’ behaviors within PE classes. For example, the fact that 25 to 50% of class time is devoted to noninstructional class activities led to emphasis on the needs of investigating time variables to analyze and improve teachers’ managerial and instructional skills in PE classes (Anderson, 1980; Anderson & Barrett, 1978). The concept of Academic Learning Time – Physical Education (ALT-PE), the amount of time a student is successfully engaged in physical education content activities related to lesson
goals, has been developed by Siedentop and his colleagues (Siedentop, Birdwell, & Metzler, 1979; Siedentop, Tousignant, & Parker, 1982) and most frequently used to collect time-based data. Furthermore, the effectiveness of ALT-PE has been verified associated with student achievement. A validation study has been conducted to determine the relationship between ALT-PE and student achievement (Silverman, Devillier, & Ramirez, 1991). Two volleyball skills were used to identify students’ achievement and sixty students participated in this study. In general, the author suggests that validity of ALT-PE as a process measure for student achievement can be partially substantiated. Therefore, ALT-PE is considered as a reliable and positive predictor for student learning (Siedentop, 2002; Silverman, 1985).

Along with the fact that increasing the amount of time spent for skill activities by reducing noninstructional activities (e.g., management, organizing activities and class) is critical to improving student learning, several studies identified the key variables (e.g., types of content, students’ skill levels) that impact varying ALT. For example, students who are learning team sports get more involved in engagement time than learning individual sports (Metzler, 1980). Moreover, students can get varying engagement time depending upon their skill levels. Shute, Dodds, Placek, Rife, and Silverman (1982) found that low-skilled students spent less time for skill activities and engaged in easy difficulty level tasks rather than other students. The authors suggested that teachers should modify or provide individualized instruction for low-skilled students to increase their engaged time in tasks relevant to the content.

Considering appropriate levels of difficulty in activities, some studies argued that time variable is “not a sufficient predictor of effectiveness” (Rink, 2003, p. 168) and
emphasized quality and types of practices (Rink, 2003; Silverman, 1985). According to Silverman (1985), practice at appropriate level was positive predictor for student achievement but inappropriate level of practice was negatively related to the achievement. In addition, Ashy, Lee, and Landin (1988) found a moderately high significant relationship between student achievement and practice using correct techniques in elementary classes. Taken together, these studies constitute a starting point to analyze teachers’ and students’ behaviors contribute to identifying significance of increase in engagement time at appropriate level of practice that allows students to master a skill or activity within given time frame and to improve teacher effectiveness. Based on these studies, specific knowledge and skills demonstrated by effective teachers have been identified and investigated.

Specific pedagogical knowledge and skills related to effective teaching have emerged from class management and instructional task systems. First, class management has been considered necessary for effective instruction. Management, which consists of nonacademic tasks, represents the ability of teachers to create, maintain, and effectively organize learning environment (Graber, 2001; Graham, Holt/Hale, & Parker, 2004). Teacher’s managerial task is defined as “the non-subject-matter functions necessary for a class to run smoothly and efficiently over a period of time” (Graham, Holt/Hale, & Parker, 2004, p. 125). Examples of managerial tasks for teachers include maintaining order and organizing students into groups and formations quickly (Graber, 2001).

Literature dealing with class management has identified rules and routines as significant protocols to establish effective managerial task systems within physical education class settings (Graham, Holt/Hale, & Parker, 2004; Pangrazi, 2001). Routines
consist of several activities, such as: entering and leaving the gym, attention, equipment, and grouping. Several studies have emphasized the need for establishing routines during the first few days of lessons to provide prompt instruction/reinforcement to reinforce appropriate/ inappropriate behaviors, and to practice the routines. For example, according to the study of seven effective elementary school teachers (Fink & Siedentop, 1989), teachers spent most of their time establishing managerial and instructional routines to ensure appropriate student behaviors and the smooth operation of class activities during the first several classes. The teacher routines were clearly described, practiced and supported with ample amounts of feedback in classroom. Another study of six middle school teachers supports the finding of the previous study (Osling, 1996). Although type and arrangement of routine were varied situationally, established routines during the first four lessons lasted until the midyear. This study indicated that contextual characteristics, such as the number of classes, students, and teachers using a facility and the requirement for students to dress-out, can directly impact utilization and implementation of the routines.

Rules are “general expectations” (Graham, Holt/Hale, & Parker, 2004, p. 129) for acceptable and/or unacceptable behaviors that are applicable to most situations. Graham, Holt/Hale, and Parker (2004) provided general guidelines that help develop and translate rules into class, such as explaining why the rules are necessary, stating rules positively, keeping a minimum number of rules, posting rules, and making sure the children understand the rules. In addition, teachers’ particular behaviors contribute to managing student behaviors. For example, Kevinston (1995) found a significant relationship of
weighted withitness of teacher behaviors with students’ compliance. Teachers possessing withitness led higher students’ responses returning off-task to on-task quickly.

Overall, establishing and implementing routines and rules allow teachers to operate class activities smoothly. For prospective teachers, it is necessary to set and adhere to performance standards that are consistently covered to all children and situations related to the specific rules and routines for effective management systems (Graham, Holt/Hale, & Parker, 2004). Appropriate class management, therefore, contributes to developing not only effective learning environments but also student responsibility through limiting students’ behaviors and clarifying teachers’ expectations of students.

Pedagogical knowledge and skills also exist within instructional task systems. Acquisition of rich instructional repertoire and strategies accommodated to learner skills and abilities is critical to allow teachers to transform their content knowledge into PCK (Chen & Ennis, 1995; Darling-Hammond, Wise, & Klein, 1997; Housner, 1992). Several specific instructional skills, such as task presentation, content development, or teaching styles, have been investigated and identified as relative to student learning across content and context in physical education. For example, Rink (1994) defined task presentation as a way to communicate between teachers and students for direction and instruction. Task presentation of more effective teachers is characterized by clarity, the use of full demonstration, and cues (Werner & Rink, 1989). In order to identify the relationship between task presentation of teachers and student achievement, Rink and Werner (1989) developed Qualitative Measures of Task Presentation Scales (QMTPS) observation instrument that focuses on four domains: 1) type of task, 2) task presentation, 3) student
response, and 4) teacher congruent feedback. According to a validity study of the QMTPS instrument (Gusthart, Kelly, & Rink, 1997), teachers’ task presentation scored on the QMTPS is significantly correlated to student achievement for forearm pass and serves in volleyball lessons. Moreover, teachers’ specific task presentation behavior, use of critical cues aligned with students’ motor development, resulted in significant achievement and long-term improvement of student in the motor skills (Masser, 1993).

Instructional tasks are analyzed and categorized to allow teachers to provide appropriate practice and practice progression for content development dependent upon instructional purposes for skill development such as informing, extension, refinement, and application tasks (Rink, 1985, 1994). Following the category development, several studies have shown the patterns of task structure and impact of different task structure on student learning. For example, Jones (1992) described physical education teachers’ employment of a typical task development pattern, in which teachers initiated informing tasks, added extension tasks, and applied skills to a modified game situation. Although a lack of refinement tasks in physical education is discussed in Jones’ study, several studies identified the significant role of refinement tasks for student learning. According to Masser (1987), student groups that received instruction, practice, and refinement tasks showed immediate and long-term positive effect in the standing broad jump achievement. Moreover, Pellett and Harrison (1995) and Rink, French, Werner, Lynn, and Mays (1991) found that both extension and refinement tasks produced significant student achievement and refinement conducted more immediate effect for students’ daily and partly progression. Overall, providing appropriate progression of increasingly difficult tasks is crucial for proper content development (French, et al., 1991).
Many alternative forms of instructional styles have been identified and described to determine their effects. For example, Harrison, Fellingham, Buck, and Pellett (1995) examined the effect of skill teaching and mastery learning as direct instruction strategies during volleyball lessons. Both instructions produced student learning to play volleyball game and significant improvement in skill performance. Another study comparing mastery learning and nonmastery learning groups showed that although there was no significant difference in skill performance of basketball in game situations, mastery learning group showed better performance in isolated skills (Blakemore, Hilton, Harrison, Pellett, & Gresh, 1992). In addition, teaching styles within Mosston and Ashworth’s (1986) Spectrum of Teaching Styles were compared in terms of skill acquisition. Among ten teaching styles introduced by Mosston paradigm, four teaching styles most often investigated in physical education area: command style, practice style, reciprocal style and inclusion style. For example, Boyce (1992) compared three different teaching styles and found that the command and practice style performed superior to reciprocal styles in riflery shooting skill acquisition and retention. Moreover, in college volleyball classes, low skilled students performed better with command style when learning set and with practice during spike (Harrison et al., 1995). Therefore, the effectiveness of a selected instructional style is dependent upon the skill and/or tasks as well as age and/or the ability of learners.

Based on the findings of research on effective teaching, several pedagogical knowledge and skills that prospective physical educators should acquire are recognized associated with class management and instruction. Establishing managerial and instructional routines and rules during the first few days are critical to create an effective
learning environment and manage students’ behaviors. Teachers require spending sufficient time to clearly describe, practice and support with sufficient feedback the routines and rules in classroom. Once the routines and rules are established, it is possible for students to be engaged more time in activities instead of non-instructional activities, which allows students to become skillful within given class time in case of practice at appropriate level of difficulty. Moreover, good pedagogical skills within a given instructional type have been investigated to emphasize several subsequent instructional skills: task presentation (e.g., clarity, the use of full demonstration, and cues), content development (e.g., informing, extension, refinement, and application tasks), and teaching styles (e.g., mastery learning, non-mastery learning, command style, practice style, reciprocal style and inclusion style). Overall, it is clear that the various pedagogical knowledge and skills identified are devoted to improving teacher effectiveness. Since this pedagogical knowledge and skills are to be used in classroom settings, Rink (2003) suggested that acquisition of such knowledge and skills must be conducted within the context in which it will be used.

Curriculum Knowledge

Curricular knowledge helps prospective teachers learn how to develop and design their physical education programs (Bain, 1990). Several studies have demonstrated the need for this knowledge in the school setting for prospective physical education teachers (McCullick, 2001; Tinning, 1992). The practitioners in the study of McCullick (2001) perceived that pre-service teachers who acquired flexibility and creativity were able to thrive with limited resources, which is a dilemma that many physical education teachers face in authentic school settings. Related to this ability for teachers, Shulman (1986,
1987) developed a curriculum knowledge base for teaching. He defined this knowledge as the teacher’s ability to design the teaching of particular subjects and topics at a given level with the variety of instructional materials available. In the area of physical education, Tinning (1992) mentioned that student teachers need to acquire specific curriculum knowledge which relates to the teaching of physical education. Ennis (1994) also defined curricular expertise as “teachers’ abilities to select and convey content appropriate to the learner within a particular contextual setting and situation” (p. 164). In order to provide children in designated subjects aligned with student learning standards by using limited equipment and within the school context available, prospective physical education teachers need to develop the ability to design and select a curriculum that is context-specific and appropriate to their school’s situation. Therefore, prospective teachers are to be exposed to and/or trained in a certain range of curriculum models to increase their choice for development of their own educational programs during the PETE program (Bain, 1990).

Siedentop and Tannehill (2000) identified several curriculum models, such as developmental physical education, adventure education, physical activity, fitness, and wellness education, integrative physical education, and sport education, which have been developed, tested, and implemented in physical education school settings. Among those models, the developmental physical education curriculum is typically employed for the elementary grades of physical education (Gallahue & Donnelly, 2003; Graham, Holt/Hale, & Parker, 2004; Pangrazi, 2001: Siedentop & Tannehill, 2000). Developmental theme approaches to teaching elementary physical education facilitates designing and implementing learning tasks dependent upon individual learners’ developmental level.
and needs. Moreover, the learning tasks are developed and organized by developmental progression. Considering that the focus of this study is on elementary physical education class setting, several developmental curriculum models will be elaborated.

The Developmental Curricular Model. Gallahue and Donnelly (2003) developed a developmental curricular model that is conceptualized by several components, such as phases of motor development, categories of movement, content areas, levels of movement skill learning, and styles of movement skill learning, and styles of teaching. This curricular model aims to understand the learner as an individual and to develop one’s movement abilities in various categories of movement (e.g., stability, locomotion, manipulation) across phases of motor development: reflexive, rudimentary, fundamental, and specialized movement phases. Moreover, three levels of movement skill learning (e.g., beginning, intermediate, and advanced level) are identified to help teachers plan and implement appropriate activities through a variety of teaching styles (e.g., indirect teaching or direct teaching).

According to the developmental curricular model, curriculum themes for the preschool and primary grades focus on developing and refining fundamental movement skills. Since children execute beginning level of learning in many movement skills during this period, indirect (student-centered) teaching style is considered appropriate for children in these grades. Gallahue and Donnelly (2003) suggested several types of activities that reinforce practice and development of fundamental movement skills, such as guided discovery activities, problem-solving experiences, and developmental games, dance and gymnastic activities.
The intermediate and upper elementary grades children are considered to be able to combine and use stability, locomotor, and manipulative movement skills in a variety of sport-related activities. Following the children’s acquisition of movement categories, the curriculum themes focus on the development of the specialized movement skills related to particular sport activities through practicing them within a variety of static activities as well as dynamic games. Children during this period reach an intermediate level of skill learning and direct (teacher-centered) teaching style is suggested.

Overall, the development curricular model as a blueprint for teachers reinforces providing age-appropriate and individual appropriate physical education programs. The model was developed on the basis of age-appropriate levels of motor development and skill learning across elementary grades allows teachers to understand and implement age-group appropriate physical education programs and activities. Moreover, Gallahue and Donnelly (2003) suggested that flexibility in the modification of specific objectives and individualized assessment procedures facilitates individual-appropriate physical education programs and activities following individual learners’ variation (e.g., developmental level, needs).

Skill Theme Approach. Graham, Holt/Hale, and Parker (2004) suggested progression of teaching focus for the curriculum to design a developmentally-appropriate curriculum across elementary grades. Primary level children focus on learning each of movement concepts along with practicing one or more skill themes through various types and levels of activities. As they move to the upper grades, they focus more on learning skill themes in a variety of contexts (e.g., different sports, dance, or gymnastics). Developmentally appropriate progressions for each level of teaching content are
determined based on an analysis of the interaction between skill themes and movement concepts embedded in the teaching content as well as students’ skill levels. Graham, Holt/Hale, and Parker (2004) adopted a progression spiral framework to clearly guide teachers to develop an appropriate progression of the activities responding to the children’s developmental levels.

A spiral structure of pedagogy (teaching the content) to meet students’ developmental needs is suggested to help teachers organize activities from easiest to hardest and from less to more complex reflecting on the needs of children (Graham, Holt/Hale, & Parker, 2004). Since students’ skill levels can be varied across the skills and/or within the same skill dependent upon given tasks, Graham, Holt/Hale, and Parker (2004) referred to the progression of the skills as spiral. The progression spiral consists of four levels based on skill proficiency levels of children that can be determined through observation: 1) precontrol level, 2) control level, 3) utilization level, and 4) proficiency level. The precontrol level, known as the beginner level, involves children who show a “lack of ability to either consciously control or intentionally replicate a movement” (Graham, Holt/Hale, & Parker, 2004, p. 101). Preschool and kindergarten children are generally considered to be at this level. Children at the control level demonstrate more accurate response of their upper body but they need intense concentration on the movements. The utilization level presents automatic movements within different contexts. Some students in fourth and fifth grade who are actively involved in sports programs can use the skill themes in their sports. Lastly, children at the proficiency level demonstrate automatic, effortless movement. Few elementary children can reach this proficiency level. Since age does not predict children’s motor skill abilities,
understanding skill proficiency levels are required for teachers to develop appropriate
tasks in every skill based on the skill levels of children.

**Pedagogical Content Knowledge (PCK)**

Shulman (1987) defined PCK as a “special amalgam of content and pedagogy” (p. 8), which is a domain-specific and integrated form of content knowledge that includes knowledge of how to teach and how children learn specific content in a school setting. The PCK includes not only knowledge but also the act of teaching with regard to “how particular topics, problems, or issues are organized, represented, and adapted to the diverse interests and abilities of learners, and presented for instruction” (Shulman, 1987, p. 8). For example, the ways of representing and formulating the subject that makes it comprehensible to others are considered a teacher’s PCK (Shulman, 1986).

The concept of Shulman’s PCK is advocated for prospective teachers in physical education. Siedentop and Eldar (1989) noted that “the expert teacher combines high levels of teaching skills with high levels of subject matter competence” (p. 257) and supported Shulman’s PCK domain to understand expertise. Moreover, Schempp, Manross, Tan, and Fincher (1998) described Shulman’s PCK as a “useful heuristic in understanding how teachers translate their understanding of subject matter into classroom practice” (p. 343). Considering these perspectives, it is clear that PCK is context and content-specific knowledge domain (Lynn, 2002). Concerning the significant role of teachers’ content knowledge discussed in the previous section, it is problematic to exhibit well-developed PCK within less-structured content area (Rovegno, 1998). For example, student teachers experience difficulty to explore their PCK in the lack of subject competence area, which is considered a prerequisite for effective teaching (Graber, 1995).
Research on PCK has focused on a broad range of teacher knowledge domains and teaching practices associated with the process of transformation from planning to actual teaching practices to teach specific content by observing various stages of teachers (e.g., less and more experienced preservice teachers, experienced and expert in-service teachers). Griffey and Housner (1991) and Housner and Griffey (1985) described the differences of planning and interactive decisions for instruction between preservice (inexperienced) teachers and experienced in-service elementary physical education teachers. Both studies reported that experienced teachers developed substantial managerial and instructional plans to implement specific tasks and focused on keeping the class on subject content and interested through providing large amounts of information, demonstration, learning cues, and more activity time during lessons. Along with the ability to anticipate possible situations that might occur within class settings, a variety of instructional strategies that experienced teachers possessed can allow them to handle those situations responding to student needs. Byra and Sherman (1993) also identified planning and interactive decisions to implement action within class settings of less- and more-experienced preservice teachers. The findings indicated that more-experienced preservice teachers attempted to make adjustment of their planning and interactive decision to the learner, class setting, and context-specific subject matter. Taken together, teachers’ PCK involves teaching practices incorporated with knowledge of learning environment, students, and instructional skills to conduct acquisition of motor skills of students, within which teachers can adjust their planning and teaching to given context and student needs.
Several studies also addressed the development of PCK within school settings. Mohr and Townsend (2002) generally suggested the use of comprehensive teaching models in physical education, such as sport education, tactical games approach, and ecological task analysis, as a means to develop rich and sophisticated PCK for both prospective and inservice physical educators. Moreover, the development of PCK during field-based teaching experiences of prospective teachers has been discussed. For example, the development of prospective teachers’ PCK during 20 volleyball lessons occurred within three domains: matching tasks to students’ skill levels, considering motor development of students, and recognizing significance of student emotion (McCaughtry & Rovegno, 2003). The teachers experienced a shift in their PCK for recognizing students’ learning difficulties from blaming students to questioning appropriateness of their knowledge and teaching practices within given context. In contrast, Sebren (1995) found a lack of development of PCK based on the process of reflection on the preservice teachers’ field-based teaching experience. Seven preservice teachers exhibited development of knowledge structure within sub-categories of PCK such as classroom management knowledge, subject matter knowledge, and knowledge of the learner. However, they did not reach the degree to which the teachers could transform their declarative knowledge into procedural knowledge in action as a form of PCK. Although the study did not identify specific ways to connect between knowledge bases, designing experiences that reinforce acquisition of advanced knowledge (e.g., PCK) during teacher preparation were suggested.

Overall, the characteristics of teachers with PCK represent the need for acquisition of PCK, such as responding to student learning difficulties, or using various
instructional strategies accommodated to learner skills and abilities. Griffin, Dodds, and Rovegno (1996) mentioned that highly successful teachers have well-developed PCK. Teachers who possessed strong PCK feel confident, excited, and engrossed in their teaching and describe changes in their PCK as critical to their development. Therefore, it is imperative that prospective physical educators acquire considerable domain-specific PCK of physical education that can be implemented into their teaching practices in schools.

Knowledge of Learners and Their Characteristics

The fact that the diversity of students increases and is pervasive in current American schools extends the components of diversity to include a wide range of languages, cultures, exceptionalities, learning styles, talents, and intelligence, as well as different ages, races, genders, and socioeconomic status (Darling-Hammond, Wise, & Klein, 1997; McCullick, 2001). Despite the remarkable increase in the diversity of American students, the typical teacher-candidates and teachers can still be generally characterized as Caucasian, having limited interracial and intercultural experiences, middle class, and monolinguval, with the result being that they are increasingly different in background from their students (Melnick & Zeichner, 1998). Recognizing this situation, Melnick and Zeichner (1998) recommended that all teachers have to acquire a broader base of knowledge, skills, attitudes, and dispositions with respect to their diverse students. Specifically, teachers require an equally rich and varied repertoire of teaching strategies underlying an understanding of their students (Darling-Hammond, Wise, & Klein, 1997). Stanley (1997) also suggested that learning about student’s different backgrounds and
learning how to translate this knowledge into effective instruction appear to be key components in creating a successful learning environment.

The field of physical education also recognizes the need for teacher preparation related to the diversity of students. The NASPE/NCATE standards (2001) require physical education teachers to have an understanding of individual differences and the ability to create appropriate instruction for diverse students (standard 3.). Some studies have also examined the need for teacher’s capability to deal with a diverse student population. For example, McCullick (2001) described what undergraduate students need to acquire in PETE programs from a practitioner’s perspective. In this study, 18 physical education teachers indicated that physical education teachers must have a love and concern for their students. This encompasses the fact that the teachers must be able to recognize and accept differences in children. Moreover, Stanley (1997) conducted a survey study investigating 215 pre-service teacher’s attitudes toward cultural diversity. The findings indicated that although the pre-service teachers may personally respect and value cultural diversity, they may not take actions or implement pedagogical practices that are responsive to that diversity. The study suggested multicultural education (MCE) to better prepare teacher for a diverse classroom. The MCE provides teachers with a better understanding of individual students within a diverse classroom, teaches them how to select and use more appropriate instructional strategies and materials, and aids them in making informed curricular choices and developing positive attitudes toward diversity.

In addition, in order for teachers to effectively generate appropriate instructional and pedagogical strategies and curriculum, physical education teachers require some knowledge of their students as part of the components of diversity, such as the student’s
different understanding and skill levels in the subject matter to be taught and their
developmental level at the given grade/age (Griffey & Housner, 1991; Schempp,
Manross, Tan, & Fincher, 1998). The study of Schempp, Manross, Tan, and Fincher
(1998) found that physical education teachers believed that students are all beginners in
every content area of physical education regardless of grade level. However, the authors
indicated that knowledge of students can help physical education teachers plan and teach
their students a progressive set of skills and principles while maintaining high
expectations for student learning.

Not only appreciation of diversity in individual students but also knowing how
students learn can help teachers understand learners and create an appropriate learning
environment. In general, student learning is conceptualized from several perspectives,
such as behaviorism and cognitive science. The studies of behaviorists focus on
observable behaviors and stimulus conditions that cause the behaviors. According to the
studies from behavioral perspective, learning is accomplished through a process of
building connections between stimuli and responses (Bransford, Brown, & Cocking,
1999). Cognitive science approached learning from various fields and began to study
mental functioning to understand more about learning. From this perspective, learning is
driven from understanding and transfer topics to other contexts. Moreover, new
knowledge (learning) is interpreted and constructed from what learners know and believe.

Based on understanding how students learn, Bransford, Brown, and Cocking
(1999) identified and suggested adopting different instructional approaches to create
appropriate learning environment aligned with learning goals: learner-centered,
knowledge-centered, assessment-centered, and community-centered learning
environment. A learner-centered learning environment is designed to connect the learner’s previous knowledge and/or experiences with current class tasks. A knowledge-centered perspective on learning attempts to help students use current knowledge and skills. In an assessment-centered environment, students are engaged in assessment congruent with learning goals to receive feedback on their learning. Lastly, a community-centered environment contributes to promoting a sense of community (e.g., classroom, school).

Along with general understanding of students’ learning, several studies adopted specific learning theory, multiple intelligence (MI) theory, to develop student learning and provide appropriate instructional strategies. Gardner (1983) developed the multiple intelligence (MI) theory in which he conceived seven different intelligences and ways of knowing: linguistic, logical-mathematical, musical, body-kinesthetic, spatial, interpersonal, and intrapersonal intelligences. According to Gardner, each person possesses all areas of intelligence but might have different developmental rates across the areas, which affect his or her ways of knowing. For example, one who demonstrates strength in body-kinesthetic intelligence has a good sense of balance and eye-coordination and attempts use body movement to solve problem. Linguistic intelligence involves highly developed spoken and written language. Learners with high linguistic intelligence learn and think through words. Based on the learning styles of students, teachers can adopt diverse materials and instructional strategies.

In the physical education area, some studies provided examples of several instructional strategies that address and facilitate development of each intelligence. For example, Anderson and Weber (1997) provided examples of teaching a healthy-life
activity (e.g., golf) from a multiple intelligence approach. They conceptualized curriculum topics to connect learning activities associated with seven intelligences. Moreover, different types of assignments and activities that facilitate all areas of intelligence within a golf unit were described, such as creating a golf dictionary of terms (linguistic intelligence), videotaping swing action to understand bodily movement (bodily-kinesthetic). Townsend and Gurvitch (2002) advocated integrating technology into PE to address individual student differences in developed intelligences and learning styles. The authors argue that the use of technology in PE classes contributes to enhancement of the learning environment and allows “students opportunities to experience and learning about physical movement using a variety of differing approaches” (p. 36). Overall, it is clear that prospective physical educators require knowledge of student diversity to promote student learning and to employ appropriate teaching skills.

Knowledge of Educational Contexts

According to the teacher socialization literature, workplace conditions in schools have a major impact on the induction period of beginning physical education teachers (Stroot & Ko, 2006). Specifically, beginning physical education teachers can face distinct contextual factors that influence their teaching practices and career. The contextual factors include an overwhelming workload, the marginalization of physical education, and isolation (Curtner-Smith, 2001; O’Sullivan, 1989; Smyth, 1995; Solmon, Worthy, & Carter, 1993; Sparkes, Templin, & Schempp, 1993; Stroot, Collier, O’Sullivan, & England, 1994; Williams & Williamson, 1995; Wright, 2001). For example, secondary physical educators indicated that although routines of day-to-day
teaching schedules are not boring, demands of dual roles of teachers/coaches, marginalization, and little professional interactions with colleagues are their workplace conditions that they are situated in (Stroot, Collier, O’Sullivan, & England, 1994). Moreover, obvious contextual factors related to classroom elements that have direct impact on teachers’ instructional practices are recognized, such as the size of the class group, the size of the room, and equipment (Goodlad, Soder, & Sirotnik, 1990).

In order to make the successful transition into the schools and continue their teaching profession, a knowledge base of the educational workplace context, which is school for teachers, seems crucial to ensure the readiness of prospective physical education teachers. Fernandez-Balboa (1997) suggested that for the successful transformation of beginning teachers, they need to open their eyes to the school’s realities; otherwise they can become “burned-out and soul-broken” (p.125). Smyth (1995) also investigated how physical education teachers who have completed first year teaching perceive their workplace. The study found that the teachers still had no realistic appreciation of school culture and could not deal with the school as a social institution. With these problems, the given school context became a set of constraints on the teacher’s visions of good physical education. In the case of experienced physical education teachers, they integrated their knowledge of schools into their teaching practices (Griffey & Housner, 1991). The teachers combine their knowledge of the school, students, and teaching, which enables them to increase the predictability of classroom instruction. With the findings of several studies, it is clear that knowledge of the school can prepare the prospective physical education teachers to continue their teaching careers and improve their teaching.
Knowledge of Educational Ends, Purposes, and Values

Currently published national standards for physical education (NASPE, 1995, 2004) guide teachers to determine purposes and goals of their physical education programs by indicating what and how teachers teach to achieve expected student learning. In order to develop and maintain the teachers’ knowledge of educational ends, purposes, and values, the concept of reflection has been accepted as a generic pedagogical principle in the teacher education programs (Feiman-Nemser, 1990). Moreover, a teacher’s capability of reflecting on their teaching is advocated as necessary for the on-going development of their teaching profession (Tinning, 1992; Tsangaridou & O’Sullivan, 1997). The NASPE/NCATE standards identify the significance of reflection by stating that: “physical education teachers are reflective practitioners who evaluate the effects of their action” (standard 8.). Reflection, is defined as “the act of thinking about, analyzing, assessing, or altering educational meanings, intentions, beliefs, decisions, actions, or products by focusing on the process of achieving them” (Tsangaridou & O’Sullivan, 1997, p 4). In addition, the aim of reflection is for teachers to structure, adjust, generate, refine, or alter the knowledge and actions that improve their teaching practice (Tsangaridou & O’Sullivan, 1997).

The role of the teacher’s reflection is discussed in the study of Tsangaridou and O’Sullivan (1997). This study described the physical education teacher’s micro-reflection within the learning and teaching environment and macro-reflection across their teaching career. Engaging in the micro-reflection process, the experienced teachers in this study reflected on the pedagogical, content, ethical, moral, and social issues, through which they could provide meaningful learning experiences to their students. The teachers
also considered how best to structure their practices for student learning through micro-
reflection. In addition, macro-reflection that informs teachers’ practices over time
influenced changes in the teachers’ classroom practice and professional development.
The study concluded that teaching experience accompanied with reflection changed the
teachers’ professional practice over their teaching careers (Tsangaridou & O’Sullivan,
1997). Therefore, the ability of teachers to reflect can contribute to the improvement of
the teachers’ daily practices as well as their professional development across their
teaching profession.

**Design of PETE Programs**

Responding to the concerns on improvement of teacher quality and student
learning, current educational reform efforts reinforce ensuring standards-based
performance of teachers based on the fact that the teacher’s role is to improve student
learning (NCTAF, 1997). Teacher preparation programs that concentrate on developing
of high quality teachers attempt to reshape their goals and objectives, structure, and
content following current movement toward standards-based programming delineated by
NCATE (Metzler & Tjeerdsma, 2000a). Along with the effort to define a knowledge
base for teachers, several teacher educators reported how they redesign their teacher
preparation programs to effectively develop the knowledge base for teachers. Although
practice-teaching is typically imposed as one major component of the teacher preparation
program (Taggart, 1988), diverse approaches to bridge between theoretical knowledge
and teaching in action are discussed.

Taggart (1988) presented an example of a systematic skill-focused teacher
education program designed at the Ohio State University. This systematically structured
program has been developed and implemented to acquire effective teaching skills of prospective teachers by exposing research-based knowledge on teaching skills and incorporating them into various types of field-experiences from supportive and controlled environment (e.g., class size, content) to the authentic school settings. The program added eight field-based teaching experiences to practice and develop particular teaching skills (e.g., positive interactions, performing a demonstration) along with teaching practices for specific motor skill activities within a variety of settings with a variety of students prior to student teaching. In order to verify the effective functioning of the field experiences, skilled supervisors engaged in monitoring most of these experiences and providing the prospective teachers with specific feedback based on the data collected by using several instruments (e.g., ALT-PE) to maintain and improve teaching competences and skills throughout the field experiences.

Metzler and Tjeerdsma (2000) published a monograph in the *Journal of Teaching in Physical Education* dealing with their PETE assessment project (PETEAP) at Georgia State University to elaborate on the process of designing, conducting assessment, and restructuring their PETE program. The development, research, and improvement (DRI) model has been developed and implemented as a framework for the project (Metzler & Tjeerdsma, 2000b). The DRI model which includes a three-stage cycle such as development, research, and (decision-making) improvement stage to make decision to maintain, revise or redesign the program guides to design, assess, and improve programs’ ability to meet performance standards of preservice teachers. The PETE program has adopted NASPE (1995) *National Standards for Beginning Physical Education Teachers* to define knowledge base (e.g., content knowledge, performance knowledge, and
dispositions) and programmatic goals for the program. The content of the PETE program consists of a four-course sequence including an introductory methods course and curriculum and instruction block courses (field-based practice), and student teaching experience to acquire content knowledge, performance knowledge and dispositions associated with nine NASPE standards. The assessment data gathered from students, PETE program faculty, and cooperative teachers guide the PETE program to make minor adjustment to enhance field-based experiences, such as sequencing of placements (starting in elementary and having secondary later), and a short interim between the methods course and the first curriculum and instruction block course. Overall, the PETEAP framed by the DRI model was successfully implemented to assess the major goals and outcomes of the program as well as to design the PETE program (Tjeerdsma & Metzler, 2000b).

Although diverse perspectives have been represented to define a knowledge base for teachers, the content of teacher education programs is generally identified as a combination of several knowledge domains: subject matter knowledge, pedagogical knowledge, knowledge of learners and contexts, and the learning of professional values and conduct (Metzler & Tjeerdsma, 2000). The design issue for PETE programs is mainly focused on decision making for time allocation of the content aligned with PETE faculties’ “expressed priorities, state and institutional regulations, departmental requirements, available resources, and the length of the program itself” (Metzler & Tjeerdsma, 2000a, p. 395). Based on the examples of PETE program design reported and other research, it is clear that one of main concerns to design an effective PETE program is to increase the quantity and quality of field-based experiences. For example,
considering teaching practice as the major component of the teacher preparation programs, extensive field-based teaching experiences are advocated to improve teaching skills prior to student teaching (Graber, 1995; Metzler & Tjeerdsma, 2000; O’Sullivan, 1990; Taggart, 1988). According to the examples of the two PETE program designs, both programs attempted to incorporate an extensive field-based practicum before student teachers enter long-term student teaching experiences: eight field-based practica at the OSU program and three practica at GSU. Moreover, the collected assessment data in PAESAP showed that extensive field-based courses in the PETE program promote the following aspects of student teaching: teaching efficacy through overcoming contextual factors and facilitating children’s learning, attitudes toward diversity, and discipline and student control skills (Tjeerdsma & Metzler, 2000).

Several strategies are suggested and implemented to improve quality of field-based teaching experiences: systematic field experiences, collaboration between personnel engaged in the program, and field experiences. Systematic field experiences during the teaching practicum and student teaching require a supervision system utilizing data-based evidence and skilled supervisors (and cooperative teachers) on sites. The use of data collection instruments (e.g., ALT-PE) during field experiences allows providing data-based feedback not only to improve student teachers’ teaching behaviors but also to assess the program (Metzler & Tjeerdsma, 2000b; Taggart, 1988). In order to gather reliable and valid data, it is critical to secure trained or skilled supervisors (e.g., faculty, staff) who acquire pedagogy developed from related research and are trained to systematically observe teaching skills to record observation instruments and prescribe and develop the skills in subsequent experiences (Taggart, 1988). Moreover,
collaboration between personnel (e.g., faculty, staff, cooperating teachers) who are engaged in the programs is required to improve the quality of field experiences as well as the PETE programs. Although little impact of teacher education programs on prospective physical educators is often reported in socialization studies, PETE programs developed and implemented through the process of consensus and agreement between teacher educators within the program promote strong socialization of student teachers (Graber, 1993). For example, Graber (1993) valued the consensus of faculty within the PETE programs to successfully develop students’ confidence aligned with the professional orientation of the program. In addition, sharing the program’s orientation (e.g., views of effective teaching, philosophy underpinning of the program) and collaborating between not only faculty but also other participants in the program (e.g., supervisors, cooperative teachers) promote student teachers’ acquisition of knowledge and teaching skills to reach demands of teaching within the program (Graber, 1995; Taggart, 1988).

Taken together, the design issue for the PETE programs has been neglected in our field. Moreover, little research has attempted to represent and advocate field-based design to prepare prospective physical educators for initial teaching certification. Some studies acknowledge the significance of field-based teaching experiences for developing a knowledge base along with teaching skills so that they support adding more field-based experiences prior to student teaching. Furthermore, systematically structured field experiences that require ensuring systematic supervision during the field experiences and collaborating between participants in the programs are suggested to improve effectiveness of the field-based program design. However, it is suggested that more
research is needed to investigate the effectiveness of the particular and/or general PETE program designs (Housner & French, 1994).

Research on Field experience

The student teaching internship as a school-based field experience has been considered the most important and valuable period in teacher preparation program (Askins & Imwold, 1994; Coleman & Mitchell, 2000; Conant, 1963; Ocansey, 1988; Paese, 1984; Tannehill, 1989; Tannehill & Zakrajsek, 1988; Zeichner, 1980). Conant (1963) has referred to student teaching as “one indisputably essential element in professional education” (p. 142). In addition, the Carnegie Task Force (1986) and the Holmes Group (1986) supported the importance of the student teaching experience as an effective step in the professional preparation of teachers that provides student teachers with teaching and learning the professional role of a teacher in preparation program.

The research on field experience focuses on the analysis of the student teaching phase in teacher education programs, attitude/belief changes, and the interpersonal role relationships between student teachers (STs), cooperative teachers (CTs), and university supervisors (USs). Several studies have also attempted to understand better the internship experience. This section will review the issues that this line of research has inquired such as the perception and belief change of STs and CTs, developmental concerns of STs, ST’s skills of observation, reflectivity, and teaching, supervisory practice of CTs, and schedule of post-lesson conference.

Perception and Belief Change

Several studies have addressed the effect of the student teaching phase on the perceptions and beliefs of STs and CTs regarding student teaching experience and the
value of physical education. Hardy (1999) asked 62 STs about their perception of the school-based experiences in their teacher education programs. The STs emphasized the value of the accumulation of teaching experience in real settings and the quality of the collaborative manner between the PETE program and school elements as well as between the variability in their supervision process, school contexts, and the personal histories of both mentors and pre-service teachers. The study concluded that PETE programs must be considered as departure points for the preconceptions of the pre-service teachers about teaching and that the extended length of a pre-service teacher’s participation in a PETE program can consolidate their beliefs on teaching.

The study of Schempp (1985) supported the finding of no change in STs’ beliefs resulting from student teaching experience. In this study, 20 STs defined becoming a better teacher in the context of their teaching experience as “the ability to develop and implement tactics and techniques in order to dominate and control the collective social behavior of their students.” (p. 165). The study found that this belief of the STs has not changed throughout the student teaching period. In addition, three STs in the study of Doolittle, Dodds, and Placek (1993) held their belief about the purpose of physical education and effective teaching from entry to exit in one teacher education program including the student teaching experience. This study concluded that the lack of program impact on the ST’s belief might be explained by the structure of the program that was designed not to help recruits confront their underlying belief systems but to focus on technical skill orientation.

The perception and belief changes of CTs have also been examined during the student teaching experience. According to the study of Tjeerdsma (1998), seven CTs
reported little change of belief about teaching in PE or perceptions of student teaching as a result of the practicum. Possible reasons for the lack of change were described from social constructivism and constructivism perspectives as valuing social interactions as a means of helping the ST learn, considering ST’s not as peers, and engaging in the short length of the practicum. However, Tannehill (1989) found opposite results from the veteran CTs. Three CTs addressed their growth and change throughout their professional lives by engaging in the student teaching practicum. They pointed out that the interaction between two individuals – CTs and STs- influenced the outcome of the experience and that a major benefit of supervising a ST was sharing knowledge with STs and the US.

Although the significance of a collaborative relationship between CTs and STs has been identified in the study of Tannehill (1989), Askins et al. (1994) found the existence of conflicting perceptions between CTs and STs in terms of following the themes of: a) the use of routines, b) the teaching of lessons, c) the involvement of student teaching during the field experience, d) the CT as a model during teaching, and e) the goals and objectives of CT and ST. The study concluded that different educational ideologies of each of them were formed by apprenticeship of observation rather than by the impact of the teacher preparation program. Given that fact, it can be inferred that the PETE curriculum should be designed to help student teachers retain and implement the knowledge gained during the preparation program (Askins et al., 1994).

Structure of Concerns

The level of concerns of student teachers has been assessed not only in general education but also in physical education area within Fuller’s Developmental Theory of Student Teacher Concerns (1969) framework during student teaching period (Behets,
The concern theory starts with the assumption that the concern of teachers as a presage variable influences teacher behavior in the classroom and that the teachers pass through several concern stages as they gain experience and maturity (Fuller, 1969). Fuller (1969) has classified and structured concerns of teachers into three teaching dimensions: self, task, and impact. In addition, four stages are identified: no concern (prior teaching), concerns on self and survival (second stage: self), decrease of self-concerns and increase of teaching-situation concerns (third stage: task), and decrease of task concerns and dominant concerns on impact on pupils (fourth stage: impact).

Within Fuller’s concern theory framework, research on teacher concern has been conducted to understand the states and changes in the pattern of concerns of teachers during the student teaching experience.

Several studies in physical education have tested the stage of developmental teacher concerns by using either the Teacher Concerns Questionnaire (TCQ) developed by Fuller (1969) or the Teacher Concerns Questionnaire-Physical Education (TCQ-PE) developed by McBride (1993) as an adaptation to the TCQ for the physical education setting (Behets, 1990; Boggess et al., 1985; Hynes-Dusel, 1999; McBride, 1984; Rikard et al., 1997). The findings of those studies, however, are not aligned with the structure of Fuller’s theory: self-task-impact. For example, Boggess et al. (1985) assessed the concerns of STs on three occasions during the student teaching experience: 1) prior to actual teaching experience, 2) at mid-semester, 3) the day after the student teachers had completed their student teaching assignment. The study found that the scale of the self
and the task concerns were maintained without significant difference over the period. However, there was an increase in the impact concern.

These findings are also supported by several studies. According to the study of Hynes-Dusel (1999) that assesses concerns of 25 student teachers by using the TCQ-PE instrument, different patterns of concerns on three occasions were reported: self>impact>task (pre-teaching experience), impact>self>task (midpoint), and self>impact>task (end of teaching). Overall, the student teachers had a high level of concern for self at the start and then again at the completion of student teaching and a high level of concern for impact which reflects a concern for meeting the needs of all students. Rikard and Knight (1997) also found that self, impact, and task concerns of student teachers declined over the 10 week field experience. Specifically, the task concerns scale was significantly lower between pre to post test.

In addition, the study of Behets (1990) reported contradicting results between concerns of student teachers assessed by the TCQ instrument and the logbook method. According to the result of the TCQ, the pattern of the ST concerns was similar to the findings of previous studies as low consistency in self and task concerns and significant increase in impact concerns. However, the logbook method showed a slight opposite trend of student teacher concerns in which self and task concerns were most often noted whereas impact concerns were least often noted. The findings suggested that answering a questionnaire may reflect idealistic concerns of student teachers whereas daily reporting in a logbook would reflect their realistic concerns. Therefore, this study concluded that other methods suitable for evaluating STs’ concerns are needed.
Based on the findings of the studies, it is clear that the structure of developmental concern proposed by Fuller does not exist among physical education STs. Instead, several issues can be discussed related to the structure of concerns of STs identified. First, weak assistance for student teachers resulted in limited growth of the STs. For example, the finding that the student teachers maintained concerns for self over the teaching experience explains that CTs and/or USs have not helped them to overcome self concern (Boggess et al., 1985; Hynes-Dusel, 1999; Rikard et al., 1997). Moreover, the ideological level of the supervisor’s concerns is considered problematic to prepare the STs for the realities of teaching (McBride, 1984). Second, goals of PETE programs can influence the existence of different types of ST concerns. STs in the study of Boggess et al. (1985), for example, reported consistent concerns on planning for instruction accompanied with concerns about evaluation under the extrinsic pressure on lesson and unit planning in teacher preparation programs throughout the field experience. Moreover, the emphasis of teacher education programs on considering student needs can result in high levels of concern on impact from student teachers (Hynes-Dusel, 1999). Therefore, those studies suggested that teacher educators and those involved in the field experience of STs should address the ST’s needs and concerns to build a supportive environment and to improve their teaching performance (Boggess et al., 1985; Hynes-Dusel, 1999; Rikard et al., 1997).

Skills of Observation, Reflectivity, and Teaching: Student Teachers (STs).

The ability to observe, analyze, and respond to the movement of students and the environment of the classroom is considered essential for effective planning, instruction, and interaction with students in class (Barrett, 1983; Belka, 1988; McCallister & Napper-
In order to understand the development of observation skills of STs throughout the period of teacher preparation program, some studies have been conducted to identify what STs observe and how they interpret a teaching episode through watching videotaped lessons. According to the study of Belka (1988), fourth year physical education STs completed a 16 week student teaching experience, watched a videotaped soccer lesson, and responded to some questions regarding their observation and interpretation. They interpreted the observed lesson more congruently with program goals and tended to reflect the targeted teaching skills and their concerns in the current field experience. For example, they were more focused on teaching related behaviors such as management skills, time arrangement, and equipment rather than content and student behaviors as their program emphasized more of the technical aspects of teaching than learner’s movement responses. However, lack of emphasis on the observation skills in the teacher preparation program resulted in developing less skilled observers (fourth year students) of physical education lessons as compared to other students. Hence, this study concluded that observation skills should be learned in the teacher education program.

McCallister and Napper-Owen (1999) also examined observation and analysis skills of eight STs who were involved in 16-week student teaching experience. All STs watched and made reflecting commentaries on their videotaped lessons. The comments of STs fell into three categories, which needed to be addressed so that appropriate actions could be taken in the development of effective teachers: 1) student responses to instruction, 2) teacher behaviors, and 3) lesson objectives and organization. The level of observation skill of STs was influenced by the type of observation exercise that they had
received in their PETE program. Along with the observation skills, this study highlighted the significance of becoming a reflective practitioner in order to recognize and make comments on how they could improve a particular teaching behavior.

Despite the recognition of the need for reflection on one’s ability, the study of Placek and Smyth (1995) found that the STs’ level of reflection was considered low and increased very little over the one-semester course of their field experience. The authors concluded that teaching STs to become reflective is difficult to accomplish within limited time. Overall, the studies that examined observation and reflectivity skills of STs suggested that teacher education programs should provide STs with guided observation and reflective learning experiences to help them observe the class accurately and precisely before making instructional decisions (Belka 1988; McCallister & Napper-Owen, 1999; Placek & Smyth, 1995). Moreover, additional course work and field experiences were recommended to help STs develop observation and analysis skills that enhance their ability to provide effective instruction (McCallister & Napper-Owen, 1999).

Related to teaching practices of STs, Hook and Tannehill (1995) examined the nature of STs’ teaching from an ecological perspective as the systematic form of task systems. The study found that there were many similarities between the operating task systems between the ST and the in-service teachers in Jones’s (1989) study such as: 1) dominance of organizational tasks within managerial task systems, reviewing and refining tasks within the instructional task system, fully explicit tasks, and waiting and activity time, and 2) use of formal grade exchange accountability system and performance feedback. Even in some areas, the ST implemented better teaching skills such as highly progressive task presentation. These compatible levels of the ST’s
teaching have been explained by the emphasis on the concepts in preparation programs and support of the CT. The role of the CT in providing consistent suggestions in developing units of instruction was identified as especially critical for the ST to develop and implement those teaching skills (Hook & Tannehill, 1995).

Regardless of the ability of CTs, however, some studies attempted to improve teaching effectiveness of STs by using a particular training program for the STs including a systematic intervention such as Academic Learning Time-Physical Education (ALT-PE) (Randall & Imwold, 1989) and self-management skills (Eldar, 1990). According to the study of Randall and Imwold (1989), STs who received the ALT-PE training program produced more ALT and greater provision on ALT-PE than untrained STs. The findings supported the efficacy of the training program as well as the contribution of the CTs with providing ALT-PE related feedback. Eldar (1990) also examined the effect of trained student teachers in self-management program (SMP) which included the process of a self-instructional module on goal setting, environmental planning, self-recording, and self-reinforcement/ punishment on teaching performance through collecting ALT-PE to measure pupil behaviors in the classes of the STs. Results indicated that the training program was effective in improving STs’ teaching and the pupil’s performance. Based on the findings, this study concluded that teachers can play an important role in changing their own teaching behaviors regardless of each of the parties involved in the supervision process by acquiring internal accountability mechanisms such as self-management skills (Eldar, 1990). Both studies suggested that particular training programs for the STs could contribute to preparing independent teachers along with the improvement of their own teaching practices (Eldar, 1990; Randall & Imwold, 1989).
Supervisory Strategies

The effort to improve STs’ teaching practices has been conducted within several areas to secure the success of the field experience including the supervisory skills of CTs, training program for CTs, and strategies of systematic supervision. First, the degree to which the student teachers learn through their field experience is dependent on the persons with whom the ST is placed such as CTs (Tannehill & Zakrajsek, 1988). Although the role of the USs has been described as unnecessary (Coleman & Mitchell, 2000), the role of CTs is viewed as influential and essential to the student teaching experience (Coleman & Mitchell, 2000; Hook & Tannehill, 1995; Kahan, 1999; Rikard & Veal, 1996; Tannehill & Zakrajsek, 1988). However, some teacher educators have criticized, and are concerned about the quality of CTs who provide feedback and guidance to STs (Rikard & Veal, 1996). Several studies conducted to describe supervisory behaviors of CT have provided evidence of the need for concern. For example, in describing what happens in the supervisory process between the STs and the CTs Tannehill and Zakrajsek (1988) reported that the CTs did not accomplish the role expected for supervising STs. Instead, they generally provided minimal feedback associated with a decreased amount of time spent in classroom observation and the comments of insufficient specificity allied with a lack of analytical skills. The findings indicated that inadequate preparation and limited skills of CTs in knowing how to supervise can act as a barrier to effective supervision.

Kahan (1999) and Rikard and Veal (1996) also interviewed several CTs to find out how they engaged in the supervisory process. Kahan (1999) used the thinking-out-loud technique to collect data from two CTs about their supervisory comments on their
ST’s lessons. According to the findings, although these CTs displayed desirable feedback behaviors, several variables affecting their feedback and the relationship between ST and CT were uncovered: age, gender, race, personality, personal preferences for teaching and managerial styles, confidence in one’s own teaching and supervision. The findings supported the fact that the CTs may conduct inconsistent supervisory behaviors depending on which variables exist. Rikard and Veal (1996) also interviewed 23 CTs who were serving in that role with no formal preparation. The CTs gained supervisory knowledge from their student teaching and teaching experience, so that they reported their overall role ambiguity. Three types of supervisory styles were identified 1) do it my way, 2) do it your way, and 3) we’ll do it together. In addition, the study found that the CTs provided very little feedback while mostly using positive terms. Based on the findings, the authors supported the need for developing technical skills and changing supervisory behaviors of cooperating teachers in physical education through a variety of successful training approaches (Rikard & Veal, 1996; Tannehill & Zakrajsek, 1988).

Given these facts, several studies have attempted to find ways of selecting CTs and providing training programs for the CTs to implement effective supervisory skills. For example, as the method for selecting CTs, Coleman and Mitchell (2000) assessed the focus of observation and conference topics of the cooperative teachers through the process of watching videotaped lessons of student teachers, writing critiques, and the post observation interview. They compared two groups of CTs with different preparation background: clinical model teachers (CMTs) completed a training program dealing with supervisory processes, techniques of systematic observation, and effective teaching courses, while the other CTs (OCTs) had no completion of graduate course work. The
study found that CMTs provided more clear targets for corrections, explicit rationales for these comments, and more prescriptive comments for future remediation compared to OCTs. Moreover, they addressed a variety of systematic observation tools that could be used for CTs. Based on the findings from this study, the authors concluded that the methods adopted in this study have the potential for application to selecting cooperative teachers. In addition, the benefits of having trained CTs were identified based on the result of a lasting impact of the training program on CMT group performance.

Along with the emphasis on the needs for training program for CTs (Coleman & Mitchell, 2000; Kahan, 1999; Ocansey, 1988; Rikard & Veal, 1996; Tannehill & Zakrajsek, 1988, 1990), some experimental studies have examined the effect of training programs focusing on specific supervisory skills and the ability of CTs to conduct systematic supervision (Ocansey, 1988; Tannehill & Zakrajsek, 1990). Ocansey (1988) trained CTs in a behavioral model of supervision-physical education (BMS-PE), which focused on communicating feedback in detail and holding STs accountable for their performances during post-teaching. As a result of training, the CTs performed effective supervisory functions such as: 1) an increase in time spent in microincident and planning incident categories, 2) a decrease in time spent in unrelated incident and macroincident categories, 3) an increase in the communication of fully explicit tasks, and 4) a decrease in the communication of implicit tasks.

Tannehill and Zakrajsek (1990) and Coulon and Byra (1997) also supported the positive effect of the training program on the CTs’ supervisory behaviors such as the amount and types of feedback. Tannehill and Zakrajsek (1990) compared two groups of CTs, untrained CTs and trained CTs, who completed a self-directed supervisory training
program consisting of seven modules: 1) developing a helping relationship, 2) providing guidance through effective communication, 3) the supervisory conference, 4) classroom management and control, 5) planning for instruction and evaluation, 6) teacher behaviors, and 7) developing your personal style of supervision. The study found that trained CTs provided more frequent and substantive feedback and used less controlling and more indirect conferencing behaviors. Coulon and Byra (1997) also examined the post teaching conference of trained CTs who had received training in supervisory effectiveness. The study found that the trained CTs conducted a positive conference and provided a consistent amount of objective feedback focusing on specific aspects of the lesson across the conference. Overall, those studies concluded that CTs can be trained to improve their supervisory skills, behaviors, and practices consistent with the goals of teacher education programs (Coulon & Byra, 1997; Ocansey, 1988; Tannehill & Zakrajsek, 1990).

In order to conduct systematic supervision, various strategies have also been introduced and examined as a way of providing effective feedback to STs’ teaching such as the effective supervision guide (Ocansey, 1989), use of observational instruments (Mencini, Wuest, & van der Mars, 1985), and different types and schedules of post-lesson conferences (Byra, 1996; McCullick & Coulon, 1989; Smith & Steffen, 1994). As a form of systematic approach, Ocansey (1989) introduced an effective supervision guide (ESG) that helps USs and STs to identify and be held accountable for changes in teaching performance. The procedure of the ESG consists of five steps: 1) establish a baseline of teaching performance, 2) select behaviors that need remediation or maintenance, 3) specify strategies for remediation and maintenance of targeted behaviors, 4) establish
criteria for targeted behaviors, and 5) indicate the beginning and ending dates for targeted behaviors. Along with the clear direction for organizing the data from observation, the ESG was recommended for defining precise expectations and holding conference session with objective and reliable evidence for the student teachers using observation systems such as ALT-PE.

The use of observation systems has suggested ways to help CTs provide systematic supervisory feedback (Coulon & Byra, 1997; Mancini et al., 1985; Ocansey, 1989; Randall & Imwold, 1989). According to a review study on the use of systematic observational instruments such as Cheffers Adaptation of the Flanders Interaction Analysis System (CAFIAS) and ALT-PE, the inclusion of systematic observations in order to provide systematic supervisory feedback on teacher behaviors and interaction patterns of STs during the field experience was supported (Mancini et al., 1985).

Specific strategies for post-lesson conferences have been examined in terms of different types of approaches and schedules. Byra (1996) described the effect of two post-lesson conferencing approaches on reflective practices of STs: directive approach (teacher tells-students listen) and collaborative approach (students tell-teacher listens/question). Results indicated that both strategies could facilitate the development of a ST’s reflective thoughts on teaching. Instead, an individual’s knowledge about teaching and schooling of STs affected the level of reflections. This study concluded that two strategies could be used to encourage STs to reflect on their teaching (Byra, 1996).

As the different types of strategies are examined, various schedules of post-lesson conferences have been compared to identify an effective supervisory practice (McCullick & Coulon, 1998; Smith & Steffen, 1994). McCullick and Coulon (1998) compared
everyday lesson supervision, once-a-week supervision, and no-supervision groups relative to the student teacher’s goal setting and achievement. Smith and Steffen (1994) also examined differences in the amount of time spent on management between four conditions for receiving data-based knowledge of results (KR): 1) KR everyday, 2) KR every other day, 3) KR every four days, and 4) no KR control. These studies found that a schedule of an everyday conference was an effective method to focus on a variety of teaching behaviors and writing specific objectives (McCullick & Coulon, 1998) as well as to decrease management time (Smith & Steffen, 1994). However, the studies also concluded that the effectiveness of a supervision schedule might be dependent upon the focus of supervision/feedback and what outcomes an undergraduate teaching program expects (McCullick & Coulon, 1998; Smith & Steffen, 1994).

Summary

In summary, aligned with the current educational issues such as attempting to assure high quality teachers and standardize teaching in schools, the trend of the knowledge base for teachers has shifted to an emphasis on the critical role of practical knowledge along with a conceptual knowledge base. Responding to this trend, physical educators have discussed the knowledge base in terms of a high quality teacher preparation program while also considering the current educational context and standards for physical education teachers, such as knowledge of student and technology, content knowledge, pedagogical content knowledge, pedagogical knowledge, knowledge of the curriculum, knowledge of the workplace, and reflection. Moreover, the significant role of field experience has been recognized with an effort to upgrade the field experience of STs by investigating various issues from different perspectives, such as the perception...
and belief change of STs and CTs, developmental concerns of STs, ST’s skills of observation, reflectivity, and teaching, supervisory practice of CTs, and schedule of a post-lesson conference.

According to the findings of those studies, some conclusions can be inferred across these issues. First, based on the findings of the limited impact of a teacher preparation program on the ST’s perception, belief, concerns, and teaching, it is clear that teacher preparation programs should be carefully designed to help STs retain and implement the knowledge base gained during the program with additional course work and field experience focusing on particular concepts and issues (Boggess et al., 1985; Doolittle et al., 1993; Hynes-Dusel, 1999; McCallister et al., 1999; Rikard & Knight, 1997; Schempp, 1985). Moreover, inadequate preparation and limited skills are considered barriers to effective teaching and supervisory practice for those involved in the field experience (Rikard & Veal, 1996; Tannehill & Zakrajsek, 1988). Given these concerns, it is concluded that particular training programs can contribute to improvement and change on the behaviors of STs and CTs consistent with the goals of their teacher preparation program (Coulon & Byra, 1997; Eldar, 1990; Ocansey, 1988; Randall & Imwold, 1989; Tannehill & Zakrajsek, 1990). Therefore, teacher educators should recognize the fact that the degree and quality of learning in teacher preparation and field experience are dependent upon what teacher education programs expect and provide.

Review on Induction in Physical Education

According to the United States Department of Education projects, due to disparity between increasing number of enrollment and retirement, the nation will need to hire more than two million new teachers by 2010 (American Federation of Teachers, 2001;
Since the early 1990s, however, steep attrition rate of first few years of teachers has been considered problematic, causing an uneven trend of more exits from the teaching profession than the annual number of entrants into the field (Darling-Hammond, 2003; Ingersoll, 2001). Responding to this trend, not only teacher educators but also administrators from several organizations such as the American Federation of Teachers (AFT) and National Commission on Teaching and America’s Future (NCTAF), have devoted themselves to the effort to ensure high quality teachers specially placed in the early stage of their teaching profession – the induction period-. Therefore, this section will elaborate the issues that have been found and reported regarding: 1) what induction is, 2) what findings have been reported in the research on induction in physical education, 3) what constitutes high quality of induction program, and 4) example of induction program.

**What is Induction**

The induction period, the transition of beginning teachers into their first jobs (Ingersoll & Kralik, 2004), is described as “…a transitional period in teacher education between teacher preparation and continuing professional development…” (Huling-Austing, Odell, Ishler, Kay, & Edelfelt, 1989, p. 3). Paese (1990) specifically indicated the period of induction as the first three years of teaching. In addition, Feiman-Nemser and colleagues identified three different meanings of induction: 1) a phase in learning to teach, 2) a process of teacher socialization, and 3) a program for beginning teachers (Feiman-Nemser, Schwille, Carver, & Yusko, 1999, p. 8). First, as a unique phase in teacher development, “the induction phase, which coincides with the first year(s) of
teaching, is a time of intense learning and anxiety, different from what has gone before
and what comes after” (p. 7). Second, as a transition period from preparation to practice,
induction is accounted for as part of the informal socialization processes by which
“newcomers enter the field and join the ranks of teachers” (p. 7). New teachers develop
their identity and teaching practices within given their occupational settings and
professional communities. Last, from an educational policy and practice perspective,
induction generally refers to “a formal program for beginning teachers” (p. 8). However,
understanding what indicates an induction program is still varied as the term implies
various meanings.

The induction period, or the first few years of teaching, is “an intense and
formative time in learning to teach” (Feiman-Nemser, 2001, p. 1026); it is identified as a
critical period in a teacher’s career. What beginning teachers experience on the job
influences not only retention of their teaching profession but also teaching practices that
teachers implement into their classes (Feiman-Nemser, 2001; Feiman-Nemser et al.,
1999). In addition, the professional norms, attitudes, and standards that will guide
practice over the teacher’s career are constructed based on the initial years of teaching
experiences (Moir & Gless, 2001). Therefore, the American Federation of Teachers
policy (AFT, 2001) recognizes “induction for new teachers as one of the essential
building blocks of teacher quality” (p. 1).

Findings from Research on Induction

Research on induction conducted over the past two decades has been framed
within a part of the socialization process, which occurs over the entire scope of a
teacher’s career. As the definition of induction was described in the previous section,
during the induction phase of teacher socialization teachers engage in testing what they have learned from their preparation programs within given the real class settings as their occupations (Stroot & Ko, 2006). Research on induction has attempted to find the influence of preparation programs on beginning teachers and the concerns that beginning teachers faced within their classroom as well as their workplace (schools). With respect to induction experiences of beginning physical educators, several studies revealed that physical educators are not involved in the same induction processes as those for teachers of other disciplines because of the complexity of socialization in physical education (Mcdonald, 1995; Sarason, 1972; Smyth, 1995; Stroot, 1993; Templin & Schempp, 1989; Williams & Williamson, 1998). Macdonald (1995) addressed that given the situation “...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” (p.129).

Studies on teacher induction in physical education provide an emerging consensus for the concerns that beginning physical educators consistently address. Overall, new teachers regardless of subject areas report pervasive concerns on general classroom issues associated with management, instruction, and assessment as well as specific issues such as reality shock, wash-out effect, workload, marginalization, and isolation (Stroot & Ko, in press). Beginning physical educators also addressed these concerns in numerous studies. However, the physical education literature reveals a remarkably different type of marginalization and various degrees of isolation as typical issues among physical educators than those that have emerged from the general education literature (Stroot & Ko, in press). This section will elaborate the findings of the literature associated with the
typical concerns beginning physical educators identified: reality shock, wash-out effect, workload, marginalization, and isolation.

Reality shock

Reality shock is defined as “the collapse of the missionary ideals formed during teacher training by the harsh and rude reality of classroom life” (Veenman, 1984, p. 143). Beginning physical educators in several case studies reported their experiences of severe reality shock as a result of lack of preparation and unexpected realities of the school site where they were hired (Eldar, Nabel, Schechter, Talmor & Mazin, 2003; Mohr & Townsend, 2001; Smyth, 1995; Solmon, Worthy, & Carter, 1993, Williams & Williamson; 1995, 1998; Wright, 2001). For example, Solmon, Worthy, and Carter (1993) described professional development (e.g., role identify, mission) of three beginning physical educators during their first year of teaching integrated with their biographical profiles and school context. The teachers reported their experience of reality shock within their workplace, which caused self-doubt and their confidence to be shaken. Moreover, they realized that their initial expectations that were developed during their teacher preparation program were unrealistic given the context of the school (Solmon et al., 1993). Other studies reported similar findings regarding reality shock. A longitudinal study conducted by Wright (2001) in Singapore reported that one of the concerns beginning physical educators addressed was reality shock, which results from the differences between the teaching/learning conditions during the teacher preparation program and the real school settings during their induction periods. The contrasted reality to the teachers’ learning in preparation programs was also addressed by eight beginning teachers (Williams & Williamson, 1998). In addition, lack of realistic
appreciation of school and community cultures during the preparation programs resulted in the experience of reality shock of the beginning teachers (Smyth, 1995).

**Wash-out Effect**

Another concern that beginning physical educators reported was the “wash-out effect”. Zeichner and Tabachnick (1981) considered the wash-out effect as the period of time when the impact/learning of the teacher education programs diminishes. The experience of the wash-out effect has been addressed by several beginning physical educators in the literature. For example, eight beginning physical educators who graduated from the same teacher preparation program mentioned that when they confronted with specific incidents, particularly in the case of facing “teachers and administrators resistant to change”, they employed compliance as a social strategy (Williams & Williamson, 1998, p. 85). During this process, their learning in the preparation program was washed-out and their professional value became compromised with the given context. Stroot, Faucette, and Schwager (1993) also revealed that when new teachers faced contradictions between their mission of teaching and their realities, they chose to comply with the school tradition through which they were doing things they never thought they would accept as teacher behaviors. Williams and Williamson (1998) explained the occurrence of the wash-out effect as the result that “teacher education programs had not prepared fully for the events, politics, and struggles of legitimacy they encountered” (p. 86).

**Workload**

Difficulty of handling the same workload given to both experienced and beginning teachers is identified as a concern of beginning teachers, which influences their
first year of teaching experience. In addition, physical educators addressed the demand of an extra workload for coaching role in schools (Mohr & Townsend, 2001; Smyth, 1995). Several beginning physical educators reported their heavy duties along with extra responsibilities for extracurricular activities, such as coaching or non-teaching duties, that further complicate their daily schedules (Curtner-Smith, 1997; Schempp, Sparkes, & Templin, 1993; Smyth, 1995). The studies problematized their additional responsibilities that inhibited them from maintaining the standards of teaching learned during their preparation programs (Curtner-Smith, 2001; Schempp et al., 1993).

Marginalization

Related to the marginalization issue, beginning physical educators recognized that physical education is defined as a marginal subject, as well as “peripheral to the central functions of the school” (Sparkes, Templin, & Schempp, 1993, p. 387). Learning in physical education is not considered a primary expectation of the administration, faculty, parents, students, or even physical education teachers themselves. When physical educators conflict with teachers of other subjects regarding values and beliefs, they desist from insisting on their point of view and choose to go along with others with the realization of lack of their power in schools (William & Williamson, 1998). Such understanding of physical education in schools has resulted in the struggle of beginning physical educators for legitimacy of the subject of physical education in order to ensure their status in schools and to gain student recognition toward physical education as a legitimate class (Smyth, 1995; Solmon et al., 2001).

Isolation
In general, beginning teachers, regardless of the subjects they teach, often experience various types of physical, social, psychological, and professional isolation (Cordon, 1990; Macdonald, 1995). However, beginning physical educators address different degrees of isolation in terms of physical isolation accompanied with social and professional isolation. Related to the physical isolation, since the gymnasium is usually located geographically further or separated from the main areas of school buildings, physical educators have a lack of opportunity to interact with other teachers (Williams & Williamson, 1995). Moreover, the fact that physical education is excluded from core subject areas based on current education policy (e.g., No Child Left Behind) extends the degree to which the isolation of physical educators from the main functions of the school has increased (Solmon et al., 1993).

Physical isolation produces professional isolation of physical educators in schools. Lack of interaction with other teachers provides beginning physical educators with little opportunity to engage in a professional teaching dialogue with their colleagues from different content areas (Eldar et al., 2003; Williams & Williamson, 1995). When the beginning physical educators desire support and professional dialogue, they struggle with the inability to find someone to talk to about their professional beliefs, concerns, and practices (Napper-Owen & Phillip, 1995; Williams & Williamson, 1995). Smyth (1995) addressed that the low and marginalized status of physical education correlates with this isolation within schools.

Mentoring

In response to the concerns of beginning physical educators, although there is a limited understanding of importance of induction programs in physical education,
mentoring programs are recently recommended for successful induction of beginning physical educators (Mohr & Townsend, 2001). The experiences of mentoring programs were identified as significantly positive (Napper-Owen & Philips, 1995; Stroot et al., 1993; Williams & Williamson, 1998). For example, two beginning teachers in a study by Stroot et al., (1993) described their mentoring program experiences. The teachers reported that both informal and formal mentoring programs they received provided emotional and professional support. They also felt they were more effective teachers for this reason. Moreover, the mentoring experience of Katie in the study by Williams and Williamson (1998) helped hold and implement her own beliefs and values into her teaching as well as to have more interaction with other colleagues. Similarly, two first-year teachers who received mentoring support reported their positive experiences as well (Napper-Owen & Phillips, 1995). The study revealed that isolation was not considered as a concern of the beginning teachers. Instead, the teachers experienced improvement of their teaching practices throughout their first year of teaching. Despite the benefits of mentoring programs, beginning physical educators are exposed to inadequate opportunities of mentoring programs (Smyth, 1995). Therefore, Wright (2001) suggested that “a more systematic approach toward mentoring as part of an induction program for 1st-year teachers” (p. 224) should be provided to meet the specific needs of physical educators.

**High Quality Induction Programs**

Recently, the significance of induction for beginning teachers has been emphasized as the beginning teacher attrition rate has emerged as a serious problem. National Commission on Teaching and America’s Future (NCTAF, 2003) referred to
teacher attrition as “the leak in the bucket” (p. 10). Earlier estimates by the NCTAF (1996) indicate that more than 30 percent of beginning teachers leave the profession within their first five years of entry into their teaching profession. The latter document is reported that the attrition rate for three to five years of teaching experience teachers is about 20 to 30 percent in general and almost 50 percent in urban districts (Darling-Hammond, 1997). Moreover, Ingersoll and Kralik (2004) indicate that between 40-50% of new teachers leave their position within the first five years.

Teacher attrition during the first few years of teaching causes enormous costs to be spent (Darling-Hammon, 2003). When teachers leave their teaching profession, schools take funds urgently needed for school improvements to pay into recruitment efforts and professional support for newly-hired teachers. In addition, considering the evidence of remarkable increase in teacher effectiveness after the first few years of teaching, the high rate of beginning-teacher attrition may result in an overall decrease of productivity in education community (Darling-Hammon, 2003).

Darling-Hammon (2003) identified four major factors that strongly influence on new teacher’s decision to leave their teaching profession: 1) relatively low salaries, 2) poor working conditions with high-minority and low-income schools, 3) insufficient teacher training for preparation and, 4) lack of mentoring support in the early years (p. 9). Among these reasons, the most often indicated reason that beginning teachers determine to leave their teaching is a designated lack of support during their first few years of teaching (AFT, 2001). Given data about teacher attrition and attrition reasons, a growing consensus has developed that support and assistance are essential to the retention and
effectiveness of beginning teachers who can construct a professional, standards-based practice in the context of their teaching (Feiman-Nemser et al., 1999).

Despite the growing recognition of a teacher’s need for support and assistance, according to the results of the AFT analysis (2001), 33 states have induction policies, but among these 33 states, only 22 mandate and fund induction programs. In addition, currently it is reported that only 27 states provide a formally approved and implemented state wide support system for beginning teachers (Feiman-Nemser, 2001). However, it is clear that the induction period during which new teachers are still learning to teach has gained more attention as a vehicle for helping unfit teachers make better decisions, and for reducing attrition and encouraging teachers to continue teaching profession (North Central Regional Educational Laboratory, 1999). For example, the mandatory state induction program for beginning teachers have reduced attrition rate from 39 percent to 9 percent (AFT, 2001). Several districts providing expert mentors to support beginners in their first year on the job as part of an induction program have reported a reduction in the attrition rates of beginning teachers by more than two-thirds (Darling-Hammond, 2003). NCTAF (2003) reported that supportive mentoring programs promote teacher retention whereas “teachers without induction support leave the profession at a rate almost 70% higher than those who receive it” (p. 29).

Additionally, induction programs help beginning teachers shift their focus from classroom management issue to improvement of instruction (NCTAF, 1996). According to the report from American Federation of Teachers (AFT, 2001), support and assistance of induction programs for the initial years of teaching devote to produce likelihood of high-quality teachers who are prepared for challenges of the classroom and to remain in
profession. As a means of gaining those benefits for beginning teachers, teacher induction is distinct from both pre-service and in-service teacher professional development programs. Basically, though induction programs are designed for new teachers who have already completed some degree of basic training in teacher preparation programs, it is not an extension program of teacher preparation (Ingersoll & Kralik, 2004). Given this idea, AFT (2001) stated “induction programs provide a hands-on opportunity for beginning teachers -under the guidance of experienced mentors- to link the theory of instruction learned in their teacher preparation programs with the practice of classroom teaching (p. 2). Hence, these programs are often conceived as a bridge from being a student of teaching to a teacher of students (Ingersoll & Kralik, 2004; North Central Regional Educational Laboratory, 1999).

Overall, the challenge of induction programs is to provide new teachers with the kind of support needed for them to remain in the profession and to be equipped for today’s high standards (Stansbury & Zimmerman, 2000). Despite widespread recognition of the benefit of induction program, the whole picture of induction is still uneven and varied across the nation, states, and districts (Feiman-Nemser, 2001; Feiman-Nemser et al., 1999). Responding to given situations, several studies address and discuss regarding the quality of current induction programs. For example, Feiman-Nemser (2001) described that often induction programs struggle with insufficient resources to provide effective programs, which may fail to support beginning teachers to survive in the complex world of today’s schools. In contrast, well-designed and implemented induction programs result in raising retention rates for new teachers by improving new teachers’ attitudes, feelings of efficacy, and instructional skills as well as
helping them connect the theoretical knowledge acquired in their teacher preparation programs to the real-life teaching (Darling-Hammond, 2003; Stansbury & Zimmerman, 2000). However, the characteristics of the well-designed and implemented induction programs are either not described or are ambiguous. Therefore, at this point, it is necessary to identify what is necessary for induction programs to be of high quality.

Description of High Quality Induction

According to the NCTAF data (1997), 56 percent of teachers have experience in attending an induction program during their first three years of teaching. The quality and duration of these programs, however, varies considerably. Based on the resources, the characteristics of high quality of induction programs are elaborated:

Vision of induction

As indicated by various data, beginning teacher retention is considered a serious problem and the induction program experience encourages the beginning teachers to stay in their teaching profession (AFT, 2001; Darling-Hammond, 2003; Ingersoll & Kralik, 2004; NCTAF, 2003). For this reason, high retention of beginning teachers is counted as the primary goal for induction programs. However, confining attention to the first year of teaching in induction programs is considered as a narrow vision for short-term support (Feiman-Nemser, 2003). The induction period holds a pivotal position in a broader continuum from teacher preparation to development, where new situations and the complexities of teaching confront the novice teachers with daily dilemmas and uncertainties (Feiman-Nemser et al., 1999). Specifically, the problems that most first year teachers request assistance for are as follows: disciplining and motivating students, dealing with individual differences, assessing student work, relating to parents,
organizing class work, and obtaining materials and supplies (Veenman, 1984). To help novice teachers to solve those problems they confront, instructional support must be planned and offered in a sequence responding to their needs (Gold, 1996).

Given the nature of the situation that beginning teachers are placed in, the vision of induction programs must not be limited to improving teacher retention, but must also promote a high quality of teaching. Moir and Gless (2001) indicated that the induction experiences have the potential to frame the future of the teaching profession for the next thirty years in a teacher’s career. In addition, current education reforms calling for standards-based teaching performance put pressure on beginning teachers to demonstrate instructional effectiveness in their classrooms. The assumption is claimed that if new teachers are seriously considered as learners, and induction programs are designed for a vision of good teaching and aligning with standards for student learning, teacher development can be accomplished, and the quality of teaching and learning are mainly considered to improve (Feiman-Nemser, 2003). Taken together, such induction programs may have “the potential to become one of the most powerful forces for educational change and professional renewal in the history of public education” (Moir & Gless, 2001, p. 111).

Policy Support

In order to protect new teachers during the critical early stage of their career, teacher induction must be recognized as a priority for states and districts. Despite evidence pointing to the positive impact of the induction program experience on beginning teacher retention and teacher quality, the full potential of the programs is not yet realized due to uneven implementation within and across states (Feiman-Nemser,
2003; Feiman-Nemser et al., 1999). However, the full effect of these programs can be realized by establishing relevant policies (Wang, Tregidgo, & Mifsud, 2001). In particular, some specific factors are identified as those influenced by policy support for high quality induction programs such as reduced teaching loads for beginning teachers and sufficient resources.

Reduced Teaching Loads for Beginning Teachers. Teacher assignment is considered a factor that influences teaching efficacy (Moir & Gless, 2001). Unless there is specific administrative protection for beginning teachers, they are often given the most demanding assignments with inadequate resources or redundant assignments. In this case, those assignments can threaten their teaching efficacy and, in some cases, affect the beginning teacher’s decision to end their teaching career (Moir & Gless, 2001; Stansbury & Zimmerman, 2000). In strong induction settings, however, novice teachers who are assigned appropriate assignments considering their stage of development are most likely to succeed in and able to handle their teaching (Feiman-Nemser, 2003). Related to the issue of appropriate assignments for new teachers, NCTAF (1996) proposed the idea of a reduced teaching load.

A report of the AFT (2001) discussed the need for reduced teaching loads of beginning teachers to enhance their professional skills with the reason being that novices need both the time and the opportunity to observe other teachers teaching, confer with colleagues, work with their mentors, and reflect on their own teaching” (p. 3). However, to ensure reduced teaching loads, school reform efforts are required to protect beginning teachers. Therefore, administrators should reduce the beginning teacher’s teaching loads for success of the first few years of teaching within the school’s reform efforts in several
issues such as decreasing the number of students in the classrooms, refraining from assigning them the most challenging students, and minimizing their extracurricular and committee assignments (Stansbury & Zimmerman, 2000).

**Sufficient Resources.** Sufficient and on-going fiscal resources to support induction programs are a critical issue to determining the quality of the program and its sustainability (Serpell & Bozeman, 1999; Stansbury & Zimmerman, 2000). The amount of available funding affects the length and breadth of the induction period. For example, it often affects the types of activities in a teacher induction program that are provided for new teachers, such as either one-shot/low-frequency events or sustained attention (Stansbury & Zimmerman, 2000). The available funding also determines whether new and mentor teachers receive release time for an effective mentoring program (Serpell & Bozeman, 1999). However, in reality, the amount of resources that schools and districts are assigned to beginning teacher support varies (Stansbury & Zimmerman, 2000). In addition, many states have reported elimination of support programs for beginning teachers due to reduced or restricted funding (Weiss & Weiss, 1999).

Policy support with sufficient resources is required for high quality induction programs. The AFT (2001) reported that “if induction is unfunded at the state and/or local level, it is likely to have less-than-optimum reach and force” (p7). Conversely, induction programs mandated and funded by the state can have structured and long-term orientation for new teachers. Moreover, these policy supports demonstrate a commitment to the success of new teachers by indicting how individual schools or districts should support and motivate their new teachers (Serpell & Bozeman, 1999; Wang et al., 2001). Therefore, when induction is supported with at least a portion of the funding coming
from the state, it not only reinforces the importance of induction as a state/district priority, but it also increases the likelihood that the induction program will be of high quality.

**Quality mentoring**

Mentoring is defined as “the process through which beginning teachers become more proficient in their profession as a result of structured and planned experiences with a veteran teacher” (Serpell & Bozeman, 1999, p. 6). Following the definition, Ingersoll and Kralik (2004) described the overall objective of teacher mentoring programs as providing newcomers (novice teachers) with a local guide.

As mentoring is identified as the most commonly implemented strategy of induction programs, the benefit of a mentoring program for beginning teachers is supported as the crucial component of induction programs in terms of retention and effective teaching (AFT, 2001; Moir & Gless, 2001; NCREL, 1999). For example, mentored novice teachers tend to focus on student learning sooner and remain in the profession (NCTAF, 1996). Serpell and Bozeman (1999) addressed that “beginning teachers who have had a mentor in their first year of teaching feel more prepared and are more likely to be retained” (p. 8). Moreover, various studies collectively provide empirical evidences for the claim that assistance for new teachers, in particular, mentoring programs, result in a positive impact on teachers and their retention (Ingersoll & Kralik, 2004). However, the character and content of the programs widely vary so that the features of strong or effective mentoring programs need to be considered for high quality induction programs. In general, quality mentoring programs are characterized by careful selection, preparation (training), and on-going support for mentor teachers (Moir & Gless, 2001; Feiman-Nemser, 2003; Stansbury & Zimmerman, 2000). In addition, the
way of matching between mentors and beginning teachers is identified as a factor that can affect the quality of mentoring programs. The individual components of quality mentoring programs will be discussed below.

Selection of Mentor Teachers. The North Central Regional Educational Laboratory (NCREL, 1999) recommended one-on-one mentoring between a novice and master teacher to deepen the knowledge base about what constitutes good teaching through observation and discussion between them. This commitment to mentoring indicates that the role of mentors is considered more than just buddies or cheerleaders (Stansbury & Zimmerman, 2000). To fulfill such a mentor role, mentors need to be carefully screened and selected.

Various literatures indicate that a teacher’s experience and/or reputation are not always the best indicators to choose an effective mentor (AFT, 2001; Feiman-Nemser, 2003; Moir & Gless, 2001; Stansbury & Zimmerman, 2000). For example, not every outstanding classroom teacher or experienced teacher is necessarily a talented mentor (AFT, 2001; Feiman-Nemser, 2003; Moir & Gless, 2001). Moreover, excellent classroom teachers do not always make the best support for beginning teachers (Stansbury & Zimmerman, 2000). Instead, high quality induction programs should designate specific selection criteria that allow ensuring only high-quality mentors to assume the appropriate mentor roles (AFT, 2001; Moir & Gless, 2001). As an example, Moir and Gless (2001) provided selection criteria that include strong interpersonal skills, credibility with peers and administrators, a demonstrated curiosity and eagerness to learn, respect for multiple perspectives, and outstanding instructional practice.
Training of Mentor Teachers. Stansbury and Zimmerman (2000) stated that “working with beginning teachers is different from working with children and youth” (p. 8). This caution holds the assumptions that skill or temperament suited to work with adults is not automatically ensured by demonstrating the most outstanding teaching in K-12 school settings (Feiman-Nemser, 2003; Stansbury & Zimmerman, 2000). To provide adequate preparation for mentor teachers allows them to define their role and responsibilities in educational terms (Feiman-Nemser, 2003). Hence, mentor training is identified as an important characteristic of effective mentor programs, and moreover, successful mentor programs are dependent upon the quality of training afforded for the mentors (Weiss & Weiss; 1999; Serpell & Bozeman, 1999; Feiman-Nemser, 2003).

When mentors are working to accomplish the goal of learning to teach for beginning teachers, the mentor’s role is to become teachers of teaching, not just buddies. In this case, many potential mentors need to be trained for observation skills and specific strategies for working with adults to provide mentoring within educative ways to their mentees (Feiman-Nemser, 2003; Stansbury & Zimmerman, 2000). In general, mentor training should provide mentors with opportunities to identify and analyze their vision of good teaching and effective models of mentoring aligned with the aims of induction programs (Feiman-Nemser, 2003). Moreover, preparation needs to focus on coaching skills, and collecting and interpreting evidence of teaching, in particular: initiating collegial conversation, supporting colleagues in constructing and extending their own analysis of a teaching or learning event, and collecting and analyzing the different types of evidence (Stansbury & Zimmerman, 2000). Therefore, high-quality induction
programs should offer mentors more than a few days of training as well as ongoing opportunities to improve the necessary skills and strategies for mentoring.

**Support for Mentor Teachers.** In order to help mentors provide various activities for effective mentoring, it is necessary to support the mentors in various ways. First of all, release time from teaching duties allows mentors the time necessary to devote to their tasks (AFT, 2001; Serpell & Bozeman, 1999; Stansbury & Zimmerman, 2000). Moir (2003) addressed that it is very difficult for mentor teachers to spend the time and effort necessary for successful mentoring without some adjustment in scheduling. In order to provide sufficient support for beginning teachers, mentors need to spend adequate time for “observation, collaborative lesson design, model teaching, veteran teacher observation, reflection, analysis of student work, goal-setting, and assessment based on professional standards” (Moir & Gless, 2001, p. 113). For example, when mentor teachers are released from their teaching duties, they can provide demonstration lessons to show workable teaching techniques in the beginner’s classrooms as well as observe and document beginning teachers’ teaching practices for later discussion (Stansbury & Zimmerman, 2000). Therefore, only protected time can allow the mentors to make classroom observations, meetings, and discussions between mentors and beginning teachers without being rushed.

In recognition of mentors’ contribution to mentoring process, mentors must be fairly compensated for their effort with incentives such as money, improved status, or credit (AFT, 2001; Serpell & Bozeman, 1999). Therefore, high quality induction programs should consider the critical role of mentors and provide them with strong support to devote to their mentoring work.
Matching. AFT (2001) strongly suggested that “mentors should be matched for both grade level and subject area to the individuals they are assigned to mentor” (p. 3). It is reported that matching the pair by the same grade level or content area increases both the likelihood of regular interaction and the effectiveness of the support (Gold, 1996; Stansbury & Zimmerman, 2000). Moreover, matching of mentor and mentee by work experience and personality results in a positive impact on the mentoring relationships (Serpell & Bozeman, 1999). Moir (2003) suggested that matching of the same content area and grade level saves valuable mentoring time and builds opportunities for deeper collaboration. Therefore, it is clear that a high quality of the induction process can be conducted by pairing beginning teachers and mentors at the same grade level and/or in the same content area to be more effective.

Professional Standards

High quality induction programs require professional standards for performance assessments of the beginning teacher’s teaching practices (AFT, 2001; Feiman-Nemser, 2003; Moir-Gless, 2001). The professional standards should identify and include knowledge and skills necessary for beginning teachers that reflect visions of effective teaching. They can then be used to guide the learning and growth of new teachers (Moir & Gless, 2001). However, keeping the goal of teacher retention and high quality teaching in mind, induction program design should be aligned with professional standards so as to help new teachers learn to meet those standards in practice (Stansbury & Zimmerman, 2000; Weiss & Weiss; 1999).

The professional standards can serve to guide conversations about instruction and assessment for essential skills, knowledge, and dispositions of beginning teachers
(Feiman-Nemser, 2003; INTASC, 1992; NCTAF, 1996). For example, Moir and Gless (2001) stated that clearly-articulated professional standards for induction programs help “both the novice teacher and their mentor communicate effectively about and keep all eyes focused on high quality teaching and increased student learning” (p. 112). The professional standards also can be used to determine what evidence of teaching practices beginners collect and to identify both strengths and weakness areas to improve on (Stansbury & Zimmerman, 2000). In these assessment processes, beginning teachers can employ reflective teaching practices and improve their teaching performance based on the professional standards. As a result, new teachers can benefit from a high-quality induction period, which will support their teaching career. In addition, the teacher assessment data can be utilized to evaluate the induction programs and contribute to the development of the programs.

*Duration of the Program: At least One Year Experience*

In general, the first few years of teaching are recognized as an important and essential phase of teacher learning in an induction program (Moir & Gless, 2001). Many studies note that high-quality induction programs have a multiyear time frame (two to three years), where beginning teachers can develop a professional identity and consolidate professional practice through more sophisticated understanding and practices over time (Feiman-Nemser, 2001; Feiman–Nemser et al., 1999; Fideler & Haselkorn, 1999). In addition, the AFT (2001) policy indicated that “a one-to two-year period of induction can make the difference between a teacher who succeeds early in their career and one who does not, and between a teacher who remains in the profession and one who does not” (p. 2). Therefore, it is clear that high-quality induction programs should last at
least a full school year to provide the beginning teacher with an opportunity to experience all of the rites of school under the support of their mentor.

An Example of Induction program:

Columbus Peer Assistance and Review (PAR)

The need for development of support programs for beginning teachers has been made aware since the Conant Report in 1963. Prior to 1980, only Florida had mandated an induction program, the Beginning Teacher Program in 1978, which offered both mentoring and assessment. However, from the mid-eighties on, the scale of induction activity increased dramatically (Feiman–Nemser et al., 1999) and was aimed at helping beginning teachers make a successful transition from their teacher preparation experience to being the teacher-of-record in a classroom (Stansbury & Zimmerman, 2000). In 1991, 31 states reported having a beginning teacher support system (Gold, 1996). Among them, 22 states had implemented a beginning teacher support program with state funding, whereas six states implemented a program without state funding. The last three states were still in the initial stages of developing such a program.

The study by Recruiting New Teachers also found that as of 1997, 27 states had legislated state-level induction programs for beginning teachers, but only 7 states had financed and managed them (Fideler & Haselkorn, 1999). The most recent study also reported that although the number of state induction program has increased (from 7 states in 1996-1997 to 33 states in 2002), only 22 states provide funding for these programs, and not all of the programs provide on-site mentors (AFT, 2001: NCTAF, 2003).

As the status of state programs supported by policy is not consistent, there are a great number of induction programs that consist of very different and/or similar
characteristics across states and within states. For example, a program that is adopted by the state can be modified by the school district. This section will describe and discuss one induction program, the Columbus PAR program, as an example of using the components of high-quality induction that have been previously identified.

History

The Columbus Peer Assistance and Review (PAR) program is one of the programs that was developed and implemented through the support at the district level. In the mid 80’s, using targeting funds from a Career Enhancement line item of the state budget, Columbus supported and initiated the PAR program in the 1985-1986 academic year. The PAR program in Toledo and Columbus also received funding legislated at the state and district level, which was targeted to pilot projects focusing on Career Enhancement in the 1987-1989 bienniums. This system was continued in the next two biennia, from 1989 through 1993, and Columbus was continually designated as one of the seven districts targeted for the funds. In the 1993-1995 bienniums, the Legislative Office of Education Oversight changed the name of items within the “Career Enhancement Program” to “Career Ladders” and evaluated the projects focusing on career enhancement. Moreover, it was reported that “Amended Substitute H.B. 152 provided approximately $ 1.1 million for career ladder programs per year” (Stroot, 2000, p. 5). Following the evaluation of the career enhancement program, although districts were required to compete to be targeted funding, Peer Review was recommended to be pre-selected for funding without competition provided during the next two-year of period. Now, Peer Review grants are designated by the competition throughout the state.
Currently, with the recognition of the importance of the PAR program for attracting and retaining quality teachers, the National Education Association (NEA) has assumed the role of informing NEA affiliated districts about Peer Assistance and Peer Assistance and Review programs. Responding to the endorsement of the program in NEA, the effort to ensure quality teachers to improve student learning in schools extended to adopt PAR program at the state and district levels (Stroot, 2000). The state of California and several districts in Florida are examples of this case.

State/District Policy

The state of Ohio supports performance-based assessment for beginning teachers. For example, the Teacher Education and Licensure Standards (Administrative Code 3301-24) and PRAXIS III, Professional Assessment for Beginning Teachers, developed by Educational Testing Service have been adopted for performance-based assessment, in 1996 and 1999. Specifically, the PRAXIS III is utilized to determine state licensure of a teacher. However, assessment for the entry-year mentoring programs is dependent on the local district. The Columbus teacher’s contractual agreement requires all entry-year teachers to be placed in the PAR program for their entry year (intern segment) of service. Moreover, the Columbus Public School district offers a teaching contract for the second year based on the review of the entry-year teacher through PAR.

District Demographic

The Columbus Public Schools district is a large urban school district located in the state capital of Ohio (Stroot, 2000). Approximately 4,500 teachers are working in the district schools to serve 65,000 students. Sixty percent of the students are students of color, and forty-two percent of the student population of Columbus has been categorized
as “disadvantaged” (Stroot, 2000). The graduation rate is reported to be 61.1%. The Columbus Education Association has been recognized as a powerful teacher’s association for the Columbus teachers through involvement in the collaborative partnerships between the Ohio State University College of Education, the Columbus Public Schools (CPS), and the Columbus Education Association (CEA).

**Funding**

Although funding is not provided to support the mandate of the state, the PAR program has received multiple funds, such as grants from Metropolitan Life and PAR funding. The awarded funding is only available to the district every other year. The funding is spent on: 1) the hiring of substitute teachers for consultant teachers, 2) the additional 20% stipend for each consultant teacher, 3) office space, 4) secretarial assistance, and 5) the purchase and copying of the resources for intern and intervention teachers (Stroot, 2000, p. 10). For example, during the 1998-1999 school years, $2,823,856 was spent to serve 769 intern teachers and over 25 intervention teachers with 37 consultant teachers.

**Program Design**

The PAR program has been designed to retain new teachers and to improve the quality of instruction by assuring that all teachers experience professional success. The program consists of two segments, intern and intervention. The intern segment is offered to all newly-hired teachers, and the intervention segment exists for experienced teachers with difficulty in their teaching performance. Since this paper’s focus is on the induction program, the intern segment will be described in more detail than the intervention segment.
Throughout the year, all entry-year teachers (intern teachers) hired by the district and experienced teachers who struggle with teaching are provided with ongoing assistance and assessment by a consultant teacher. Each intern teacher receives a minimum of 20 observations and 10 conferences and intervention teachers receive a minimum of 40 observations and 20 conferences per year. Consulting teachers document data-based reports on the progress of their intern or intervention teachers for an interim and final evaluation. The documentation is presented to the PAR Panel consisting of seven members on several different occasions throughout the year. In addition, consulting teachers make recommendations to the PAR Panel.

Based on the documentation and recommendation completed by consulting teachers, the Panel makes a decision on “whether to renew the entry-year teacher’s contracts for the following year, and whether to continue support to the experienced (intervention) teachers (Stroot, 2000, p. 13). If the intern has their contract renewed, he/she can stay in the district but still have to pass PRAXIS III within two years to receive teaching licensure as mandated by the state. However, in cases where the entry-year teacher’s performance is evaluated as unsatisfactory, the teacher must leave their job in the CPS district. These teachers can still be hired by other school districts.

**Philosophy**

The Columbus Public School district supports development of teachers’ own style of teaching in their classroom. However, outcome-based learning aligned with the district Course Study and/or Content Area Benchmarks is considered reflecting the process of teaching. To assess the teacher’s performance, the PAR program employs the
Performance Terms (professional standards) which allows teachers to demonstrate their own individualized instructional style.

*Mentor/Mentoring: Consulting Teachers*

Mentors are called “consulting teachers” or “assessors” in the PAR program (Stroot, 2003, p. 19). The major roles and responsibilities of the consulting teacher include the following: 1) inservices for interns, 2) observations, 3) conferences, 4) written and oral PAR Panel reports on the progress of interns and interventions, 5) intern interim reports, and 6) intern appraisal summary reports (final evaluation). There are also specific criteria for selection, training sessions, and some support to help consulting teachers focus on their tasks.

*Criteria for Selection (Mentor).* Specific criteria for selection of consulting teachers are addressed in the PAR program as follows (excerpted from material of second National Workshop on PAR, 2001, p. 4):

- Has been a teacher in the Columbus Public Schools for a minimum of five years
- Demonstrates outstanding classroom teaching ability
- Demonstrates talent in written and oral communications
- Demonstrates ability to work cooperatively and effectively with other professional staff members
- Has extensive knowledge of a variety of classroom management and instructional techniques.

Based on the application forms and references submitted by applicants for consulting teachers, the President of the CEA and the Manager of Personnel Services review and identify the applicants for consideration by the seven-member PAR Panel.
These candidates are then given a set of questions requiring written responses in order to review their attitudes, knowledge, and written communication skills. The panel also has an extensive oral interview with the candidates to assess their qualifications to be a PAR consulting teacher. Based on the report, the panel selects consulting teachers from this candidate group.

Training Sessions for the Mentor. The selected consulting teachers are to receive approximately 100 hours of professional development throughout the year by the Ohio State University, as a form of training. They meet for one full week before school starts and every other Friday afternoon during the school year. The Ohio State University faculty provides a series of graduate level courses for professional development – “PD for PAR” (Stroot, 2000, p. 19). The topics focus on teachers’ developmental stages, performance terms, Glickman’s model of supervision, data collection strategies, and reporting the data in an objective and comprehensive way. In addition, the consulting teachers are provided opportunities to select specific issues as well as to pursue individual goals throughout the PD for PAR. For example, the consultant teachers are prepared for their role in the annual PAR conference hosted by the Columbus PAR program in spring, 1998. In terms of individual goals, some of them pursue “writing for publication, developing and organizing a resource theme for future use in the program, or designing a notebook to assist the new consultant teachers” (Stroot, 2000, p. 22).

Support for Mentor. The PAR program supports selected consulting teachers to fully devote to assist and review teachers by releasing them from their teaching duties for a maximum of three years. Caseload per consulting teacher is approximately 20 teachers for each year, including one or two intervention teachers. As a means of compensating
them for their work, the consulting teachers are provided an additional 20% stipend added to their base salary during this term.

Matching. Specific methods for matching consulting teachers and interns are not addressed in the PAR program. However, it is clear that the PAR panel attempts to hire consulting teachers that are aligned with the new teachers hired by district. For example, if there is a high need for a certain subject, consulting teachers of that subject area are to be hired by the panel. As a result, new teachers cannot always be matched with a consulting teacher of the same subject.

Intern (& Intervention) Participants

All newly-hired teachers in the Columbus Public Schools are required to engage in the intern segment of the PAR program which provides support, advice, and direction necessary to help accomplish their successful first year’s experience. In general, the interns who should be involved in the PAR program are considered not only those who have not previously participated in the PAR program but also those teachers returning to the Columbus Public Schools after five years outside the district. Consulting teachers provide assistance and evaluation throughout the year. The interns are also offered the opportunity to participate in professional workshops at the graduate level and a three credit hour of PAR/OSU course, “focusing on management and effective teaching strategies, various styles of teaching and curricular approaches, and introduction to the vast array of resources available in Columbus Public Schools” (Stroot, 2000, p. 19).

Evaluation/Assessment of the Teacher

The Columbus PAR program employs “Performance Terms” as professional standards to hold accountable the quality teaching performance of interns and
intervention teachers. The interns and intervention teachers are assessed by their consulting teachers as to whether they have demonstrated the Performance Terms. The Performance Terms consist of the following areas: teaching performance, pupil relations, classroom management, and overall value to the school program, personal characteristics, staff relations, parent-community relations, and professional growth. As the Performance Terms are the cornerstone of the program, the consulting teachers are required to align the observations and conferences with the variables within the Performance Terms, specifically targeting the first three variables: teaching performance, pupil relations, and classroom management, which are clearly observable in the classroom setting (Stroot, Bush, & Flore-Marti, 2003).

Success of the Program

According to the data on teacher retention between 1986 and 1999, a total of 92.1 percent of interns successfully completed PAR program and remained in their teaching (Stroot, 2000). It is also reported that 80 percent of the teachers remained in their first five years of teaching in the Columbus Public Schools. The PAR Panel is responsible for the evaluation of the program. However, only descriptive data are available such as retention rate because of confidentiality issues associated with performance of not only intern/intervention but also consulting teachers. Therefore, little information is reported on the progress process of individual teachers in the PAR program.

Critique

Aligned with the components of high-quality induction for beginning teachers identified, the Columbus PAR program is considered very well-designed for all entry year teachers hired by the district (See Table 2.6).
First of all, the vision of the PAR program is identified as both retaining new teachers and improving effective instruction in urban school settings. Regarding policy issues, although the state of Ohio does not provide mandated funding for induction programs, state policy includes induction programs mandating each district. The CPS district has adopted the PAR program as the unique program in the district for beginning teachers. With the success of the PAR program at the district level, it influences policy decisions at the state level so that the Columbus PAR program is currently modeled for other districts in Ohio as well as within other states.

Thus far, the funding and support systems for mentors (consulting teachers) have remained consistent in their implementation and development of the program. For example, the CPS district ensures involvement of all entry teachers in the PAR program as a part of the contractual process. Strong collaborative commitment between the Columbus Education Association, Columbus Public Schools, and the Ohio State University contributes to on-going support and development of the PAR program in the district. Moreover, the PAR program is continuously awarded grant funding from the state, which can be used to maintain the effective program and to meet the cost for mentors (consulting teachers). However, maintaining this positive support at the district level is necessary in order to maintain the status of the program.
<table>
<thead>
<tr>
<th>Component</th>
<th>PAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vision of induction</td>
<td>- To increase retention</td>
</tr>
<tr>
<td></td>
<td>- To improve teaching performance</td>
</tr>
<tr>
<td>Policy</td>
<td></td>
</tr>
<tr>
<td>Mandates</td>
<td>- State: Mandates induction program</td>
</tr>
<tr>
<td></td>
<td>- District: Mandates PAR program</td>
</tr>
<tr>
<td>Teaching load</td>
<td>No</td>
</tr>
<tr>
<td>Resource</td>
<td>Yes</td>
</tr>
<tr>
<td>Selection</td>
<td>Yes</td>
</tr>
<tr>
<td>Training</td>
<td>Yes</td>
</tr>
<tr>
<td>Support</td>
<td>Yes</td>
</tr>
<tr>
<td>Matching</td>
<td>If possible</td>
</tr>
<tr>
<td>Standards</td>
<td>Yes/ differ from state by mentor</td>
</tr>
<tr>
<td>Duration</td>
<td>1st year</td>
</tr>
<tr>
<td>Strength</td>
<td>- District - supportive</td>
</tr>
<tr>
<td></td>
<td>- Professional development for mentors</td>
</tr>
<tr>
<td></td>
<td>- Intimate support/mentoring: specific job responsibilities are addressed</td>
</tr>
<tr>
<td></td>
<td>- Unique program within the district</td>
</tr>
<tr>
<td>Weakness</td>
<td>- Use different standards from state licensure</td>
</tr>
<tr>
<td></td>
<td>- Limited to 1yr: continuing growth?</td>
</tr>
<tr>
<td></td>
<td>- Matching: no guarantee for specialist area</td>
</tr>
<tr>
<td>Outcome</td>
<td>Employment condition</td>
</tr>
</tbody>
</table>

Table 2.6: Summary of characteristics of three induction programs using high-quality induction criteria.
In the PAR program, the role of mentors is very critical. They not only provide assistance and support but also engage in review of what influences the employment conditions of the beginning teachers. The PAR program assumes that the two functions can be successfully performed by one person: mentoring and evaluation. In order to fulfill these roles and to promote ethical decision on the part of the mentors, the program pays attention to the selection, support, and training for them. Mentors are selected by the PAR panel based on the specific criteria and interview report and released from their full-time teaching duties for up to three years to focus on their responsibilities. Moreover, an additional 20% stipend on their base salary is provided to the mentors as compensation for their work.

In exchange, the program demands specific responsibilities from its mentors: a minimum of 20 observations and 10 conferences per year with beginning teachers, interim and final evaluation reports, and recommendations for their interns. For training, these mentors are required to be involved in approximately 100 hours of graduate-level courses offered by OSU faculty as a form of professional development (PD for PAR), prior to and during the school year to ensure their ability as a mentor. Given these conditions, it is clear that the PAR program is very supportive for mentors to help them complete their tasks.

However, there is no flexible teaching load for beginning teachers. Beginning teachers (interns) are required to complete the same teaching load as other experienced teachers without reduced assignment. As many studies suggested, reduced teaching load can help novice teachers improve their professional skills (AFT, 2001; Feiman-Nemser, 2003; Stansbury & Zimmerman, 2000). For the support of a beginning teacher’s
improvement, reform efforts might be needed to handle this issue. Moreover, matching with mentors and beginning teachers is not clearly mentioned in the PAR program. Although mentors in the same grade level and content area are recommended for effective collaboration with mentees (Moir, 2003), the PAR program hires mentors in the areas that require higher need. Hence, there is no assurance that the beginning teachers of some specialist areas, such as art, PE, and nursing, can benefit from matched mentors who can provide them with content-specific help.

The PAR program has professional standards and Performance Terms to assess its interns. The standards are used for observation as well as for evaluation of the beginning teachers. This alignment within the program is beneficial for beginning teachers and improves their retention after their first year teaching in the district. However, teachers are required to pass the teacher licensure test, Praxis III, as mandated by the state to continue their teaching profession. Unfortunately, the Performance Terms are not aligned with the Praxis III. This indicates that beginning teachers should focus on the Performance Terms in their first year to keep their teaching position in the district and on the Praxis III in their second year to receive state teacher licensure. Moreover, since the program is offered only during the first year for all entry-year teachers, the second year teachers have to survive in this situation by themselves. In addition, their continuing growth over time is not supported at the district level after the PAR program. This conflict is creating an uneasy scenario regarding entry-year teacher assessment in Columbus, Ohio.

Overall, the strength of the PAR program is in its recognition of the program’s significance at the state and district level with support and continuing effort toward high-
quality mentors and mentoring activities. However, there are some weaknesses in terms of using different standards from state requirements, one-year long programs, and flexible matching.

Research on Professional Development in Physical Education

Terms such as ‘in-service training’ or ‘staff development’ that pervasively connote learning opportunities for in-service teachers in the past are currently converted to ‘professional development’ (PD) (Feiman-Nemser, 2001). As the PD unifies various terms, the definition of PD is varied. According to National Association of State Directors of Teacher Education and Certification (NSDTEC, 2002), PD is defined as “any coursework, experience, training, or renewal activity required by a state to maintain the validity of a license” (p. E-2). Craft (1996) also defined continuing PD including “all types of professional learning undertaken by teachers beyond the initial point of training” (p. 6).

The significance of PD is supported under the assumption that improving the quality of teachers improves student learning. The effort to enhance teacher quality is linked to providing PD to teachers based on the fact that PD is “an essential mechanism for deepening teachers’ content knowledge and developing their teaching practices” (Desimon, Porter, Garet, Yoon, & Birman, 2002, p 81). To ensure increased PD programs for teachers, the NCLB Act (2001) requires states to annually increase the percentage of teachers receiving high-quality PD.

Along with the efforts to provide more PD programs for teachers, several studies have been conducted in general education to examine the impact of the PD experience on the attending teachers in PD. The American Institutes for Research (AIR) conducted a
three year longitudinal project, the Eisenhower PD program, sponsored by the U.S.
Department of Education. Based on the findings of the project, Porter and his colleagues
reported the impact of PD programs on changes in teaching practice and the
characteristics of high quality PD programs based on survey studies. They surveyed
1027 mathematics and science teachers in each of the 30 schools within 10 districts
across 5 states over three years (Desimon et al., 2002; Garet, Porter, Desimone, Birman,
& Yoon, 2001; Garet, Desimone, Yoon, & Birman, 2000). According to the findings of
the studies, PD programs made little change in teaching practice. However, the studies
identified and recommended features of effective PD programs addressed by the teachers
that influenced teachers’ teaching practices: collective participation of teachers, active
learning opportunities, coherence, and reform type PD.

Kersiant, Borman, Boydston, and Sadler (2001) examined teachers’ perceptions
on their PD experiences provided by the Urban Systemic Initiative across four sites
(Miami, Chicago, El Paso, and Memphis). They used focus group interviews and an
open-ended questionnaire to gather information. The study found that although teachers
positively commented on their involvement and experience in PD, they concluded that
PD was not applicable to their school settings. Most teachers in the study also addressed
that site-based PD and additional training following formal PD schedule were desirable
and effective.

The impact of PD is examined by not only focusing on teachers who received PD
program but also on students who were taught by the teachers. Diem, Field, and
Hernandez (2003) collected survey, observation, and interview data to determine the
effects of the PD training on participating teachers as well as changes that occurred in the
schools. As other studies found, the teachers were satisfied with the PD experience, which was considered informative and interesting. However, a lack of ability to deliver the materials and have their students engage in classroom activities was found. In addition, student data showed little increase in student achievement as reflected in test scores. Overall, the PD program resulted in little impact on teachers’ teaching practices as well as student achievement.

Considering current reform efforts, Henry and Opfer (2004) examined the effect of High Stakes Accountability (HSA) on PD, instructional practices, and student achievement based on the information gathered from the teachers within the sites implementing varying degrees of HSA system. A survey was completed by 107 teachers regarding their participation in PD and school and district responses to HSA. Moreover, they were asked about the effectiveness of their PD experiences in the survey. Despite policy efforts, the study found that HSA systems rarely increased teachers’ engagement in effective PD that affected the improvement of classroom instruction.

Based on the findings of those studies, characteristics of high quality PD that have been identified as effective are suggested: reform type, duration, collective participation, active learning, coherence, and content focus (Garet, et al., 2001; Henry & Opfer, 2004). However, some problematic issues are recognized in research of the PD area in general education. First, current PD programs in general are considered rarely tied to teachers’ classroom practices (Feiman-Nemser, 2001) so that teachers addressed concerns regarding the difficulty in delivering the material to their classroom (Diem et al., 2003; Kersiant et al., 2001). Thus, research found little impact of current PD on teaching practice (Desimon et al., 2002: Porter et al., 2000). Moreover, from a methodological
perspective, little empirical evidence linked between teachers’ learning in PD program and in delivering their learning in the actual class has been provided in this area of research (Porter et al., 2000). Research mostly used survey data but little practical evidence was utilized to examine a change in teacher practices (Armour & Yelling, 2004; Desimone, et al., 2002; Garet et al., 2001; Hiebert, 1999; Porter, Garet, Desimone, Birman, & Yoon, 2000; Tolbert, 2001). However, to examine the impact of PD experience on actual teaching practices, more systematic research providing practical evidence of real settings should be conducted.

Along with some challenges that researchers on PD in general education are faced with, the physical education field has faced additional issues associated with PD. As a result of exclusion of physical education from core subjects, physical educators have been involved in few learning opportunities in PD focusing on physical education. Moreover, the majority of university and school districts in the country rarely consider providing specialist subject areas such as physical education with PD opportunities (Neville & Robinson, 2003). According to Sullivan (2000), since needs of PD opportunities were focused on core subject areas at the district level, four physical educators in her study have been involved in PD sessions held within school building to complete requirement at their school level. The teachers addressed that their PD experiences were not aligned with the needs of physical educators. Aligned with this situation, little research efforts regarding PD programs and experiences of teachers have been contributed to the physical education community. Furthermore, even when PD is provided for physical educators, the PD programs usually are identified by a lack of
coherence and progression related to the teachers’ instruction in schools (Armour & Yelling, 2004).

In the face of this PD related situation in physical education, several of positive impacts of PD efforts were presented. Recent research project (Ward & O’Sullivan, 2006) reported several studies in a monograph that have been conducted while two Carol M. White Physical Education for Progress (PEP) grants were funded to provide physical educators in the Columbus Public Schools with more PD experiences as a means to improve teacher quality and student learning. Twenty-four teacher participated in each of these PEP grants during which they attended several topics of PD workshops (e.g., tactical approach teaching, Sport Education, management, instruction, etc), acquired materials and equipment, and received on-site assistance to implement their learning in the workshop. The studies in the manuscript targeted on these teachers to explore the impact of PD experiences on teacher change in terms of thinking, belief, and teaching practices in urban schools.

For example, Deglau and O’Sullivan (2006) found a shift of teachers’ belief to pursuing implement of their new-like learning from the PD workshops by seeing their students’ positive responses in their classes. The teachers also demonstrated varying levels of abilities in terms of engagement, imagination, and alignment corresponding to their levels of engagement in the PEP program. Specially, highly engaged teachers in this study showed extension of their boundary of a community of practice from their community to the broader profession (state conference) through creating and acting a professional leader role. This study highlighted contribution of the PEP PD initiative to change in teacher’s capacities and identities as a teacher, leader, and presenters. However,
another study (Ko, Wallhead, & Ward, 2006) in the manuscript that examined how the teachers delivered what they have learned from the Sport Education (SE) PD workshop found a limited impact of the PD workshop on actual teaching practices through direct observation. Results of misalignment between learning SE content in the workshop, and implementing and delivering the content in schools provided evidence of a superficial level of learning in the workshop, washout, contextual barriers at the school site, and a lack of teachers’ pedagogical strategies. This study suggested that effective PD experience should be designed by considering teacher’s prior knowledge on content, pedagogy and contextual barrier in their school setting and providing on-site support to help teachers integrate new-like learning into their context.

In addition, a study in the manuscript examined the content and strategies employed in a PD initiative called PEP-talk, that designed for teachers to engage in reflection and professional dialogue regarding their confronted professional issues (Deglau, Ward, O’Sullivan, & Bush, 2006). This study discussed teachers’ insight into and response to the issue of ‘hegemonic operation of power’ (Deglau et al., 2006, p. 425) under the recent policies on the exclusion of physical education from a core subject. Throughout engaging in the PEP-talk, teachers were empowered to challenge to their marginal positions in schools and to produce change in their spaces over the course of the PEP year along with support of their peers. This study recommended this PEP-talk format of PD initiative but not as a unique experience but as an affiliated experience with other types of PD experiences.

Responding to the manuscript (Ward & O’Sullivan, 2006) focusing on the professional development in urban schools, Tozer and Horsley (2006) supported the fact
that the infrastructural support to develop the effective professional learning communities for physical educators in urban schools through the PEP grants could contribute to development of high-quality instruction to educate children well. To advance beyond the micro-level of initiative, they suggested development of three themes of activities such as vision, research, and advocacy to strengthen physical education given the macro-level of conditions that “squeeze the physical education curriculum” (Tozer & Horsley, 2006. p. 455). Aligned with their commitment, possibility of the macro-level of initiative was already demonstrated in Ward and his colleagues (1999a)’s project that led district level of reform project, called as Saber-Tooth Project’ for physical education curriculum. This project may be a successful example that our physical education professions could contribute to successful reforms in physical education.

This focus of this study was not to examine the exact impact of PD on teachers’ teaching practice in schools. However, based on teacher’s observed teaching practices, the teachers’ learning to teach in the PD phase (Feiman-Nemser, 2001) were discussed to identify their learning opportunities and materials that affected the teachers’ teaching practices.

Theoretical Framework: Situated Learning

Teachers’ learning processes within a given context that dominates their teaching practices was formulated through exploiting a situated learning framework in this study. As a strand of the social theory of learning, situated learning theory proposed by Lave and Wenger (1991) starts with the assumption that learning and forming who we are occur in the process of engagement in social practice in a social settings. In contrast to classroom learning activities that involve abstract knowledge that is out of context,
situated learning theory accepts the fact that knowledge is socially constructed and learning takes place within the instructional context integrated with the activity and the culture where it occurs. The focus of situated learning theory, therefore, is “rather than asking what kind of cognitive processes and conceptual structures are involved, they ask what kinds of social engagements provide the proper context for learning to take place” (Lave & Wenger, 1991, p. 14).

Situated learning theory adopts a relational view to understand the learning process. Learning concerns the whole person engaging in the world and the relations among people in activities that are within and arising from the socially and culturally structured world. However, instead of adopting learning by doing or experiential learning, social participation and interaction in social practice is identified as a fundamental form of learning (Lave & Wenger, 1991). From the situated learning theory perspective, participation implies not just “local events of engagement in certain activities with certain people, but a more encompassing process of being active participants in the practices of social communities and constructing identities in relation to these communities” (Wenger, 1998, p. 4). Thus, an increase of participation in the community of practice is associated with learning and knowing (Lave & Wenger, 1991). Moreover, the concept of ‘situatedness’ is identified to describe that learning occurs within a given particular sets of circumstances, time, and space (Kirk & Macdonald, 1998; Lave & Wenger, 1991).

Lave and Wenger (1991) explain the meaning of learning specifically as “the process of becoming a full participant in a socio-cultural practice” (p. 29), which is called the ‘legitimate peripheral participation’ in the community of practice. When newcomers
enter the existing community, they engage in peripheral participation in which they are “about being located in the social world” (Lave & Wenger, 1991; p. 36). As the newcomers acquire mastery knowledge and skills through direct involvement in the social-cultural practices of community, they become part of a community of practice and engage in legitimate peripheral participation in which learning is considered an “integral constituent” of generative social practice in the live-in-world” (Lave & Wenger, 1991, p. 35). With respect to the process of transforming from newcomers to full participants, Lave and Wenger (1991) comment, “the purpose is not to learn from talk as a substitute for legitimate peripheral participation; it is to learn to talk as a key to legitimate peripheral participation” (p. 108, 9).

Being legitimate peripheral participants is connected to production, transformation, and changing identities within the community of practice. Identities of the participants are constituted through “long-term living relations between persons and their place and participation in communities of practice” (Lave & Wenger, 1991, p. 53). Change of identities in the process of becoming full participants from newcomers occurs through engaging in persistent participation in a community of practice. Community of practice, which involves learning, is considered everywhere we are involved. However, the characteristics of community of practice vary and are distinct by several issues such as the interest of the individual and members of the community of practice (Lave & Wenger, 1991). Wenger (1998) defines the community of practice with respect to three dimensions: joint enterprise, mutual engagement, and shared repertoire. Joint enterprise constitutes some particular area of knowledge and activity identified and negotiated by members of the community. Functions of the communities of practice are dependent
upon the mutual engagement of members associated with a social entity. Moreover, the community of practice is characterized by communal resources (e.g., routines, sensibilities, vocabulary, styles) and is developed over time by members.

The situated learning theory framework was adopted to examine teacher’s learning process in general education area. For example, Flores (2007) explored the process of development of new teachers’ identities, images of practices, and practices in urban schools where existed contradictory influences of their teacher preparation for social justice. The new teachers’ experiences with experienced teachers within school settings (culture) were elaborated through the situated learning theory of “Legitimate Peripheral Participation” (Lave & Wenger, 1999) framework. Although the new teachers experienced success (e.g., resisting school culture and teaching for all students’ success) and struggles (e.g., isolation) with contradiction in learning for social justice between two professional communities (university and situated schools) and tensions with experienced practitioners in schools. The study highlighted the need of distributed knowledge and expertise to achieve success in a learning community (Wenger, McDermottee, & Snyder, 2002) and teachers’ personal energy and efficacy to improve their quality for better student learning.

Butler, Lauscher, Jarvis-Selinger, and Beckingham (2004) developed and provided collaborative model of professional development initiate, which was developed by applying situated learning in a community of practice. The professional development model was designed to develop teachers’ “knowledgeable skills” and to reconstruct professional knowledge to change their practices through engaging in a temporary community of practice. This study valued community of practice framework (Lave &
Wenger, 1991) based on the teachers’ experiences of benefits from participating in collaborative learning community in terms of sharing ideas and challenges with colleagues.

In the physical education area, the situated learning theory has recently been introduced as a theoretical framework within sport pedagogy area related to Sport Education (Kirk & Kinchin, 2003) and Teaching Games For Understanding (TGFU: Greeno, 1997; Kirk and McPhail, 2002). Although the situated learning theory is rarely implemented into other than those areas within the physical education literature, this study adopted it to understand teachers’ learning within their given social and cultural context. Therefore, from the situated learning theory perspective, this study conceptualized teachers’ learning process both within and out of their school and/or class settings to examine how they influence and contribute to the shaping of their current teaching practices as shown in their instructional units.
CHAPTER 3

METHODOLOGY

The purposes of this study were to understand how teaching practices develop and provide valuable insight into why teachers choose these practices, and how they come to learn them. Specifically, the study intended to describe teaching practices of physical educators, identify why and how teachers choose specific practices in their context, and identify how teachers have come to learn these practices. Situated learning theory (Lave & Wenger, 1990) described in chapter two guided this study as the theoretical framework. Moreover, in order to fully describe teachers’ learning and teaching, mixed methods design was used for this study. This chapter begins with a description of the mixed methodology and then outlines study design, participants, data collection procedures, data analysis, inference, and quality of inference.

Mixed Methodology

This study was both confirmative and exploratory in nature seeking to capture and understand the teaching profile of teachers in their given contextual environment, and learning experiences that affect their teaching profiles. A mixed methods research paradigm was used to obtain information associated with typical teaching practices of
teachers and the contextual influence on their teaching practices. Creswell, Plano Clark, Gutmann, and Hanson (2003) defined mixed methods study as follows:

A mixed methods study involves the collection or analysis of both quantitative and/or qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority, and involve the integration of the data at one or more stages in the process of research (p. 212).

The field of mixed methods has emerged and developed as a methodological orientation since the 1980s following the paradigm wars and the incompatibility thesis (Tashakkori & Teddlie, 2003; Teddlie & Tashakkori, 2003). The paradigm wars occurred based on the incompatibility thesis (Howe, 1988) which states that quantitative and qualitative methods cannot be mixed because of “incompatibility of the paradigms underlying the methods” (Teddlie & Tashakkori, p. 7, 2003). However, mixed methods were introduced as a way to reach triangulation by using multiple data sources (data triangulation) and multiple methods (methodological triangulation) (Denzin, 1978). Given this face, mixed methods have gained attention as a distinct orientation from those of quantitative and qualitative methods.

According to the historical analysis of the methodological movement, all three methodological orientations (e.g., qualitative, quantitative, and mixed methods) are adopted and evolved simultaneously throughout the social and behavioral sciences across the historical period of time (Teddle & Tashakkori, 2003). Since 1990, the emergence of the compatibility thesis has begun and even allowed the qualitative research movement toward applicability of multiple paradigms to qualitative research. Moreover, several seminal works have been conducted which have established mixed methods as a separate
field (Creswell, Clark, Gutmann, & Hanson, 2003; Kevinson & Onwuegbuzie, 2004; Tashakkori & Teddlie, 1998, 2003). For example, the publication of the *Handbook of Mixed Methods in Social and Behavioral Research* (Tashakkori & Teddlie, 2003) encompasses several valuable meanings in the area of mixed methods, which is just entering “adolescence” in its development (Teddlie & Tashakkori, p. 3, 2003). The publication of the handbook provided strong rationales along with specific examples of how mixed methods research could be considered as a distinct third methodological movement in the social and behavioral sciences. It appears that the mixed methods approach has “its own nomenclature, paradigm orientations, designs, and practices that are different from the other two movements” (Tashakkori & Teddlie, p. 762, 2003). In addition, presenting and discussing unsolved issues from different points of view in the handbook contribute to development of a more comprehensive and systematic framework for mixed methods research. Specifically, the editors of the handbook, Tashakkori and Teddlie (2003), attempt to propose consistency regarding the unresolved issues and controversies in the use of mixed methods.

The needs for mixed methods research is supported by the belief that the ultimate goal of any research is to provide better answers to the questions of the research (Kevinson & Onwuegbuzie, 2004). First of all, by using both quantitative and qualitative methods to collect data, mixed methods research can answer both confirmatory and exploratory questions simultaneously, which is impossible within the other methodological orientations. Secondly, the inferences of the mixed methods research made by a variety of data sources and analyses are stronger. Different types of data (i.e., quantitative and qualitative data) can confirm the results from the analysis of one another.
Finally, mixed methods can approach the questions from divergent views by collecting and analyzing various data sources of different orientations.

Despite the usefulness of the mixed methods, mixed methodologists are continuously faced with paradigmatic issues from the incompatibility thesis to link epistemology and method. Researchers are also questioned and often must discuss how paradigms are to be used in the development of the field of mixed methods. The paradigms often advocated in the mixed methods are pragmatism (Kevinson & Onwuegbuzie, 2004; Maxcy, 2003; Tashakkori & Teddlie, 2003) and the transformative-emancipatory paradigm, which are employed as an alternative world view for use of mixed methods (Tashakkori & Teddlie, 2003). In general, both paradigms support the use of qualitative and quantitative research methods in the same research. The difference between pragmatism and transformative-emancipatory is the role of values in research (Tashakkori & Teddlie, 2003). Pragmatists devote their value to the researcher throughout the process of the selection of research topics and the interpretation of the results. The topics selected by a pragmatist are chosen by the researcher and focus on aspects of social relevance to the entire population (Maxcy, 2003). In contrast, the goals of research within the transformative-emancipatory tradition are to create a more just and democratic society (Mertens, 2003). Moreover, the transformative-emancipatory paradigm purposes to help oppressed groups within society (Mertens, 2003). Although there are still different positions toward paradigmatic issues among the mixed-methods researchers, these two traditions, pragmatism and transformative-emancipatory paradigm, are considered the most popular paradigms in the mixed method research as a counterargument to the incompatibility thesis (Tashakkori & Teddlie, 2003).
For the purpose of this study, pragmatism paradigm of mixed model design was utilized to define the focus of this study, gather and analyze data, and draw multiple inferences from these data. The following section is included in this document to provide a clear description of mixed model designs and to provide clear distinction between the mixed model design and other multiple method classifications. Tashakkori and Teddlie (2003) classified and presented a typology of mixed methods designs based on the literature. First, they distinguished between multimethod designs and mixed methods designs within multiple method designs (Table 3.1). Multimethod designs use “more than one research method or data collection procedure that are restricted to a single ‘worldview’” (Tashakkori & Teddlie, p. 685, 2003). On the other hand, mixed methods designs use “both quantitative and qualitative research methods or data collection/analysis procedures” (Tashakkori & Teddlie, p. 683, 2003). Mixed methods designs are dependent upon the stage of integration dimension. Mixed method designs employ quantitative and qualitative approaches in the methods stage of a study, whereby mixed model designs mix two approaches in several stages of a study (Kevinson & Onwuegbuzie, 2004). In mixed method designs, two types of data (qualitative and quantitative) are collected and analyzed to answer one type of question. In contrast, mixed model designs employ both types of questions, both types of data and analysis, and both types of inferences in a study. Thus, the term ‘mixed methods (plural) designs’ has been suggested “as a cover term for mixed method and mixed model research” (Teddlie & Tashakkori, p. 11, 2003).

Although there are numerous designs used in mixed methods research (multi-strand), mixed methods designs have been most commonly employed (Tashakkori &
Mixed methods designs are classified by two dimensions: stage of integration dimension as described above (i.e., mixed method designs and mixed model designs) and procedures for the integration dimension, which demonstrates possible procedures for mixing methods (i.e., concurrent, sequential, and conversion procedures). In the concurrent mixed design, two planned and independent procedures are employed simultaneously or with a time lag to answer multiple questions including those that are quantitative and qualitative nature. Sequential mixed design employs two sequential procedures in which the second phase emerges responding to the findings and/or inferences of the first phase. Lastly, multi-strand conversion mixed designs include two strands which consist of collecting one type of data (qualitative or quantitative) by use of one method and converting the data from qualitative to quantitative or from quantitative to qualitative. Taken together, the same procedures are used for mixed method and mixed model studies, but the stages of integration differ. In mixed method studies, integration occurs within a single stage. In mixed model studies, integration can occur in multiple stages (Table 3.2).
Multiple Method Designs

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<th>Mixed methods designs</th>
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<tbody>
<tr>
<td>* Restricted to one ‘world view’</td>
<td>* Mixed qualitative and quantitative approaches</td>
</tr>
</tbody>
</table>

- **Multi-method quantitative designs**
  - One type of question
  - Use more than one quantitative research methods or data collection procedure

- **Multi-method qualitative design**
  - One type of question
  - Use more than one qualitative research methods or data collection procedure

- **Mixed method designs**
  - One type of paradigm (question)
  - Qualitative and Quantitative data

- **Mixed model designs**
  - Qualitative and Quantitative paradigm (questions)
  - Quantitative and Qualitative data/ analysis/ inferences

Table 3.1: Classification of multiple methods designs.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Mixed Method Designs</th>
<th>Mixed Model Designs</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Concurrent: Simultaneous procedures</td>
<td>Single Stage of Integration</td>
<td>Multiple Stages of Integration</td>
</tr>
<tr>
<td>* Sequential: Sequential procedures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Multistrand conversion of data</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3.2: A two-dimensional framework for conceptualizing multi-strand mixed designs (adapted from Tashakkori & Teddlie, p. 687, 2003).
Based on understanding of diverse mixed methods designs, five general principles of mixed methods research were developed and are as follows (Tashakkori & Teddlie, 2003, p. 696):

1. Mixing may occur in any stage of a study
2. Research design determines data collection procedures in mixed methods but is also independent of those procedures.
3. Data collection procedures are independent of data analysis techniques (e.g., data collected through a particular procedure (e.g., observation) may be analyzed either or both of two ways, qualitative and quantitative).
4. If the data do not represent the theoretical phenomena or the attributes under study, then nothing else in the design of the study matters.
5. Data quality is a necessary condition for inference quality but is not a sufficient condition for it.

Several mixed methods terms associated with the results (e.g., inference, inference quality, and inference transferability) are being utilized to distinguish them from separate qualitative and quantitative orientations and prevent the overuse or misuse of the existent qualitative and quantitative terms (Tashakkori & Teddlie, 2003). The final outcome of a mixed methods study is called ‘inference’, which “refers to the inductively or deductively derived conclusions from a study” and can be accepted within qualitative and quantitative orientations (Tashakkori & Teddlie, 2003, p. 35). Specifically, it consists of the explanation, understanding, and integration of people, events, and relationships. Dependent upon the designs, meta-inferences are developed by 1) following each of initial inference made by either qualitative or quantitative (sequential designs), and 2) by
combining/contrasting qualitative and qualitative initial inference to provide whole picture of a phenomenon (concurrent and conversion designs).

The term ‘inference quality’ as the mixed methods term, which is also called ‘legitimation’ (Onwuegbuzie & Teddlie, 2003) or ‘inferential consistency audit’ (Krathwohl, 1993), is proposed to replace internal validity (quantitative term) and credibility (qualitative term) (Teddlie & Tashakkori, 2003). Inference quality represents the accuracy of inductively and deductively derived conclusions from a study and is determined within two aspects: design quality, which is an evaluation of the methodological rigor, and interpretive rigor, which is the evaluation of the accuracy or authenticity of the conclusions (Teddlie & Tashakkori, 2003). The evaluation and improvement of inferences are suggested in four evaluation dimensions: 1) consistency within the design of the study (within design consistency), 2) consistency of multiple conclusions with each other between inductively and deductively derived conclusions (conceptual consistency), 3) consistency of interpretations across people (interpretive agreement or consistency), and 4) distinctiveness of the interpretations from other plausible ones (interpretive distinctness) (Teddlie & Tashakkori, 2003). The examples of strategies identified to improve the quality of inferences that are applied to both qualitative and some quantitative designs are audit trail, peer debriefing, method and investigator triangulation, prolonged engagement, negative case analysis, and thick description. Moreover, distinction between inference quality and data quality, which affects the quality of inference, is identified. The data quality deals with two issues associated with consistency: consistency of the same measurement or observation procedure (validity or trustworthiness) across people and consistency between different
procedures for measurement and/or observation of the same phenomenon or attribute (reliability).

In order to refer to the quantitative term ‘external validity’ and the qualitative term ‘transferability’, the term ‘inference transferability’ is proposed for appropriate use in both quantitative and qualitative contexts (Tashakkori & Teddlie, 2003). Inference transferability includes transferability to contexts (ecological transferability), to individuals/groups or entities (population transferability), to other time periods (temporal transferability), and to other modes/methods of measuring/observing the variables/behaviors (operational transferability).

Study Design

Concurrent mixed model design, which involves the simultaneous use of qualitative and quantitative research, was used to identify profiles of teaching practice in the ALT-PE and CLASS for teachers in a given contextual environment. The intent of this study was to provide both outcome based understanding of teaching behaviors and a rich and thick description of teaching behaviors associated with contextual influences. A concurrent mixed model design was deemed useful in this study because it allows different types of data and analysis to be used to answer the different types of questions. The specific way of integrating quantitative and qualitative approaches for this study under concurrent mixed model design is presented in Table 3.2. A descriptive quantitative approach was used to identify the teaching profile of teachers by using two observational instruments, Academic Learning Time-Physical Education (ALT-PE, Siedentop, Tousignant, & Parker, 1982) and Classroom Assessment Scoring System (CLASS, Pianta, La Paro, & Hamre, 2005). Moreover, a case study of six elementary
physical educators across varying degrees of teaching experiences was used to provide “particularistic, descriptive, and heuristic” (Merriam, 1998, p. 29) information on teaching practices associated with contextual influences.

Figure 3.1. Graphic Presentation of Concurrent Mixed Model Design (Adapted from Tashakkori & Teddlie, 2003, p. 688).
Figure 3.2: Integration of quantitative and qualitative approaches.

Participants

The intent of this study was to identify profiles of teaching practices within different contextual environments. A purposeful sampling method, which allows the selection of “information rich cases whose study will illuminate the questions under study” (Patton, 1990, p. 169) was used to find teachers who fit this study. The criteria for selecting participants of this study were considered in three aspects: teaching grade (elementary), contextual environment of schools, and teaching content. First, this study focused on elementary school physical education teachers. Secondly, contextual
difference between teachers was considered to select the participants for this study.
Understanding the contextual influence on their teaching practices was accomplished by comparing and contrasting information gleaned from teachers from an urban setting and others from nonurban settings. Lastly, this study focused on teaching practices in two separate units: one invasion type of sport content unit and a dance unit. Although dance is identified and recommended as a subject area, not only for elementary but also secondary physical education classes within the Association for Sport and Physical Education (NASPE) Standards for Physical Education area, physical educators have reported a lack of learning opportunities in this area in their teacher preparation programs (Mehrhof & Ermler, 1992). Moreover, teachers express fears of teaching dance in their physical education classes (Newnam, 2002). Considering the purpose of this study, studying a dance unit provided opportunities for an in-depth understanding of how the teachers established their teaching practices within a specific content area and what learning experiences across their teaching career affected the teaching practices. For this reason, the teaching of dance was a focus of one instructional unit for this study.

Physical education teachers in the Columbus area including both urban and suburban districts who were in different career stages were identified by referrals and solicited for their participation in this study. A total of six elementary physical education teachers from different schools within different contextual environments, who fit the criteria of participant selection for this study, were selected from those willing to participate in this study. Three teachers worked in the urban district schools and the others were from suburban districts. In addition, all teachers had different years of teaching experiences between 6 and 24 years. Overview of the teachers’ demographic
data was presented in Table 3.3 and more detailed description of each participant will be provided in chapter 4 along with description of units taught and school context.

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Gender</th>
<th>Years of Teaching</th>
<th>School Context</th>
<th>Units Taught</th>
</tr>
</thead>
<tbody>
<tr>
<td>Susan</td>
<td>Female</td>
<td>20 yrs</td>
<td>Urban</td>
<td>- Dance</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Soccer</td>
</tr>
<tr>
<td>Amie</td>
<td>Female</td>
<td>6 yrs</td>
<td>Urban</td>
<td>- Dance</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Team Handball</td>
</tr>
<tr>
<td>Elis</td>
<td>Female</td>
<td>21 yrs</td>
<td>Urban</td>
<td>- Dance</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Basketball</td>
</tr>
<tr>
<td>Lori</td>
<td>Female</td>
<td>10 yrs</td>
<td>Suburban</td>
<td>- Dance</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Foot Dribble</td>
</tr>
<tr>
<td>Kevin</td>
<td>Male</td>
<td>24 yrs</td>
<td>Suburban</td>
<td>- Dance</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Floor Hockey</td>
</tr>
<tr>
<td>Bob</td>
<td>Male</td>
<td>16 yrs</td>
<td>Suburban</td>
<td>- Dance</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Floor Hockey</td>
</tr>
</tbody>
</table>

Table 3.3: Overview of demographic data
Figure 3.3: Chronology of data collection.
Data Collection Procedures

Figure 3.3 presents the chronology of data collection procedure in this study for each teacher. Data collection occurred from October in 2006 to March in 2007. Data was collected within two units per participant including an invasion game unit and a dance unit. Collection of both qualitative and quantitative data occurred simultaneously in each of the units and the same procedures for one unit were repeated in the other unit.

Before starting collecting data, IRB has been submitted and approved at the Ohio State University and the teachers’ district and principal permissions were obtained to conduct within the teacher’s school setting. Each teacher was also requested to complete a participant information form (see Appendix A) which asked the teacher’s background (e.g., teaching and learning experience) and school context. After these, the first step was a pre-unit interview on a semi-structured format to identify teachers’ competence and background regarding the teaching unit. The unit was observed by taking field notes and videotaped in order to complete the coding using the observational instruments, CLASS (Pianta, La Paro, & Hamre, 2005) and ALT-PE, which were utilized to determine the profile of teaching practices of each teacher. Based on the observation of lessons, informal and/or formal post-lesson interviews were conducted between lessons to collect information how and why the teacher chose the observed teaching practices and how they came to learn them. Post-unit interviews were conducted to discuss the teachers’ teaching practices associated with their contextual environment. After two units were completed, each teacher discussed similarity(ies) and/or difference(s) in their teaching and learning within their two units during a final-two-units interview.
Data Collection

This study collected two types of data (qualitative and quantitative) to answer two paradigms of research questions (qualitative and quantitative). Qualitative data consisted of interview transcripts and field notes taken through participant observation. Two observational instruments of data were collected through watching videotaped lessons to determine teaching profiles as quantitative data. Data were collected from a total of 45 lessons across six teachers. Each unit consisted of different number of lessons for each teacher between two lessons and six lessons. Physical education class period and allocation time per week were different between teachers, such as between 30-45 minutes of class period and either one or two physical education classes in a week. This study collected data from the same class across units for each teacher.

Qualitative Data

My lens as a researcher

Since I started my doctoral program at the Ohio State University, I had been involved in several opportunities working with teachers in diverse school context. I provided dance workshops for Physical Education for Progress (PEP) teachers with my advisor and for elementary physical educators in Columbus Public schools. I had conducted a research study with several of PEP teachers to examine their learning from a PEP workshop and teaching the learning content in their schools, in which I experienced a direct interaction with teachers and developed understanding of urban school contexts through school observation and interviews. In addition, my time as an university supervisor for student teachers who were placed in several different context of schools allowed seeing a variety of teaching practices including managerial systems and
instructional styles within given school context. Throughout these experiences, I could develop knowledge on effective teaching and a deep understanding of macro- and micro-level of American educational trends.

Majority of teachers in this study had previous experiences involved in this type of research studies conducted by faculty and graduate students at the Ohio State University so that they had known overall research procedures. They had easily accepted and led students to accept my presence within their classroom. For the teachers with no research participation experience, I had engaged in more personal interaction with teachers and students to build rapport and make them comfortable with my presence in their classroom.

One of my biases that I worked to minimize was my perception of teacher’s limited and misaligned adoption of their learning from professional development (PD) workshops into their teaching, which was developed through literature review and my previous research. To export inclusive data from the teachers, I valued teachers’ commitment on their use of their learning from PD workshops and attempted to reveal the process of developing their own teaching practices from their learning from PD through interview. I focused on obtaining data on the teacher’s teaching resources and the process of utilizing the resources to understand how they developed their competences in their teaching practices, but not focused on understanding how teachers delivered their learning from a specific professional development workshop. Given the fact, situated learning theory was employed as a lens to keep me focused on the teachers’ learning to teach and teaching practices relevant to their situated context.
I also worked hard to minimize my perception on the teachers developed through my previous experiences with the teachers and references from outsider. Several of teachers in this study had known to me before this study occurred. I kept attempting to reflect on what I observed in their classes and understood from the interviews relative to the focus of this study through revisit the research questions to answer.

Field notes

Field notes were taken through the role of observer as participant in which “the researcher remains primarily an observer but has some interaction with study participants” (Glesne, 1998, p. 44). Two units of all lessons, including a dance unit and an invasion unit, taught by each participant were observed (n=45). The observation occurred in the same class throughout two units in each teacher during the whole class time between 30 and 45 minutes, once a week or twice a week. Each lesson also was videotaped by use of a digital camcorder and cordless microphone worn by the teacher in order to increase “the density of data” (Glesne, 1998, p. 57) and possess “permanent” data (Glesne, 1998, p. 57). Field notes were mostly collected during the observation in each lesson but also by viewing the videotaped lessons. The focus of field notes was to describe teaching behaviors/practices associated with managerial and instructional tasks that occurred during the lesson.

Interview

Interviews were conducted across the data collection procedures at pre-unit, between-lesson, post-unit, and final-two-units (See Appendix D for interview questions). Each interview was scheduled in less than 30 minute time blocks before or after a lesson dependent upon teachers’ availability. The interviews took place in the teacher’s office
and/or at the corner of gym where teachers felt comfortable with and interruption during the interview could be minimal. Topics of interview questions were emerged from the field notes relative to particular teaching practices observed during the class observation associated with research questions. Interview questions were open-ended and semi-structured.

The pre-unit interview was conducted before the first lesson of the unit focused on obtaining information on the teachers’ competence level and background in teaching the unit. Between-lesson interviews were conducted throughout the unit and focused on the teaching practices that were observed during the lessons. The actual number and length of, and questions in, between-lesson interviews for each teacher were varied and determined by data saturation based on field observation. Post-unit and final-two-units interviews solicited teacher’s interpretation of his/her teaching practices within a given contextual environment. These interviews were conducted after each unit and two-unit were finished. All interviews were recorded and transcribed to analyze the data.

Quantitative data

ALT-PE instrument

The Academic Learning Time-Physical Education (ALT-PE) instrument was another observational instrument that was used to describe profiles of teaching practices. Following the emphasis on academic learning time (ALT) as a positive predictor of student achievement in general education, Siedentop and his colleagues have developed ALT-PE instrument to adopt a concept of ALT in physical education (Siedentop, Birdwell, & Metzler, 1979; Siedentop, Tousignant, & Parker, 1982). Since then, ALT-PE has been validated and utilized as a strong proxy measure for student achievement in
physical education where no standardized test exists (Siedentop, 2002; Silverman, 1985; Silverman, Devillier, & Ramirez, 1991).

To code ALT-PE requires two levels of decision making that consists of the first decision on the context level and the second level of learner involvement decisions. For the first context level of decision, the class/squad is observed as a whole and classified either one of three major subdivisions: general content, subject matter (SM) knowledge content, and SM motor content. Each of these subdivisions includes categories, which specifically describe the context within which student behavior is occurring (see Table 3.4). The symbol of the categories is utilized to code on ALT-PE instrument.

<table>
<thead>
<tr>
<th>Level #1: Context Level Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Content</strong></td>
</tr>
<tr>
<td>- Transition (T)</td>
</tr>
<tr>
<td>- Management (M)</td>
</tr>
<tr>
<td>- Break (B)</td>
</tr>
<tr>
<td>- Warm-up (WU)</td>
</tr>
<tr>
<td><strong>Subject Matter Content</strong></td>
</tr>
<tr>
<td>- Technique (TN)</td>
</tr>
<tr>
<td>- Strategy (ST)</td>
</tr>
<tr>
<td>- Rules (R)</td>
</tr>
<tr>
<td>- Social behavior (SB)</td>
</tr>
<tr>
<td>- Background (BK)</td>
</tr>
<tr>
<td><strong>Motor</strong></td>
</tr>
<tr>
<td>- Skill practice (P)</td>
</tr>
<tr>
<td>- Scrimmage/ routine (S)</td>
</tr>
<tr>
<td>- Game (G)</td>
</tr>
<tr>
<td>- Fitness (F)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level #2: Learner Involvement Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non Motor Engaged</strong></td>
</tr>
<tr>
<td>- Interim (I)</td>
</tr>
<tr>
<td>- Waiting (W)</td>
</tr>
<tr>
<td>- Off-task (OF)</td>
</tr>
<tr>
<td>- On-task (ON)</td>
</tr>
<tr>
<td>- Cognitive (C)</td>
</tr>
<tr>
<td><strong>Motor Engaged</strong></td>
</tr>
<tr>
<td>- Motor appropriate (MA)</td>
</tr>
<tr>
<td>- Motor inappropriate (MI)</td>
</tr>
<tr>
<td>- Supporting (S)</td>
</tr>
</tbody>
</table>

Table 3.4: Two levels of ALT-PE decision categories.

The second level of decision focusing on the learner involvement is made by observing individual students. The learner involvement is classified into either one of
two subdivisions, ‘not motor engaged’ or ‘motor engaged’ (see Table 3.4). Five categories are identified to describe types of learners’ ‘not motor engaged’ involvement: interim, waiting, off-task, on-task, and cognitive. Moreover, motor engaged involvement of the learner is categorized by either one of three categories: motor appropriate, motor inappropriate, and supporting.

For this study, ALT-PE was measured by using interval recording (see Appendix B: ALT-PE coding sheet). Interval recording is considered as “a sampling process in that samples of behavior are collected periodically” (Siedentop, Tousignant, & Parker, 1982, p. 16). This technique was chosen because of benefit to check reliability between independent observers. An observe-record format of interval recording technique was utilized to observe the subject in one interval and to record the observation in the next interval. An interval length for this study was six seconds to collect more reliable data.

Before class started, teachers were asked to identify mid-level of skilled girl and boy students. Different two target students, one girl and one boy, were randomly selected in each lesson among the list of students informed by teachers to code learner involvement level of data in the ALT-PE. Reliability of the observers was established prior to data collection and checked occasionally to ensure valid use of the original definitions of ALT-PE instrument between each other. Moreover, the degree of agreement between two independent observers was calculated by using ALT-PE coded by watching videotaped classes.

**CLASS instrument**

An observational instrument, Classroom Assessment Scoring System (CLASS), was utilized to code teaching behaviors as quantitative data. The CLASS observational
instrument has been designed and developed to “assess classroom quality” (Pianta, La Paro, & Hamre, 2005, p. 1.) and is based on development theory and research exploring interactions of teachers and students. According to Pianta et al. (2005), classroom quality is determined and assessed by “the quality of teachers’ social and instructional interactions with children as well as the intentionality and productivity evident in classroom settings” (p. 1) relevant to student outcomes. The CLASS instrument was created and validated as a common metric or vocabulary that describes various aspects of classroom quality and constructs across the early elementary grades.

Four domains constitute the CLASS instrument: Emotional Support, Classroom Management, Instructional Support, and Student Outcomes. In the CLASS approach, the term ‘classroom quality’ which is considered interchangeable with ‘interactions between teachers and children’ is defined by two domains; emotional support and instructional support. Moreover, CLASS instrument examines student outcomes as indications of quality of classroom through scoring student engagement.

Each domain consists of five scales by which classroom quality is measured in the CLASS observation instrument. Each scale of the CLASS instrument that constitutes classroom quality relevant to student achievement was derived from the scales used in extensive large-scale observation studies conducted within child care and elementary school settings. Constructs of each scale are identified and each of the construct indicators at the low, mid, and high range is described to guide judgment on scoring (See Appendix C). For example, Emotional Support in a high quality classroom features caring and supportive relationships between teachers and children conducted by sensitive teachers. Five scales are identified and coded under Emotional Support in the CLASS:
positive climate, negative climate, teacher sensitivity, regard for student perspectives, and behavior management. Positive climate is also determined by five constructs: relationships (e.g., warmth of the teacher’s interactions with students), positive affect (e.g., display of teacher’s enjoyment), respect for the students, social conversation between teachers and students, and positive peer interactions (see Table 3.5).

The domain of Instructional Support models highly skilled teachers who provide additional explanation, ideas, and feedback to students based on their monitoring of student’s performance. It consists of five scales in the CLASS instrument: productivity, concept development, instructional learning formats, and language modeling. Several constructs relevant to each of the scales are also identified to guide scoring (See Table 3.6). For example, the productivity scale is related to concerns of increase of learning time regardless of the quality of instruction or activities provided. Six constructs are considered to score this scale: provision of activities, which is related to providing clear activities for students and maximum learning time, (classroom) routines for smooth progress, quick and efficient transition, teacher’s preparation for activities and lessons, no allowance of disruption/ distractions, and minimum time spent on managerial tasks.

Though the CLASS observation instrument focuses on five scales under the Instructional Support domain, language modeling will not coded for this study because of a lack of correlation to student achievement.
<table>
<thead>
<tr>
<th>Domain</th>
<th>Scales</th>
<th>Constructs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom Quality</td>
<td>Positive Climate</td>
<td>- Relationships</td>
</tr>
<tr>
<td>Emotional Support</td>
<td>- Positive affect</td>
<td>- Respect</td>
</tr>
<tr>
<td></td>
<td>- Respect</td>
<td>- Social conversation</td>
</tr>
<tr>
<td></td>
<td>- Positive peer interactions</td>
<td>- Positive peer interactions</td>
</tr>
<tr>
<td></td>
<td>- Negative Climate</td>
<td>- Negative affect</td>
</tr>
<tr>
<td></td>
<td>- Negative affect</td>
<td>- Punitive control</td>
</tr>
<tr>
<td></td>
<td>- Sarcasm/disrespect</td>
<td>- Sarcasm/disrespect</td>
</tr>
<tr>
<td></td>
<td>- Negativity not connected events</td>
<td>- Negativity escalates</td>
</tr>
<tr>
<td></td>
<td>- Negativity escalates</td>
<td>- Negativity not connected events</td>
</tr>
<tr>
<td></td>
<td>- Negative peer interactions</td>
<td>- Negative peer interactions</td>
</tr>
<tr>
<td></td>
<td>- Severe negativity</td>
<td></td>
</tr>
<tr>
<td>Teacher Sensitivity</td>
<td>- Responsive</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Notices when students need assistance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Appropriate activities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Address problems</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Scaffolding</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Student seek support</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Student comfort</td>
<td></td>
</tr>
<tr>
<td>Regard for Student Perspectives</td>
<td>- Emphasis on student perspective</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Flexibility</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Support of autonomy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Student talk</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Student responsibility</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Peer interaction encouraged</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Restriction of movement</td>
<td></td>
</tr>
<tr>
<td>Behavior Management</td>
<td>- Proactive</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Monitoring</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Redirecting misbehavior</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Clear behavioral expectations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Loss of time</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Effective praise</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Student misbehavior</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Resolving disputes</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.5: Overview of CLASS domain: ‘Emotional Support’ (adapted from Pianta, La Paro, & Hamre, 2005).
| Classroom Quality | Instructional Support | Productivity | - Provision of activities  
|                   |                      |              | - Routines  
|                   |                      |              | - Transitions  
|                   |                      |              | - Preparation  
|                   |                      |              | - Disruptions  
|                   |                      |              | - Managerial tasks  
| Concept Development |                      |              | - Higher order thinking & cognition vs. rote learning  
|                   |                      |              | - Analysis and reasoning  
|                   |                      |              | - Hypothesis testing  
|                   |                      |              | - Integration with previous concept  
|                   |                      |              | - Connections to the real world  
| Instructional Learning Formats | | | - Utilization of materials  
|                   |                      |              | - Modalities  
|                   |                      |              | - Teacher facilitation  
|                   |                      |              | - Student engagement  
| Quality of Feedback | | | - Process feedback  
|                   |                      |              | - Feedback loops  
|                   |                      |              | - Specific feedback  
|                   |                      |              | - Providing hints  

Table 3.6: Overview of CLASS Domain: ‘Instructional Support’ (adapted from Pianta, La Paro, & Hamre, 2005).

Student Outcomes are determined by student engagement, which consists of two constructs: active vs. passive engagement, and sustained engagement. Active and sustained engagements of students are considered high level of student engagement.

<table>
<thead>
<tr>
<th>Domain</th>
<th>Scales</th>
<th>Constructs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom Quality</td>
<td>Student Outcomes</td>
<td>Student Engagement</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3.7: Overview of CLASS Domain: ‘Student Outcomes’ (adapted from Pianta, La Paro, & Hamre, 2005).
Research behind the CLASS instrument reinforces validity and reliability of the instrument as well as the association between process quality (e.g., emotional and instructional support) within classroom settings and student outcomes. Validity and reliability of two domains (emotional and instructional support) within the CLASS instrument were examined and confirmed by using data from 222 prekindergarten classrooms in 6 states (La Paro, Pianta, & Stuhlman, 2004). The study revealed interrater reliability based on the correlation among the nine factor scores from the CLASS. Moreover, convergent validity of the CLASS instrument was determined through identifying correlation between factor scores from the CLASS and other two measures: the Early Childhood Environment Rating Scale (ECERS; Harms, Clifford, & Cryer, 1998) and the Snapshot (Ritchie, Howes, Kraft-Sayre, & Weiser, 2002).

According to Pianta, Howes, Burchinal, Bryant, Clifford, Early, and Barbarin (2005), classroom quality is accounted for by the contribution of correlation among some predictors such as program and teacher attributes, and child characteristics. Although child characteristics are identified as one of the predictors of classroom quality assessed by the CLASS, high quality classroom environment driven by teachers’ attributes facilitates student achievement and student-teacher relationship (Hamre & Pianta, 2005; Pianta, Howes, Burchinal, Bryant, Clifford, Early, & Barbarin, 2005). Hamre and Pianta (2005) used the CLASS instrument to examine relationship between class quality assessed by two domains of the CLASS, emotional and instructional support, and at-risk first-grade students’ achievement scores and student-teacher relationships. The study found a relationship between high CLASS score of emotional and instructional support and moderating at-risk students’ achievement and strong student-teacher relationships. In
contrast, the at-risk students placed in less supportive classrooms had lower achievement and more conflict relationship with teachers than their low-risk peers. Overall, it is clear that ratings from the CLASS explain classroom quality that is correlated with student achievement and student-teacher relationships. Based on the evidence of research utilizing the CLASS instrument, the CLASS instrument was chosen to code teaching practices within the class settings in elementary physical education.

For coding, each of the scales were rated from 1 (minimally characteristic) to 7 (highly characteristic) based on the degree of presence of construct under the scale. In each observation cycle, the observer was provided 20-minutes to watch and take notes on classroom interaction and 10-minutes for recording the appropriate code. The judgment for rating was dependent upon “the range of, frequency, intention, and emotional tone of interpersonal and individual behavior during the observation time” (Pianta, La Paro, & Hamre, 2005, p 6.). Though the CLASS instrument mainly focuses on teachers, constructs reflecting students’ behaviors target not a single child, but all the children and/or the typical or average child in the class. The construct, ‘positive peer interaction’, within positive climate scale under emotional support domain is one example of this case (see Table 3.6).

Given the high-inference nature of CLASS, efforts to ensure its reliability have been addressed within several areas. First, use of the CLASS is allowed only by those who complete 12-hours of in-depth training and meet reliability criteria on the CLASS for appropriate use to gather and analyze data. Moreover, taking a reliability test at least once a year is recommended to ensure a high degree of reliability. In the case of use of the CLASS for research purposes, “double coding” (Pianta, La Paro, & Hamre, 2005, p
4.) sessions is conducted where two observers code the same classroom segments to check reliability and ensure coding consistency.

Data Analysis

Several data analysis techniques were utilized dependent upon different types of data such as content analysis and constant comparative analysis for qualitative data, and descriptive analysis for CLASS and ALT-PE data. A systematic analysis of the data was conducted through the data collection process.

Qualitative data analysis

Analysis of qualitative data (field notes and interview transcripts) was achieved through content and constant comparison analysis techniques. The qualitative data collection and analysis were coincided to confirm and disconfirm the data and emergent themes. For example, since between-lesson interview questions were developed based on the observation, analysis of field notes was completed to determine the focus of the interviews and the themes emerged from the field notes data were asked during the interview to ensure sufficient data resources. The following section will describe specific analysis procedures of qualitative data: field notes and interviews.

Field notes

The field notes were analyzed through content analysis. Content analysis has been defined as “any technique for making inferences by objectively and systematically identifying specified characteristics of messages” (Holsti, 1969, p. 14). Specifically, it has been defined as a systematic, replicable technique for compressing many words of text into fewer content categories based on explicit rules of coding (Krippendorff, 1980; Weber, 1990). Analyzing the field notes started with coding words, phrases, expressions,
or statements that were mentioned most often in each lessons and that reflected the interest of the research questions (Bazeley, 2003; Stemler, 2001). Those coding was categorized by broad categories associated with instructional and managerial teaching practices to identify particular teaching practices to ask during interview sessions.

**Interviews**

Each interview was audio-taped, transcribed, and analyzed through constant comparative analysis (Glaser & Strauss, 1967). To complete constant comparative analysis for interview data, the process of taking one piece of data (one interview, one statement, one theme) and comparing it with all others that may be similar or different was adopted to conceptualize the possible relationships among and between various pieces of data (Thorne, 2000). Specific interview analysis procedures began with reading and open coding the transcript reflecting on the research questions in each teacher. Themes emerged from each teacher were constantly compared across teachers through which consolidated themes were emerged. The interview transcript and interpretation of the interview data were shared and corroborated with the participants for member check and (investigator) triangulation. Each teacher was involved in the member check process. In addition, peer review and debrief, and negative case analysis was adopted to improve credibility of this study. These will be described in more detail in a later section.

**Quantitative data analysis**

*ALT-PE and CLASS.*

Teaching behaviors of all teachers were coded by using the CLASS and ALT-PE observational instruments. Every single lesson (n=45) taught by each of the teachers across two instructional units were videotaped and coded by trained observer(s) of the
CLASS and ALT-PE instruments. Use of the CLASS instrument is limited to those who completed training sessions and passed reliability test so that no time was devoted to training for CLASS observers. Certified observers including author of this study were engaged in coding and double coding for reliability check of the CLASS data. To train coders including author for ALT-PE instrument, they reviewed coding manual, took test on the manual, viewed videotapes, discussed categories, and practiced coding the videotapes before and during the data collection to maintain high degree of data validity and reliability (at least .90 level of agreement during training session reached).

Descriptive analysis was used for the CLASS and the ALT-PE data. Two phases and one phase of CLASS data set was coded in 45 minutes and 30 minutes of classes, respectively. A total of 70 sets of CLASS data were collected and analyzed in this study. Mean score and variance between the highest and lowest scores were calculated and presented to describe the score gained in each of dimensions and domains within the CLASS instrument across lessons in the unit. The score in the Negative Climate dimension in which lower score represented less negativity in class climate was computed to reverse the low scores in accordance with scores in other dimensions, which earn higher score with high quality of teaching behaviors.

ALT-PE data was also analyzed with descriptive analysis to identify mean percentage of times spent in each of categories and subdivisions at both context level and learner involvement decisions across the teachers in this study. It allowed categorizing and discussing how the class time was spent and what activities students were engaged in. A total of 45 lessons were videotaped and coded. ALT-PE data was organized by ranking the teachers’ units according to the percentage of time spent in the Motor Appropriate
(Ma) category in order to discuss teaching profiles associated with teaching effectiveness. Management (M) category was also used to rank the units and analyze the ALT-PE data. Measures of reliability were conducted through double coding sessions in which a trained observer and trained author viewed and coded the same lesson videotaped, and then percent of agreement and disagreement was calculated to determine inter-observer agreement \( (\text{IOA} = \text{agreements}/[\text{agreements} + \text{disagreements}]) \). Forty percent of lessons \( (n=19) \) were randomly selected to check reliability with trained observers and inter-observer agreement level was .96.

**Meta-Inference**

Since this study adopted a concurrent model design of mixed methods research, a meta-inference phrase, in which obtained initial inferences from the approaches (e.g., qualitative and quantitative) of each strand of research were integrated, was conducted. However, the issue of how to integrate inferences that emerge from both qualitative and quantitative approaches and the role of each is considered one of the difficult tasks in mixed methods research (Bazeley, 2003; Erzberger & Kelle, 2003; Miller, 2003; Teddlie & Tashakkori, 2003). Responding to this, several strategies for integration of inferences are discussed and suggested (Erzberger & Kelle, 2003; Miller, 2003; Onwuegbuzie & Teddlie, 2003). This study followed several stages of data analysis which included the process of conducting both initial and integrated inferences (meta-inference) suggested by Onwuegbuzie and Teddlie (2003). Although the initial inferences were obtained through the analysis process of each qualitative and quantitative approach, the additional stages were utilized as a continuum from the initial inferences to meta-inferences. It, therefore, was necessary to revisit the raw and analyzed data to justify the themes.
identified in this process in order to understand the context of the data and initial inferences.

This study adopted seven stages of mixed methods research data analysis described by Onwuegbuzie and Teddlie (2003) to analyze two types of data in mixed methods research: 1) data reduction, 2) data display, 3) data transformation, 4) data correlation, 5) data consolidation, 6) data comparison, and 7) data integration (See Table 3.8).

<table>
<thead>
<tr>
<th>Stage</th>
<th>Analysis</th>
<th>Purposes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Data Reduction</td>
<td>To reduce data</td>
</tr>
<tr>
<td>2</td>
<td>Data Display</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Data Transformation</td>
<td>To convert data qualitized and/or quantitized</td>
</tr>
<tr>
<td>4</td>
<td>Data Correlation</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Data Consolidation</td>
<td>To create new or consolidated variables or data sets</td>
</tr>
<tr>
<td>6</td>
<td>Data Comparison</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Data Integration</td>
<td>To incorporate different types of data analysis (Initial interpretation)</td>
</tr>
</tbody>
</table>

Table 3.8: Seven Stages of Mixed Methods Research Data Analysis.

Data reduction and data display took place during the initial inference periods to reduce data by using qualitative and quantitative data analysis techniques appropriate for the data sources. For example, percentage of time spent on Motor Appropriate and Management categories at the learner involvement level were represented and discussed
in this study because of association with other elements of ALT-PE and CLASS instruments. However, presentation of the rest of category data in the ALT-PE was reduced with less association with others. Data were also displayed as appropriate and simplified configuration to identify and determine inclusive data, which involved reducing data as well (stage 2).

To integrate different types of qualitative and quantitative data and analysis, each type of data was transformed to other types of data, so called qualitized and quantitized (Tashakkori & Teddlie, 1998). Data transformation is considered a typical type of analysis that is required for integrative analyses in mixed methods research (Bazeley, 2003). For example, in this study, qualitative data was converted into numerical data by counting how frequent a particular theme was coded in a teacher’s transcript and across teachers to identify inclusive themes. The next three stages involved correlating (stage 4), combining (stage 5), and comparing (stage 6) data from different data sources to create new or consolidated variables or data sets. The final stage, data integration (stage 7), is led to the initial interpretation through integrating all data into a coherent whole or two separate sets of coherent wholes. In this stage, one type of data source was incorporated into a different type of data analysis (Bazeley, 2003). For example, quantitative data that guided categorizing profiles of teaching practices (research question 1) was incorporated into a qualitative analysis of interviews associated with research question 2 and three to conclude this study of findings including research question 4.

**Issues of Inference Quality**

The term inference quality is considered “the mixed methods term for the accuracy with which we have drawn both our inductively and our deductively derived
conclusions from a study” (Teddlie & Tashakkori, 2003, p. 36). Several techniques that are applied to both qualitative and some quantitative data are identified to ensure and improve inference quality: audit trail, peer debriefing, method and investigator triangulation, prolonged engagement, negative case analysis, and thick description and so on (Onwuegbuzie & Teddlie, 2003; Teddlie & Tashakkori, 2003). These techniques are used to ensure inference quality and are parts of what is called the legitimation process. Use of one or more of these techniques is suggested to assess to the legitimacy of the interpretation (Onwuegbuzie & Teddlie, 2003).

This study adopted method triangulation, peer review and debriefing, member checking and negative case analysis techniques to establish inference quality, which was considered as internal to the validity of quantitative data and credibility of qualitative data. Both of these strategies were employed in a similar process that is conducted for the treatment of qualitative data. However, the use of those strategies to improve inference quality was focused on four dimensions: 1) within-design consistency, 2) conceptual consistency, 3) interpretive agreement (or consistency), and 4) interpretive distinctness.

Triangulation

Multiple data-collection methodology, which is the most common form of triangulation in qualitative inquiry, was utilized to improve inference quality of data information and interpretation (Glesne, 1998). Data from three data sources including observation (e.g., CLASS data and field notes), interview transcription, and documents were triangulated to increase confidence in the data finding. For example, field notes of
data were incorporated to interpret a particular trend of findings from ALT-PE and CLASS (quantitative data).

Peer Review and Debriefing

Invaluable assistance of others during planning, collecting, and analyzing the data contribute to promote trustworthiness (Glesne, 1998). Peer review and debriefing are recognized as procedures that require colleagues to work as an outsider to audit fieldwork notes and clarify analysis and interpretations of the data. The author was discussed and received feedback on the data collection procedures, data collected and analyzed, and interpretations of the data to ensure trustworthiness with my advisor during whole research process.

Member Checking

Member checking is a means of checking data and data interpretation with respondents (participants) to obtain their reactions (Patton, 1990). According to Glesne (1998), the roles of participants in member checking process are 1) to verify their perspectives reflected on the data, 2) identify problematic sections with either personal or political reasons, and 3) help extend ideas and interpretation. The participants were involved in the member checking process through reviewing and providing feedback and commenting on the documents. The interview transcripts and interpretation of the data collected were emailed to the teachers and all teachers agreed with the document without any request for change in content.

Negative Case Analysis

Finding negative cases and unconfirmed evidence that do not fit neatly into the emerging theme is considered negative case analysis (Glesne, 1998). For example, this
study found different learning experiences between high performing teachers (e.g., particular teaching profiles from ALT-PE and CLASS, continuing learning across teaching career, reflection process) and low performing teachers (e.g., particular teaching profiles from ALT-PE and CLASS, limited learning and reflection process). Each case of findings were utilized to find negative cases in each other’s cases such as attempting to find limited learning and reflection process of evidence from high performing teachers’ data, or high performing teacher’s teaching profiles from low performing teachers’ data. This process helped refine and evaluate the interpretation of the data (Glesne, 1998; Rossman & Rallis, 1998).
The purpose of this study was to describe teaching practices of elementary physical educators, to identify why teachers choose specific practices in their context, and to explore how teachers have come to learn these practices. Multiple sets of data were collected and integrated to analyze the teachers’ teaching and learning in the given context. This chapter proposes to present the data relating to three research questions of this study:

1. What profiles of teaching practices in the ALT-PE and CLASS instruments can be distinguished for teachers units?

2. Why do teachers choose specific practices?

3. How do teachers develop competencies within their profiles of professional practices?

Each teacher’s case is presented separately, and data are organized in the following order: description of participant and context, and research question one, two, and three. The description of participant and context focuses on the teacher is teaching and learning experiences, his/her school context (e.g., ethnicity, socio-economic data, facilities for physical education program, and support from principal and district, etc).
Data related to research question one are organized in two parts: dance unit and invasion unit. Each instructional unit begins with description of observed teaching patterns and practices in the unit and continues discussion of Academic Learning Time-Physical Education (ALT-PE) and Classroom Assessment Scoring System (CLASS) data of the unit. Data for research questions two and three focus on instructional practices within each of dance and invasion units and managerial practices across the units.

Bob

Bob is a male teacher who has been teaching for 16 years at Charles elementary school in one of the suburban school districts near Columbus, Ohio. He holds a master’s degree in elementary education. Over the past 16 years, he has had a variety of learning experiences through workshops and courses at The Ohio State University. He has attended to state and national conventions, such as the Ohio Association for Health, Physical Education, Recreation, and Dance (OAHPERD) and the American Association for Health, Physical Education, Recreation, and Dance (AAHPERD) conferences to participate in several workshops. For example, he has attended the adventure education workshops offered at the AAHPERD conference in 2007. Bob believed that the teachers’ meetings supported by the school district were also helpful in obtaining valuable resources for his teaching. In addition, Bob took courses at OSU related to teaching students with disabilities.

Bob’s school provides kindergarten through fifth grade programs. Three-fourths of the students are identified as Caucasian (75%). The rest of students consist of African Americans (12%), Asian/Pacific Islanders (6%) and Hispanics (1%). Thirteen percent of the students qualify for the discounted/free lunch program. The school offers physical
education twice per week to all students and each lesson lasts 30 minutes. Bob has indicated that his school facilities are satisfactory for his physical education program. The gym is considered to be one of largest in the district and has a traverse wall, climbing ropes, and a large stage connected to the gym. He described strong support from his previous principal toward his physical education program, who provided a large annual budget to purchase equipment. However, his current principal’s support was relatively weak based on the principal’s limited involvement in the school events related to physical education program. Although parental involvement is lessening, Bob still has some parents who come to help in his morning fitness program and for field days. He also feels that the district support for physical education programs is satisfactory based upon support for teachers’ meetings at the district level and fund for teachers’ professional development.

Research Question 1: What profiles of teaching practices in the ALT-PE and CLASS instruments can be distinguished for teachers units?

Dance Unit: Description of Observed Teaching Patterns and Practices

Bob applied similar routines to every lesson across his dance and floor hockey units. After entering the gym, students sat in their gym seat number, which was assigned in the beginning of the year for attendance purposes. They sat in a big square area in front of the stage connected to the gym and listened to the introduction of the lesson. After this, they participated in a warm-up focusing on different elements of fitness across both units. Bob expected students to start activity with music and follow his stop signal to stop the activity and focus on him. For example, music was played during the activity. He whistled, raised his hand in the air, or stopped music to signal the students to stop the
activity and freeze. When all the activities of the day were over, students helped put their own equipment away. Then, they gathered in the big square area in front of the stage for the conclusion of class. Bob reviewed the lesson and gave homework during the closure. Heading to the exit door, the students lined up to go back to their classroom.

Although it was not viewed, Bob explained use of a point system that is applied to special areas such as art, music, library, and physical education. The class earns between zero and ten points each day for good behavior. Wearing shoes in physical education class was counted as a bonus point. After every nine weeks, all points from each of the special teachers were accumulated and the class that gained the highest number of points was recognized and rewarded. He described the point system as follows:

Another management strategy that we have is our point system. The points are based on what each teacher does with their own art, music, library, P.E. For example, as a PE teacher I will look at whether the students are wearing proper shoes. If they do not wear correct shoes without a legitimate reason, I will take a point off of their class score. When they wear shoes for four days in a row they earn two bonus points. Also, the score is on behavior, listening to directions, cooperation, respecting equipment, a lot of those common courtesy, roles and following direction. And it is a zero when they had a really bad day. A ten is a good day when everything was great. Then we add the shoe points to it. We keep track all of the points and all of the specials for a 9 week period and then we gather and add up all of the points in 3rd, 4th and 5th. For the class that has the most points from all of the specials, the students either earn a recess, a Popsicle, or some type of reward (Bob, Interview #11).

Bob had three lessons in a dance unit on Tinkling. Most of the lessons started with a short warm-up focusing on fitness elements such as strength and aerobics (e.g., push-ups, sit-ups, and jumping jacks) following a brief introduction of the lesson. Bob introduced basic patterns of Tinkling dance in the first lesson. After the short introduction of the lesson, students were grouped by their gym seat number across the gym and each of them was provided a handout that explained basic patterns of Tinkling dance. Bob
introduced Tinkling using two long jump bands that was used to create the basic pattern for the dance (two feet apart and together) and perform other, more complex patterns. After Bob physically demonstrated the patterns to the students, each group spread out across the gym and practiced the patterns with their group members. Bob moved around the gym and stopped each group to give feedback or refine the patterns as they needed until the end of the lesson. Each group put their equipment away and moved to the square space in front of the gym for the closing of class. Bob shared some information on the Jump for Heart program and asked students to do more outdoor activities for their homework assignment.

The second lesson started with a warm-up (e.g., push-ups, sit-ups, jumping jacks, and several aerobic steps) to the music after a short introduction of the lesson. Following the warm-up, Bob used two children to physically demonstrate examples of the combination of patterns, which students practiced in the previous lesson. He also provided a handout to remind students of each pattern. The students were grouped by the same character (i.e. heart, diamond, clover) on the card and practiced creating new patterns by combining the basic patterns during the rest of the class time. Bob gave feedback to each group and helped them understand the tasks. After the activity, students collected the bands and moved to the square area for closing. Bob gave homework to the students to work out during commercials while watching television.

In the third lesson, Bob paired students by their number in class and started a warm-up with jumping jacks and skipping across the gym. After the warm-up, the class was divided into three groups and asked to create patterns by groups. Each group used two-sets of bands so that the students could keep parallel or cross and create different
patterns based on their learning the basic patterns during the previous lessons. Bob verbally explained the task and let the students work on the tasks with their group members. He walked around the gym and talked with each group to clarify and reinforce their ideas. Bob also worked with groups as a group member to help them solve their problems by asking questions and sharing ideas. The students cleaned up the bands and moved to the front area without showing their patterns to the class. Bob informed students of a change in the PE schedule for the next PE class and closed the class.

Dance Unit: Academic Learning Time – Physical Education (ALT-PE)

The ALT-PE requires two levels of decisions: context level and learner involvement level. Context level decisions consist of three subdivisions (General Content, Subject Matter Knowledge and Subject Matter Motor) and each subdivision includes several categories as shown in Table 4.1. The learner involvement decision includes two subdivisions: Non-motor Engaged and Motor Engaged. The Non-motor Engaged subdivision consists of five categories: Interim, Waiting, Off-task, On-task, and Cognitive. A type of students’ motor engagement is categorized by Motor Appropriate, Motor Inappropriate, and Supporting under Motor Engaged subdivision. The percentage of time the class and students spent in each of subdivisions and categories at both decision levels will be discussed.
Table 4.1.: Two levels of ALT-PE decision categories

Figure 4.1 displays the percentage of time the class and students spent in the context level (General Content, Subject Matter Knowledge and Subject Matter Motor) and learner involvement level (Not-motor Engaged and Motor Engaged) of the ALT-PE subdivisions during Bob’s dance unit. Within the context level, the majority of Bob’s class time during the dance unit was devoted to the Subject Matter Motor subdivision (56.6%). The next highest subdivision was General Content subdivision (30%). Finally, 13.4% of time was spent in the Subject Matter Knowledge subcategory. Each subdivision showed a similar range (about 16%) between the highest and lowest percentage of time spent in the three dance classes. In the learner involvement level, a target girl and a target
boy were observed for each class. Both the target girl and boy were engaged in the non-motor activities for 72.5% of time and motor activities for 27.5%. The range between the highest and lowest percentage of time in the three dance classes in the Not-motor Engaged and Motor Engaged subdivisions was very similar at about 24%.

Figure 4.1: ALT-PE of Bob’s dance unit by subdivision.

Figure 4.2 shows the amount of time was distributed across the subdivisions within context level in the ALT-PE instrument during Bob’s dance unit. Within the context level of decision, the majority of class time was devoted to the Practice category (55.2%) under the Subject Matter Motor subdivision. Class time that was devoted to the
General Content subdivision was spent in each of subcategories, with the most time spent in Transition from one task to another (13.7%) and less time in Warm-up (5.9%), Management (5.5%) and Break (4.9). The majority of time in the Subject Matter Knowledge subdivision (13.4%) was devoted to providing information about strategy (10.8%).

According to the table 4.2, the most variance across the three days of Bob’s dance unit occurred in the Subject Matter Motor category of Practice between day 2 (48.3%) and day 3 (64.8%). The Warm-up category also showed a broad range between the highest and the lowest in the three days of lessons: 0% in day one, 11.56% in day two, and 6.17% in day three. In addition, another variance across three days of lessons was found in the Strategy category between day 1 (13.8%) and 2 (12.93%), and day 3 (5.56%).

![ALT-PE: Bob’s Dance](image)

Figure 4.2: ALT-PE of Bob’s dance unit by category at the context level decision
<table>
<thead>
<tr>
<th>Level</th>
<th>Sub-Division</th>
<th>Categories</th>
<th>Day 1 (%)</th>
<th>Day 2 (%)</th>
<th>Day 3 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>General Content</td>
<td>Transition</td>
<td>16.4</td>
<td>13.61</td>
<td>11.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Management</td>
<td>1.97</td>
<td>10.2</td>
<td>4.32</td>
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<td></td>
<td>Break</td>
<td>3.29</td>
<td>3.4</td>
<td>8.02</td>
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<td>11.56</td>
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<td>Subject Matter Knowledge</td>
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<td>Subject Matter Motor</td>
<td>Skill practice</td>
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<td>48.3</td>
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<td></td>
<td></td>
<td>Scrimmage</td>
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<td></td>
<td></td>
<td>Game</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fitness</td>
<td>3.95</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 4.2: Variance in categories of ALT-PE across lessons in Bob’s dance unit.
Figure 4.3: ALT-PE of Bob’s dance unit by category at the learner involvement level.

Figure 4.3 displays the amount of time students engaged in each of categories under the subdivisions in the learner involvement decision level of the ALT-PE instrument. In the learner involvement decision level, both target students were engaged in similar amounts of time (about 25%) in each of the following categories across Not-motor Engaged and Motor Engaged subdivisions during Bob’s dance unit: On-task (girl: 25.6%, boy: 26.3%) and Cognitive (girl: 24.5%, boy: 22.3%) within Not-motor Engaged subdivision, and in the Motor Engaged category of Motor Appropriate (girl: 27.5%, boy: 27.1%). These categories also showed a broad range across three days of lessons between the highest and lowest percentage of time (Table 4.2.): On-task between 12.5% in day one, 36.1% in day two, and 28.4% in day three, Cognitive between 23.7% in day one,
15.6% in day two, and 30.2% in day three, and Motor Appropriate between 40.1% in day one, 25.2% in day two, and 16.7% in day three. The target students were engaged a similar amount of time in most of the categories except time spent in Interim and Waiting. The girl was engaged more time in non-instructional tasks during an ongoing activity (Interim: 7.3%) than the boy (4.8%). However, the boy spent more time in Waiting (16.6%) for a turn or the next instruction than the girl (12.9%). The girl and boy were engaged 11.7% and 4.32% of time in the Interim, and 9.88% and 19.1% of time in Waiting, respectively in the third lesson. Except these two categories, almost no difference between the girl and boy was identified in other categories among the three lessons.

**Dance Unit: Classroom Assessment Scoring System (CLASS)**

Figure 4.4 and Figure 4.5 present the average scores in the four domains of the CLASS instrument and the variation between the highest and lowest scores in each dimension of the CLASS instrument during Bob’s dance unit. According to Figure 4.4, in all domains but the instruction support domain, Bob scored in the high range (between 6 and 7): 6.5 in Emotional Support, 6.1 in Classroom Management, and 6 in Student Outcome. Only the Instructional Support domain reached mid range (4.7). The range between the highest (7) and lowest scores (5) in the three classes for the student outcome domain was relatively broad.
Figure 4.4: CLASS: Bob’s dance unit by domain

Figure 4.5. CLASS of Bob’s dance unit by dimension.
According to Figure 4.5, most of dimensions reached mid to high range of scores including the Negative Climate dimension. Since the Negative Climate dimension describes degree of teacher’s negativity in terms of interaction with students and learning environment, low range of score in this dimension indicates little or no presence of teacher’s negativity in his/her class and may contribute to high quality instruction. In order to correspond with other dimensions that score high quality instruction in high range, the score in the Negative Climate was inverted and displayed in Figure 4.5.

Dimensions in the Emotional Support domain were scored all in the high range: 6.7 in Positive Climate, 7 in Negative Climate, 6.3 in Teacher Sensitivity, and Regard for Students (6.0). Management-related dimensions were rated in the following mid- and high-score: behavior management (6.7), productivity (6.3), and instructional learning format (5.3). Two dimensions in the instructional support domain, concept development and quality of feedback, where each scored 4.7 were scored a little lower than other dimensions. Bob was scored 6 in the student engagement. The concept development dimension showed a relatively broad range in three classes between the highest (6) and lowest (3) scores than other dimensions which of ranged one to two numbers between the highest and lowest scores.

**Floor Hockey Unit: Description of Observed Teaching Patterns and Practices**

Bob’s floor hockey unit consisted of six total lessons focusing on several skills (e.g., pass, dribble, and shoot). The first lesson focused on dribbling and passing skills. After a short introduction of basic information on floor hockey (e.g., sticks length, grips of the stick, rules, etc), each student took a stick and practiced dribbling without a puck across the gym. Bob explained how to control the puck with dribbling and let the students
practice it with pucks across the gym. Then, students put bowling pins around the floor and kept practicing dribbling with their own puck by moving around the pins without knocking out the pins. Bob grouped the students into seven lines across the gym and asked group members to keep practicing dribbling by following the first person of the line. After this, Bob gathered students in the middle of the gym and physically demonstrated the passing skill and an activity to practice the skill with a partner. Each couple paired up by different stick color, found spaces in the gym, placed bowling pins on the floor, and practiced passing the puck to their partner. They also tried to pass to their partner by moving around the gym and the pins. Students put their equipment away and Bob closed the lesson by reviewing the current lesson and introducing the lesson for next time.

The second lesson started with review of dribbling skills learned in the previous lesson. Each student worked on dribbling with their own puck and stick by moving around the gym. After this, Bob gathered students to refine the dribbling skill and let the students practice dribbling with their sticks and pucks around the gym again. Bob paired students by the number on their stick and had the class practice the passing skill by keeping the partners three steps apart. Students also practiced both dribble and pass skills together by having one person dribble around their partner and pass to their partner. Also, students practiced passing the puck with their partners while moving around the gym. Then, the class divided into six groups and set up one bowling pin in each group. One person in each group was a goalie who kept their pin standing while the other team members attempted to knock down the pin with dribbling, passing, and shooting skills. Other team members tried to attack other team’s pin to knock down. They switched the
goalie position with their own team members. All students helped put the equipment away after the activity and sat on the square area for closure during which Bob reviewed the lesson (e.g., skills and activities).

Bob set up several cones around the gym and started the third lesson with a short introduction of the lesson. He paired students by matching card numbers and colors. Students started practicing the dribble skill by using their own stick and puck around the gym. The students paired up by numbers on the stick again and asked one partner to stand with two feet wide apart while the other person put the puck through the two feet by dribbling and shooting. Music was played to signal students to start the activity. Students also stopped the activity when the music stopped. Bob refined the activity. Students with even numbered sticks moved around the space, shot, and dribbled to put the puck between the other person’s legs while students with odd numbered sticks stood with their feet wide apart. Then, four groups lined up behind cones spreading out at the end of the gym. One person from each line went straight down to the other side of the cones and went back to the line using dribbling. Each student in a line rotated their turn. Also, students practiced dribbling and passing with another person from the same line, going back and forth around the other side of the cones. Students were engaged in gathering the equipment (e.g. cones, sticks, and pucks). Then, Bob finished the class by reviewing the activities and giving homework.

The fourth lesson started with a warm-up (e.g. jump roping, push-ups, sit-ups) to the music. Bob divided the class into two teams, a red and blue team, by stick color. Each team member was also assigned to either one of three different roles: a goalie, an offender and a defender. Bob divided the gym into six areas by the cones. The cones
connected with jump ropes and different role members from each group occupied one of those areas in the gym by order of the blue team goalie, the red team offenders, the blue team defenders, the red team defenders, the blue team offenders, and the red team goalies. The goalies were assigned to protect 13 bowling pins in the goalie areas. Defender roles were blocking a pass against the other team and passing to the same team offenders. Offenders in each team attempted to knock down the pins in the other team of goalie area. All team members were allowed to pass across the cones but were not allowed to pass through the cones connected with jump ropes. Students switched roles and played this game with several pucks for the rest of the class time. The equipment was put away and Bob asked for students’ opinion about the game during the closing time.

Bob started the fifth lesson with an introduction of the class and a short warm-up working on fitness movements (e.g., jump-rope movement, push-up). Then, the class divided into four teams of four to play a modified game. Two team members from each team stayed in front of the end line to protect the goal box as goalies. The other two members from each team played against other team in the center of the gym and attempted to make goals. The gym was split into two courts and two teams played against another team in each court. The games were repeated until each team played with all other teams in the class. Students put the equipment away and sat within the square area for the closing. Bob repeated the same game that students did in day five lesson without a warm-up in the sixth lesson. The teams switched during the lessons. The class closed by gathering the equipment and reviewing the lesson.
Figure 4.6 presents the percentage of time the class and students spent in each subdivision within two decision levels (context level and learner involvement level) of the ALT-PE instrument during Bob’s floor hockey unit. The floor hockey unit of class time was spent in each subdivision with a similar pattern of his dance unit across context level and learner involvement level of decisions. Within the context level, almost half of the class time was devoted to the Subject Matter Motor subdivision (43.8%). The next highest subdivision was General Content (33.4%) followed by Subject Matter Knowledge (22.9%). Overall, three subdivisions in the context level showed a broad range between the highest and lowest percentage of time at about between 29% and 37%. However, the greatest range across six days of lessons in Bob’s floor hockey unit was identified in the Subject Matter Knowledge subdivision in the context level: 43.2% in day 1, 16.8% in day two, 30.4% in day three, 30.1% in day four, 10.1% in day five, and 6.5% in day six as shown in Table 4.3.

Within the learner involvement level, both the target girl and boy were engaged in the Non-Motor activities for about 60% of class time and Motor activities for 39.5% (girl) and 39.8% (boy) during Bob’s floor hockey unit. About 40% of a broad range between the highest and lowest percentage of time was displayed in both of two subdivisions (Non-Motor and Motor) in the learner involvement level for both the girl and boy.
Figure 4.6: ALT-PE of Bob’s floor hockey unit by subdivision

Figure 4.7: ALT-PE of Bob’s floor hockey unit by category in the context level
Figure 4.7 displays the amount of time the class spent in each of subcategories under the context level of subdivisions in the ALT-PE instrument during Bob’s floor hockey unit. The highest percentage of class time that was devoted to the Subject Matter Motor subdivision (43.8%) among three subdivisions was spent in either skill development of practice (29.3%) or skill extension in an applied setting (Scrimmage; 14.5%) in the context level. The majority of class time spent in the General Content subdivision (33.4%) was devoted to the transition from one task to another (23.1%). The majority of time spent in the Subject Matter Knowledge subdivision (22.9%) was allocated to providing information about plans of action (Strategy: 16.3%).

According to Table 4.3 that shows variance across six days of Bob’s floor hockey unit, overall, the most broad range between the highest and lowest percentage of time was identified in the Practice (between 63.1% in day two and 0% in day five and six) and Scrimmage (between 51.3% in day six and 0% in day one through four) categories because the first four lessons mainly focused on skill practices with no scrimmage while the rest of lessons was designed only for scrimmage.
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Table 4.3: Variance in categories of ALT-PE across lessons in Bob’s floor hockey unit.
Figure 4.8: ALT-PE of Bob’s floor hockey unit by category at the learner involvement level

Figure 4.8 presents the amount of time students engaged in each of categories under the subdivisions in the learner involvement level decision in the ALT-PE instrument during Bob’s six days of floor hockey unit. The target students were mostly engaged in one of the following activities during Bob’s floor hockey classes: Motor Appropriate in the Motor Engaged subdivision (girl: 39.55%, boy: 39.8%) and On-task (girl: 26.5%, boy: 26.4%), Cognitive (22.8% for both girl and boy), and Waiting (girl: 11%, boy: 10.7) in the Non-Motor Engaged subdivision. The students’ engagement in subject matter-oriented motor activities (Motor Engaged subdivision: 39.5% for girl and 39.8% for boy) was identified as appropriate (Motor Appropriate: 39.5% for girl and 39.8% for boy). The students engaged in the rest of class time in an assigned non-subject-
matter task, cognitive task, and waiting for a turn or the next activity under the Non-Motor Engaged subdivision.

As shown in Table 4.3., the students were engaged in a broad range of different percentage of class time in the Motor Appropriate, Cognitive, and On-Task categories across the six days of Bob’s floor hockey lessons, among which the most variance occurred in the Motor Engaged category of Motor Appropriate: 34% in day one, girl for 63.1% and boy for 62.4% in day two, girl for 18.7% and boy for 21.1% in day three, 35.9% in day four, 35.6% in day five, and 50% in day six. Limited difference between the target girl and boy was identified across the student involvement level of subcategories during Bob’s floor hockey unit. The most difference between the target girl and boy was 2.9% in the Waiting category in day three.

_{Floor Hockey Unit: Classroom Assessment Scoring System (CLASS)}_

Figure 4.9 displays the average and the variation between the highest and lowest scores in four domains of the CLASS instrument during Bob’s floor hockey unit. Bob scored in high or close to high range except the Instructional Support domain. The Emotional Support scored 5.8, and Classroom Management and Student Outcome domains rated at 6.2 and 6.5, respectively. The Instructional Support domain was rated in mid range of score (3.1) and displayed a relatively broad range between the highest (5) and lowest (2) scores in the six classes of Bob’s floor hockey.
Figure 4.9: CLASS of Bob’s floor hockey unit by domain.

Figure 4.10: CLASS of Bob’s floor hockey unit by dimension.
According to Figure 4.10 that presents the average scores and the variation between the highest and lowest scores in each domain of dimensions in the CLASS instrument during Bob’s floor hockey unit, overall, most of the dimensions were scored in the high and mid range except Concept Development dimensions. Although the scores of the Positive Climate (6.7) and inverted Negative Climate (7) were rated in high, Regard for Student Perspectives dimension (4.3) was rated the lowest score among the Emotional Support domain of dimensions and showed a broad range between the highest (7) and lowest (3) scores across the six days of lessons in Bob’s floor hockey unit. All dimensions within the Classroom Management domain were rated in the high range: 6.8 for Behavior Management and 5.8 for both the Productivity and Instructional Learning Formats. However, two dimensions in the Instructional Support domain were scored very differently: low in the Concept Development (1.8) and mid range in the Quality of Feedback (4.3). A broad range in the six classes of Bob’s floor hockey unit between the highest and lowest scores was identified within the Concept Development dimension (between 5 and 1). The Student Engagement dimension was scored high (6.5).

Research Question 2: Why do teachers choose specific practices?

This section will provide data related to Bob’s rationale on the choice of his instructional practices observed during the dance and floor hockey unit and managerial practices.

Instructional Practices

Dance Unit. Decisions to choose Tinkling for the dance unit and the instructional practices that Bob adopted were determined based on the concerns about students and Bob’s belief toward his teaching practices. Bob chose the Tinkling dance by
connecting the dance unit to the fitness of his students. He believed that Tinkling would “get the kids moving” (Interview #8). The following statement described how he chose Tinkling in relation to his attempt to increase the fitness level of his students:

In our school the fitness level has been going down in the years. You can see a big change and there is a lot of reason for it, so you want to get them moving as much as possible, working on their fitness . . . obviously for health reasons. There is enough research for fitness and [its relationship to] education so why not kill two birds with one stone and try to get them in better shape? I can also help them in the classroom so you look for ways of doing that and that is why I went with the Tinkling. (Bob, Interview #11)

Bob taught the first basic patterns of Tinkling and then let the students create their own patterns. He made a decision on that progression based on his belief that “that would probably be the best approach for the students . . . feeling out what would work and what wouldn’t work…just trial and error. It’s why I selected them” (Interview #9). Bob utilized “a lot of direct (instruction) and then a lot of time on their own” (Interview #11) for the students to practice the activity throughout the dance unit. He used handouts to guide the students practicing the patterns and help them to create their own patterns. Bob commented:

With the handout, you give them some ideas of how to jump. They can use that for background and some other information when they create their own (pattern). Give students a certain degree of guidance, not too much freedom, and open up some possibilities. (Bob, Interview #9)

In addition, Bob provided more independent practice of activities and interacted with students more as a facilitator to allow the students to create their own dance. The following statement described how Bob encouraged students to work on creating their patterns by allowing the students to take ownership:

Each group has their own little dynamic and the way they work. You have to figure that out and you don’t want to over step it too much. If you get in there
with them too much, it is not really theirs and they don’t have ownership of it, but if you step out of it completely then there is a potential that they are just not going where you want them to go. So you have to help them a little bit and get in and out just short little spurts of instruction or help whatever you want to call it and get it moving. If they have ownership, they are going to do more for you. (Interview #11)

Thus, Bob connected the dance unit with the goal of increasing students’ fitness. He made decisions on his teaching practices dependent upon his concern for students (fitness level and needs) and his belief on “the best approach for the students” (Interview #9).

**Floor Hockey Unit.** The floor hockey unit was planned and organized by considering students’ skill differences, by his educational goals, by having fun, and by maximizing time for activities. First of all, Bob considered what students needed based on their skill differences. He adopted open-ended tasks to provide students with the experience of being successful in the activities. He commented:

You are going to have a range of abilities and skills and you try to set up a lot of the activities so they can you leave it as much open-ended as you possibly can, so instead of saying, “I want you to pass the puck three times with your partner,” you would say, “How many times can you pass it back and forth in this time or can you?” So leave it open-ended, and they [students] will reach their own (goal) and they are successful and then, they still get to go at their pace. (Bob. Interview #11)

Bob adopted progression of the activities to be challenging for the students. He also believed that by adding the progression, it allowed the students to be more involved in the activity and kept them moving. He noted that, “I need the kids moving quickly and short activities for them to just keep them going, go, go! So you work on the same skill, but are mobile in different ways” (Interview #3). In addition, the following statement described how the progression of the activities worked for the students:
It’s nice to add progression, making it more challenging as they get better and better and they can pick their own speed. They never end it, (they) just keep trying to have them going over and over…it came out of necessity. (Interview #3)

Modified games were utilized to practice skills and to play games during the floor hockey unit. Bob modified the activities or game to provide students with more opportunities to practice by keeping the students moving. He explained his rationale toward modification of the game as follows:

I chose the modified game because it is quick. You are moving constantly, you know everybody is involved either as a goalie or on the floor. You could have two offenses and two defenses and had more kids in the game and actually one less goalie. We have done that before. I didn’t do that, it was just probably either time constraints or I think we had some snow days or something, but we just went with that version. I think it just gets the game moving quicker and they get the same basic idea of moving up and down the court and passing. The more you get to participate, the more you get your hands on the puck, so that is why we went with that. (Interview #11)

Bob also considered whether the students had fun in his PE program and the activities he adopted in his lessons. He believed that the students who had fun in his classes would be willing to participate in the after school activities. He noted that “I don’t want to do something that’s not fun and it could be productive, but it needs to be fun if you want them to do it on their own” (Interview #4). Stated more directly, “if they’re not enjoying it here, they’re less likely to do it outside on their own time” (Interview #5). Positive experiences of the students in the PE program could result in an increase in participation in the activities out of schools. Since, hockey is not a common sport for the students, Bob attempted to adopt more game-type activities to keep students having fun to the extent to which they continue to play hockey out of school. He commented:

If they are not having fun, they are not going to do this again. And if we are looking at the life long goal down the road, then we need to have fun. Hockey may be not their sport and that is fine, but if they have fun and try to connect fun
with fitness and healthy living, you get them enjoying things and it is like [that they will say], Hey, wait! I am exercising or I am doing a sport! This is great! I want to do it again or they might be like, golf has a similar idea. I could try golf. If they are enjoying things they are more willing to try other things, they are more willing to grow because you can open them up. I think it was a Chinese proverb or something about teachers open the door to education, students have to step through it. And that is very true. We can open the door, but if the kids are having fun they are going to be willing to step through and keep going. So games are just fun. It is high energy and excitement. Kids are fun and they solve a lot of your problems again with discipline and all of those take care of themselves. (Bob, Interview #11)

The use of game-type activities was also adopted for efficient learning to connect the skills to the game. Students could learn better for game play by setting up game-type activities. He commented:

If you set up games that are more realistic, it makes a better connection to the actual game itself. In practice, there is more carryover from the skills of knowledge and they are more comfortable. They know what to expect then. And where if you are just passing the puck back and forth, and then all of a sudden you are in a game with people moving around…it’s like if you are trying to learn to streamline drive a car by sitting in a parking lot turning the wheel---it is not the same. So I think it helps, it makes it more realistic and meaningful to the students. (Bob, Interview #11)

Lastly, time management was one of the issues Bob considered in teaching his floor hockey unit. He organized the activities considering progression and set-up of the equipment to reduce down time in the lesson. Such smooth transitions between the activities allowed for more participation in the activities. He noted:

You don’t want a lot of down time to reset up equipment or re-explain to start and stop them. You want little changes with directions that they can add one more step. It changes whole level of complexity, but it is a quick and easy. Just give them directions and get them started. So you minimize how much down time they are not actually involved in the activity. You don’t want to set up a lot of equipment if it doesn’t go with the next activity. So if you are working on moving and passing, and then in next class you would go into goal tending, or if you have a lot of stuff spread out on the floor, it is going to hamper what you want to do. (Bob, Interview #11)
Overall, Bob attempted to increase student learning by considering students’ skill differences, by increasing opportunities to practice, and by keeping students moving and having fun. Reducing down time was another issue that was considered in making decisions on the teaching practices.

Managerial Practices

The practices, such as routines, were adopted for time management and for motivating students. Bob believed that management strategies allowed for a smooth flow of the class and more learning time within the limited 30 minutes of class time. Student safety was also considered in adopting his management strategies. The following statement described his position toward the benefit of his management system:

With 30 minutes you can easily lose anywhere from 5 to 10 minutes to get them ready to go cleaning up with directions such as all of those little starts and stops. To minimize that as much as possible, you need a routine and something established. With a lot of the students, you need every action that has a consequence as good or bad so you need them there. If you have routines and points, I think all of that help class flow easier. It takes a lot of the frustration out of other students hey I am working but this is not they can see but there is a consequence for his behavior, so it is a time management tool, it helps a lot with safety issues and some kids they just act before thinking. And I think those all come together to help the student learn how to self-manage how to learn and grow as an individual. So all of these put everything makes it run smoother. (Bob, Interview #11)

Bob believed that the point system contributed to reinforcing the students towards better behaviors in the PE class. He explained how the system worked for the students in his class and in other subject classes:

It reinforces, it helps [students] keep working in. If they had a 7 in music there it is and then we can address it in PE as well or vise versa and help each other out and reinforce it. We are all one big class here. (Interview #11)
Also, music was utilized in his lessons to motivate and help students enjoy the class. He noted that “it [music] can be a very good motivator, it gives them a workout” (Interview #11) as well as “it is great because we can have a good time with it” (Interview #11). Thus, management practices were adopted to increase more learning time (time management), improve student behaviors and motivate students. Corresponding to his effort for the management systems, limited behavior issues of the students such as off-task was observed across his dance and floor hockey unit.

Research Question 3: How do teachers develop competencies within their profiles of professional practices?

This section will be devoted to providing findings of data on the teacher’s learning for the observed teaching practices related to instruction and management.

Instructional Practices

Dance Unit. Bob rated his expertise in Tinkling at about six or seven out of ten. He basically learned the dance from a textbook and workshop. However, he went through the procedures of adding his ideas and reflection on his experience of trial and errors to his learning. Learning from the book was a resource to get ideas on Tinkling:

There was a textbook I saw the Tinkling in. It’s an elementary Phys Ed I want to say I think it was Dynamic Physical Education. But I’m not sure. I don’t know how old the book is. So I found some Tinkling ideas in there. And that’s where I was like, Wow! Tinkling is a dance! I never knew that before. I used that and then just my own thoughts. What would be an easy way to get them into the patterns and jumping? So it’s a combination. The book had some patterns, but they look a little bit more advanced than what I thought the kids were ready for at the moment. (Interview #8)
Bob indicated how he utilized his learning from the book to implement ideas into his class. He attempted to combine the information on the book with his own ideas. He commented:

I got some of the ideas from the book and on my own, I thought, ‘Okay, what are some basic ways in that?’ So the first one where they jumped there on the left side, middle right side, middle; it gives them the idea of traveling right to left. (Bob, Interview #8)

A brief introduction to Tinkling in one of the workshops provided him with an idea to teach the dance. According to the description on the learning experience from the workshop, it was a very short section:

It’s a one day workshop. This is one of the activities they probably spent maybe five, ten minutes on it. Just jump in and out and then it wasn’t long and the section. It was just a skill. And then from there it was like, “Ah-ha!” (Bob, Interview #9)

Not only the skill, but also use of jump bands to teach Tinikling was learned from the workshop. Bob also added his own ideas to his learning from the workshop through trial and error. He noted:

It was one of the workshops I went to they had jump bands. They had different bands. It was five minute practice and that was about it. A lot of it has been trial and error. I like the bands... Bands we pull back, whacking each others ankles and fingers. Safety. There are ways you put a 2 x 4 and they can bang the 2 x 4 so they’re not whacking their knuckles on the ground. Then from there it’s just trial and error and it’s not where I would like it to be. Then again I guess nothing is because you’re always going to be changing and looking for something—a better way of doing it. It’s a work in progress. I saw it at a workshop years ago and then just after that it’s been self taught, which I don’t know how much I’ve learned (Bob, Interview #8).

Overall, Bob developed his competencies in teaching Tinkling through his learning from the textbook and workshop. He added his own ideas and reflection on the process of trial and error to implement the dance into his class.
Bob utilized several resources to develop his competencies for teaching his floor hockey unit. He indicated getting his ideas through the use of special magazines, workshops or conventions, periodical visits to bookstores to get textbooks at his undergraduate university, and the internet. In addition, his peer teachers were valuable resources in sharing ideas with Bob. He described the process of getting ideas from other resources:

Special magazines, you can pick up like hockey, some articles different professional workshops you go to. They occasionally will have hockey. Professional, as far as textbooks, I have some of my undergrad still and my wife teaches reading in the building. She’s a reading specialist so we go through either Campus, or www.ou.edu, and travel the book stores and select textbooks that are used and use those as resources. P.E. Central, a few other Phys Ed sites, [we] pull those up and try to get ideas. Also talking with your peers there is a lot is trial and error (Bob, Interview #2).

Bob believed that those resources helped him “keep new ideas coming” (Interview #6). Specifically, Bob specified his learning from workshops or conventions and other peer teachers in the district. For example, he attempted to go to many workshops and national and state conferences to get new ideas. The district supported teachers’ participation in the professional conventions by providing some amount of money. Bob always tried to use the money for his professional learning. He noted:

I go to the state convention, try to go to nationals. You usually get several flyers throughout the year having this could be like a great activity. But different companies send them out. It could be sometimes a specific to a certain area and others are general. They usually give you an agenda what’s on the workshop and you kind a have to pick and choose what you can go to with, time permitting. Our district pays $120.00 per staff member to go to conferences, so it’s nice in that they do help (Bob, Interview #3).

Sharing ideas with other elementary teachers in his district was another valuable resource for Bob. They emailed each other to ask and share ideas and their experiences
with teaching floor hockey in their own PE program. Bob got several ideas from other teachers and modified them as they fit into his context:

A lot [of information] from other teachers, we share. There are seven elementaries, there are probably four of us that really share really well. If someone has an idea we shoot them off in an e-mail or to any questions, we ask and send an e-mail out [to see if] anybody [has] ideas. The other ones who don’t always share still occasionally do come up with a question to ask and so forth. The kids are pretty much on the same playing field so to speak. I mean they are on the same ability-wise throughout the district, same general interest. So if it works at one school, basically it will work at your own building. You may tweak it for your own needs. (Interview #6)

Bob utilized several activities in his floor hockey unit, which were transferred from soccer activities. The modification was based on his ideas. For example, Bob picked up the activity of passing between two feet of opposite group members from soccer, which was learned from workshop. He commented:

Between your feet, I learned that in soccer. I went to a workshop and it happened to be one of the instant activities for soccer. Is this the idea of controlled passing? I picked that up from soccer. A lot of soccer drills can translate into hockey. They’re interchangeable. So that’s where that came from. (Bob, Interview #3)

Bob also transferred a line soccer game that the students liked, into the floor hockey version of the game. He basically learned the game from a previous physical educator and modified it to implement into his hockey unit. Bob described it as follows:

It actually was a line soccer game. It was originally learned from soccer. I think it was the Phys Ed teacher that I took, he used to teach here. He moved into a classroom and I think he’s the one that told me about the soccer version of the game. And then I’m like, ‘the kids like it in soccer, let’s just move it over to hockey!’ You know it’s the same idea. So I think that’s where I originally learned that. But that was many months ago. (Bob, Interview #5).

Past teaching experiences were devoted to helping him transfer and modify his learning from other resources. He believed that “past experience is a good source. What works for you, what doesn’t work” (Interview #6). He also valued finding out what works
for the students through trial and error, so that students were considered a “very good source of information” (Interview #4) during his past teaching experiences. Bob described how he utilized students’ reaction to the activities and their ideas and opinions regarding the activities in his class:

What better source to find out [information]. You can watch them and hear them laugh and smile and all that and that’s a good indicator. But it’s their ways of creating their own games and modifying things. And I thought, let’s ask the kids. Let’s see what they think. And over the years they’ve created other games and made modifications to the game and it was like, “I never would have thought of that!” And thisjust what I got used to asking them. You don’t do it all the time, but it’s a good tool I think to use…let them take ownership of their own learning. They’re proud of it. They’re going to change from the next fourth grade. I’ll say, “Hey, this class came up with this” and then we’ll ask them and kids really like it. And the next year you’ll see the other kids playing it…the same version of the game. Some of them are like, “Hey, wow! We did that!” It just helps build the spirit of P.E. (Bob, Interview #4)

Overall, Bob’s competency in teaching floor hockey, which was rated between eight to nine out of ten, was developed through his learning from several resources: special magazines textbooks, the internet, workshops or conventions, other peer teachers, past teaching experiences, teaching experiences of other subject areas, and his own students. He always attempted to get new ideas coming out from other references and implemented them into his class by trial and error.

Management Practices

The current management systems could be implemented throughout the process of trial and error of several other systems. He learned some of the management practices from previous PE teachers and modified them to find what worked for the students. He described the procedures of his learning through trial and error as follows:

Some of the routines were established before I came here. The old Phys Ed teacher went from teaching Phys Ed to the classroom and I picked up on some of
his ideas. And his suggestion made of coming in and always having them sitting down. And so you try to pick up from other teachers’ suggestions what they do and what works. And a lot of it is trial and error. What works best for you and what is needed overall, and what accomplishes all of your goals. I try to have stations for them as they come in and start to get a warm-up station as I was getting rid of the last class. That worked really well for some students. Some it was too much movement, too much stimulation. And so a lot of routines are trial and error, what works best. I don’t want to complicate it, because it is hard for the kids and then it is hard for me to remember. So try to keep it a short and simple kind of approach, so trial and error…Learning from other teachers and seeing what works best for you is the way to create your own. (Bob, Interview #11).

Bob started using music in his class based on his personal experiences in working with music. He noted that “I know I work better when I am listening to music around the house and if am running the sweeper, I want to hear music. I started to think, “This is a powerful tool!” (Interview #11). However, he needed the process of trial and error to find out appropriate music for his class as he noted that “certain music works good for certain games so it is trial and error” (Interview #11). Using the music for start and stop signals was developed and it worked well for the students. He commented:

I like doing stuff with music, so I brought it in and thought, “Okay, I will just play it. And this room is pretty good sound proofing, but all day they are sitting in their room so let’s liven this place up! Let’s have some fun here!” It developed from there. It is good I learned that you can start and stop kids on music and it just developed and rolled onto its own, but it has been very helpful. (Bob, Interview #11).

In summary, Bob learned and developed current management strategies through his personal experiences, other teachers, and the process of trial and error with the students. He attempted to adopt a management system that “fit most of the classes the best” (Interview #11) over the years of his experience.
Kevin

Kevin is a male teacher with 24 years of teaching experience. Kevin has spent his whole teaching career at Arlington elementary school in one of suburban districts near Columbus, Ohio. He holds a Master’s degree in physical education (PE). Kevin described his professional experience of taking several courses and working with faculty members as a participant in several research projects at the Ohio State University. He is currently taking an on-line course at Miami University as well.

Kevin’s suburban elementary school consists of students from a broad range of socio-economic backgrounds, including with more than 75% Caucasian students. Thirty-one percent of the students are qualified for discounted or free lunch program. The school includes K-6 grade levels and has adopted a four day rotation schedule so that students have their physical education class every four days for 45 minutes. As the only physical education teacher in his building, Kevin teaches all these grades of physical education classes. Kevin described the availability of facilities (e.g., gym) and equipment for his PE programs positively to provide an effective physical education program. Moreover, he considered the community setting of the school (e.g., resources, activity programs) and parent involvement to be reasonably good. However, Kevin felt that the support of his principal and district for PE programs and PE teachers is poor and weak, especially based on a lack of support for maintaining time allocation for physical classes and providing planning time for physical education teachers in the district.
Research Question 1: What profiles of teaching practices in the ALT-PE and CLASS instruments can be distinguished for teachers units?

Dance Unit: Description of Observed Teaching Patterns and Practices

Kevin’s dance unit was conducted during three consecutive days of lessons right before the Christmas break. As a yearly event, Kevin combined four 4th grade classes (art, music, physical education, and library) and collaborated with the teachers of each class to provide dance classes. Several folk dances were covered in his dance unit: Polka, BINGO, and Susan Reel. Kevin and the music teacher mainly demonstrated and described the dances to the whole groups and organized the classes to practice the dances with music together. Other art and library teachers monitored students and sometimes participated in the dances with their students.

As the first lesson started, the teachers organized the whole class into doubled circle. The boys circled inside and the girls were placed outside of circle. The boys and girls on each circle faced each other and became partners. Since the number of boys was more than girls, several couples were the same gender. Once the whole group was organized into the doubled-circle with partners, Kevin demonstrated Polka steps and led the class to follow his steps with music. After this, Kevin and the music teacher demonstrated BINGO steps and had students practice the steps under their direction. The students tried BINGO with music as a whole group.

Once the students came to the next day of class (day 2), they made two circles and started with the dances (Polka and BINGO) they learned in the first lesson as a warm-up. Following those dances, students were taught the Susan Reel, for which the whole group was divided by groups of five couples, a total of ten students in each group. Kevin and
the music teacher demonstrated the dance steps with one group of students and then each
group practiced the steps with group members. The teachers went around and helped
students learn the steps. Students learned two parts of the Susan Reel among three parts
in the second day of class. The last lesson was spent mostly for reviewing the dances
learned with music and learning the last part of the Susan Reel dance.

Dance Unit: Academic Learning Time-Physical Education (ALT-PE)

Figure 4.11 shows the overall percentage of time the class and students spent in
each of subdivisions at the context level (General Content, Subject Matter Knowledge)
and learner involvement (Not-motor Engaged and Motor Engaged) decision level in the
ALT-PE instrument during Kevin’s dance unit. The majority of the class time during
Kevin’s dance unit was distributed to the Subject Matter Motor subdivision (56%) in the
context level. The rest of class time was spent in the Subject Matter Knowledge (29.7%)
and the General Content (14.3%) subcategories. A range between the highest and lowest
percentage of time spent across the three days of Kevin’s dance unit was about 18% in
both the Subject Matter Knowledge and the Subject Matter Motor. Small range of
variance was identified in the General Content subdivision during Kevin’s dance unit. In
the learner involvement level, both the target girl and boy were engaged in more time in
the Motor Engaged activities (girl: 55.2%, boy: 55.1%) than the Not Motor Engaged
activities (girl: 44.8%, boy: 44.9%). The range between the highest and lowest percentage
of time spent across three days of Kevin’s dance unit in both the Not Motor Engaged and
the Motor Engaged subdivisions was at about 19%.
Figure 4.11: ALT-PE of Kevin’s dance unit by subdivision

Figure 4.12: ALT-PE of Kevin’s dance unit by category at the context level decision
Figure 4.12 displays the percentage of class time distributed to each category under the subdivisions in the context level decision of the ALT-PE instrument during Kevin’s dance unit. The majority of the class time that was devoted to the Subject Matter Motor subdivision was spent in the Practice (31.6%) for dance steps and the Scrimmage type of dance practice to the music (24.4%). The rest of the class time was mostly distributed to the following categories during Kevin’s dance unit: Transition (6.5%) and Management (7.9%) in the General Content subdivision, and Technique (12.3) and Strategy (14.8%) in the Subject Matter Knowledge subdivision.

The most variance across the three days of Kevin’s dance unit occurred in the Scrimmage category within the Subject Matter Motor subdivision between 16% in day 1, 17% in day 2, and 40.3% in day 3 as shown in Table 4.4. The next greatest range across three days of lessons between the highest and lowest percentage of time was identified in both the Technique (9.5% in day 1, 21.8% in day 2, and 5.4% in day 3) and the Strategy (23.8% in day 1, 8.7% in day 2, and 11.8% in day 3) categories at about 16% and 15%, respectively.

Figure 4.13 displays the percentage of time students engaged in the categories under each of learner involvement decision level of subdivisions in the ALT-PE instrument during Kevin’s dance unit. In the learner involvement level, both target students were engaged in the majority of class time in subject matter-oriented motor activities and those engagements were identified all as appropriate (girl: 55.2%, boy: 55.1%). They were engaged in the rest of class time in cognitive tasks (29.7%), non-subject matter tasks (12.3%), and waiting for a turn or the next task (2.6%).
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Table 4.4: Variance in categories of ALT-PE across lessons in Kevin’s dance unit
A broad range across three days of Kevin’s dance unit between the highest and lowest percentage of time was found in the Motor Appropriate category ranged between 67.4% and 48.1% (Table 4.4.). The students were also engaged in a broad range of different percentage of class time in the Cognitive category during Kevin’s dance unit: 35.5% in day 1, 35.9% in day 2, and 17.6% in day 3 for both the target girl and boy.

_Dance Unit: Classroom Assessment Scoring System (CLASS)_

Figure 4.14 shows the score in the four domains of the CLASS instrument during Kevin’s dance unit. The Classroom Management and Student Outcome domains were rated in the high range, 6.5 and 7, respectively. However, Kevin scored between mid and
low range in the rest of domains: Emotional (4.9) and Instructional Supports (2.3) during his dance unit. The range between the highest and lowest score across three days of Kevin’s dance unit was less than one score across all four domains.

Figure 4.14: CLASS of Kevin’s dance unit by domain

Figure 4.15 presents the average and the range of highest and lowest scores in each domain of dimensions in the CLASS instrument during Kevin’s dance unit. The dimensions of both the Classroom Management and Student Engagement domains that reached high range were rated in all high range across three days of Kevin’s dance unit: 6.8 for the Behavior Management and Productivity and 6 for the Instructional Learning Formats under the Classroom Management domain, and 7 in the Student Engagement. The Emotional Support domain of dimensions were mostly rated in the mid-and high
range scores including inverted score of the Negative Climate dimension (6.8) but the
Regard for Student dimension which was scored almost the low range (2.2): Positive
Climate (5) and Teacher Sensitivity (5.6). Corresponding to the low range of score scored
in the Instructional Support domain, Kevin scored mid- and low range in the dimension
of the Instructional Support domain: Concept Development (1.2) and the Quality of
Feedback (3.4) dimensions. A broad range between the highest (7) and lowest scores (4)
was found in the Teacher Sensitivity dimension across three days of Kevin’s dance
lessons.

![CLASS by Dimension: Kevin's Dance Unit](image)

Figure 4.15: CLASS of Kevin’s dance unit by dimension
The floor hockey unit consisted of four lessons, in which a modified Tactical Game Approach and Sport Education curriculum models were adopted and combined as the instructional strategies. In each lesson, a clear class routine was identified. For example, once the students entered the gym, they lined up following the line on the floor closest to the wall and started their warm-up by moving back and forth from one end to the other end of the line with predetermined movements such as high knees, high heels, bounding, karaoke, and bear crawls. This warm-up was led by a leader for the day. After this, students lined up behind the pull-up bar on one side of the wall and tried to do as many as they could.

After the warm-up, in the first day of lesson, students were divided into groups of four with each group member numbered one through four within the group. Each number from each group became a team, which remained intact for the duration of the unit. Following the team selection, Kevin briefly explained students’ positions (e.g., wing, center, defender, and goalie) and their roles (e.g., clock, referee, coach) on- and off-the court by their positions. Two teams played a game on the court while the other teams stayed off the court and worked on their roles. After every five minute game, the teams were switched. Kevin provided instruction on skills, tactics, and rules during the game.

The second lesson started with warm-up routine and students were ready to play following their warm-up without Kevin’s order. They continued switching the teams to play games. Kevin introduced the butterfly drill, in which students required and practiced pass and shooting skills. Students stopped the practice as the class time was over. The third and fourth lessons started with the butterfly drill following warm-up. Then, students
played games and Kevin provided feedback on the students’ skills and tactics during and between the games.

*Floor Hockey Unit: Academic Learning Time-Physical Education (ALT-PE)*

Figure 4.16 shows the percentage of class time spent in each subdivision at the context level and learner involvement decision level in the ALT-PE instrument during Kevin’s floor hockey unit. The highest subdivision spent during the hockey unit in the context level was the Subject Matter Motor (44.5%) followed by the General Content (35.8%). The lowest percentage of class time was devoted to providing knowledge related to the content (19.7%), which also showed a broad range across four days of Kevin’s floor hockey unit between the highest (29.2%) and lowest (8.4%). Both the target girl and boy students were engaged for more than three-fourths of the time in the Not-motor subdivision (girl: 76.6%, boy: 77%). The difference between the highest and lowest percentage of time was identified as less than 4% in both the Not-motor Engaged and Motor Engaged subdivision at the learner involvement decision levels.

Figure 4.17 presents the percentage of class time spent in each of categories under the context level of subdivision in the ALT-PE instrument during Kevin’s floor hockey unit. The majority of class time was devoted to practice in an applied setting (Scrimmage), Transition from one task to another, and instruction related to plans of acting (Strategy). About two-thirds of the class time was spent in the Scrimmage (36.4%) in the Subject Matter Motor subdivision and the Waiting (29.2%) in the General Content at the context level. The rest of the class was mostly devoted to the Strategy (15.9%) category in the Subject Motor Knowledge subdivision.
Figure 4.16: ALT-PE of Kevin’s floor hockey unit by subdivision

Figure 4.17: ALT-PE of Kevin’s floor hockey unit by category in the context level
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Table 4.5: Variance in categories of ALT-PE across lessons in Kevin’s floor hockey unit
The most variance across the four days of Kevin’s floor hockey unit occurred in the Scrimmage category within the Subject Matter Motor subdivision at about 18% as shown in Table 4.5: 37.8% in day 1, 25.3% in day 2, 39.2% in day 3, and 43.1% in day 4. The next greatest range between the highest and lowest percentage of time was identified in the Subject Matter Motor of Skill Practice category between 14.8% in day 2 and 0% in day 1. The difference between the highest and lowest percentage of time across four day of Kevin’s floor hockey lessons was about between 11% and 0% in the rest of categories across the subdivisions.

Figure 4.18 displays the percentage of time students engaged in each category of subdivisions in the learner involvement decision level of the ALT-PE instrument during Kevin’s floor hockey unit. In the learner involvement level, students were engaged in four categories of activities, with similar percentage of class time spent in Waiting (28.3% for the girl and 28.6% for the boy), Cognitive (girl: 25.4%, boy: 25.3%), and On-task (girl: 22.9%, boy: 23.1%) in the Not-motor Engaged subdivision and Motor Appropriate (girl: 23.4%, boy: 23%) category in the Motor Engaged subdivision. A broad range across four days of Kevin’s floor hockey unit between the highest and lowest percentage time was identified in the Cognitive the category for the target boy students: 38.2% in day one, 30.8% in day two, 19.4% in day three, and 13% in day four. Difference between the target girl and boy was also found in the Cognitive category in day one lesson: 33.7% for girl and 38.2% for boy. The Waiting and On-task categories showed difference between the highest and lowest percentage of time at about 16%. Another difference in score between the target girl and boy was found in the Waiting
category in day one lesson across four days of Kevin’s floor hockey unit: 34.8% for girl and 29.2% for boy.

Figure 4.18: ALT-PE of Kevin’s floor hockey unit by category at the learner involvement level

**Floor Hockey Unit: Classroom Assessment Scoring System (CLASS)**

Figure 4.19 and Figure 4.20 present Kevin’s scores in each dimension and domain within the CLASS instrument during his floor hockey unit. Dimensions of the domains that Kevin scored in high range (Classroom Management: 6.6 and Student Outcome: 6.9) reached all high range: Behavior Management (7), Productivity (6.8), Instructional Learning Format (6.1), and Student Engagement (6.9). The range between the highest (7)
and lowest scores (6) in all these dimensions across four days of lessons was relatively less broad.

![CLASS by Domain: Kevin's Floor Hockey](image)

Figure 4.19: CLASS of Kevin’s floor hockey unit by domain

The Emotional Support (5.1) and Instructional Support (5) that reached mid-high score showed variance in scores across the dimensions. Although the score of inverted Negative Climate (6.5) and Teacher Sensitivity (6.1) was rated in high, the rest of dimensions under the Emotional Support were scored in mid range: Positive Climate (3.6) and Regard for Student Perspective (4.0). Instructional Support domain of dimensions also showed variance in scores: mid-low range in the Concept Development dimension (3.6) and high range in the Quality of Feedback (6.4.). A broad range across
four days of Kevin’s floor hockey unit between the highest (5) and lowest (2) score was found in the Positive Climate and Concept Development dimensions.

![CLASS by Dimension: Kevin's Floor Hockey](image)

Figure 4.20: CLASS of Kevin’s floor hockey unit by dimension

*Research Question 2: Why do teachers choose specific practices?*

This section will provide data related to Kevin’s rationale on the choice of his instructional practices observed during the dance and floor hockey unit and managerial practices.
**Instructional Practices**

Kevin made his instructional decisions within both the dance and floor hockey units dependent upon his students and time management. The findings related to the instructional practices will be separated by unit, dance and floor hockey.

**Dance Unit** Instructional practices during the dance unit were determined dependent upon students’ motor skills and time management. For example, the dance unit was taught through collaboration between Kevin and the music teacher in his building. Kevin described the process of their collaboration to choose appropriate folk dances, during which students’ motor skills were mainly considered:

Her (the music teacher’s) input to me was whether it is physically capable to be done at the 3rd grade level. This determination is based on motor skills along the lines of the correct way of dance. This is how we teach the kids to listen to the music while doing that. When it comes to teaching certain steps, you might depend upon me to teach sliding. For many of dances, they have to be able to skip, even at the 1st grade level, so it’s very important before we start a dance unit to make sure everybody can skip. (Kevin, Interview #1)

Kevin also mentioned class scheduling issue to arrange the dance unit. According to his notes, taking four classes (PE, art, music, and library) together is “much more efficient and it allowed us to give them daily PE” (Interview #4).

**Floor Hockey Unit.** Kevin described several instructional practices that he implemented into the floor hockey, such as use of modified games, Sport Education model, and game approach. For the most part, his decisions on the instructional practices were dependent upon his students, in terms of not only students’ prior learning but also their current developmental stages, skills and game ability. He commented:

If you don’t modify (games), then you are introducing things that are inappropriate for their physical and mental development stages......To assume that everything taught in fifth grade can be taught in kindergarten is ludicrous and
wrong. But at the same time, the game can be modified to make an easier transition to the next grade level and to the next level of performance. It is not a matter of just learning from me; it is also a matter of emotionally, socially, and physically developing right along side of what I am introducing. (Kevin, Interview #4)

Actually, what I like to do with my first lessons is to catch up with new students and to observe what is most important. That sets the tone for the next lessons. Also, it puts the students and the teacher on the same page, because they are having input. It allows more cooperation when we do go to certain drills to correct problems because the kids are saying ‘oh, we identified that’. (Kevin, Interview #2)

I am more concerned with lesson two while lesson one is going on. Knowing what to teach, when to teach, and how to teach should be driven by your observations and reflections. By setting up the managerial, the game itself, and the allowance of them to play prior to any skill instruction, allows you to see what the children have brought to the game, what skill the already posses, what they have retained from previous learning, and what they have learned from other teachers and coaches. Then, you can more efficiently design a lesson that is more effective and more geared towards their needs rather than having kids say ‘oh, we already know that’ or ‘not that again’. Plus, they are highly motivated because they know they are playing the game right away. (Kevin, Interview #4)

To enhance learning, Kevin adopted the modified game approach and Sport Education model into his floor hockey unit. He designed every single lesson to start and finish with playing games and if needed, he taught skills and drills during and between games. Kevin explained why he chose the game approach:

I use primarily the game approach because everything you teach is a skill that is relevant to them. They will know how it relates because of the competitive end of the game..... there is no reason why the game itself could not be employed as a motivator. For instance, when I switched Chris’s hand on the stick, it becomes immediately rewarding to his body because now that feel will actually will work better for him. This allows faster learning because the child understands why you are doing it. The game approach allows that. (Kevin, Interview #2)

Adoption of the Sport Education model was also believed to increase student learning and motivate students. Kevin assigned students’ roles (e.g., clock, referee, coach) outside of the game floor according to the students’ position during the game play.
The students were responsible for different roles as they rotated their positions in the game. He explained how he adopted the element of Sport Education:

What I have found by giving them roles from the sport model is that it has allowed them to be better observer. If they are sitting out, then it doesn’t mean that knowledge is not taking place because they are given roles. And you notice, when you are a referee, a constant attention to the game. And when you are running a clock, you understand the elements of ‘gee, they should hurry.’ Those kinds of concepts carry on the floor. Then when you add the coaching into it, some kids start naturally coaching themselves by yelling things like ‘you are off sides’, ‘get back here’, ‘go over there’, and ‘get in front of the goal’. This helps them play, and it also teaches them to be a good teammate. (Kevin, Interview #2)

Kevin indicated that the use of the roles from the Sport Education model allows “for the most effective use of time for that sport” (Interview #4) and “to learn more through the roles in the game plan” (Interview #4). He also presented his view on students learning by adopting the element of Sport Education model:

It (giving roles in the game play) naturally motivates them to practice harder and more efficiently…..It is the only reason I do anything. If it maximizes learning, then that is why I am doing it. If it didn’t maximize learning, I wouldn’t do it. (Kevin, Interview #4).

*Managerial Practice*

Kevin’s decision on the managerial strategies (e.g., routines, rules, disciplines, consequences, etc) was made dependent upon the issues of student learning and time management. He basically implemented the same managerial practices across the content. He described his rationale as follows:

What I think I am really doing is I am not changing my (managerial) strategies based on the content; I develop behavioral expectations for the student, which is what I consider most important. In other words when I speak, the students must listen; and, I teach them what that looks like, sounds like and feels like. (Interview #4)
Kevin emphasized the consistent application of the rules and discipline to any circumstance. He explained the need of discipline as associated with students’ learning:

> You need that (discipline) to improve the quality of education in our schools. If you look at schools that are failing, then it is not only the academics that are failing, but also it is the off task and sometimes violent behaviors that exist in the schools that are leading to this failure. People have refused to hold students accountable to a higher expected behavior; this behavior goes to the academics. When behavior expectations are raised, so does academic success (Kevin, Interview #4).

In addition, time management issues were considered to make decisions about the managerial strategies, such as routines and rules. Kevin commented:

> It is purely to maximize the minimal amount of time that I have with them. It maximizes the 45 minute time I have with them by reducing any terrible transitions and off task behavior. If I can eliminate that, I can get the most out of the 45 minutes, and that is the only reason I have my strategies. (Kevin, Interview #4).

**Research Question 3: How do teachers develop competencies within their profiles of professional practices?**

This section will be devoted to providing findings of data on Kevin’s learning experience associated with the observed teaching patterns and practices, in terms of instructional practices in each of his dance and floor hockey unit and managerial practices across the unit. In answering this question, Kevin described his personal experiences from several areas such as personal life, self-learning, past teaching experiences as well as collaboration with other professions. In addition, the process of developing competencies in his teaching was called ‘constant revision’, which included repetitive process of his learning from several experiences, implementation, and reflection. In this section, his learning from several areas will be presented by each unit and then the process of constant revision will be specified according to his description.
**Instructional Practices**

*Dance Unit.*  Kevin rated his expertise in dance and in teaching dance as 6 out of 10. He described his physical learning experiences and self- and collaborated-reflection on teaching experiences in dance with the music teacher who was the co-teacher in his dance unit, through which he made decisions on the selection of dance types to teach and teaching strategies in his dance unit. He commented how his physical learning experiences with the music teacher, especially, in dance impacted his decision on his dance unit:

> When it comes to dance, you actually have to be able to do it. In other words, you have to be able to get out there and practice in an open space, which is not some you can really pick up from the word. ...... With the music teacher, we actually could physically get out there and decide what we wanted to do. That makes it more likely that we would say ‘yes, that is more doable’ or ‘no, that is not doable’. Once you make those kinds of determinations, you are more likely to stick with that in your unit. (Kevin, Interview #1)

Kevin also valued his learning from past teaching experiences. He has attempted to provide better teaching in dance through trial and error. He commented:

> We (Kevin and music teacher) have been doing this (dance unit) together for a long time and so it evolved. It is better today than it was last year, and it is better because it based on trial and error. (Kevin, Interview #1)

Children, we like to say children, are different today than they were in the past.....you learn from your own mistakes if the strategies are the same, then you are not really worrying much as a teacher, I think. I mean, I’ve gotten better in teaching dance simply because I learn how to communicate better, to choose ways to put things together, and to take advantage of things on the floor. Those are the kinds things are involved over time based on experience. (Kevin, Interview #1)

Overall, Kevin developed his competency in teaching dance through his own learning and past teaching experiences along with the collaboration with the music teacher.
Floor Hockey Unit. The content area knowledge and instructional strategies that Kevin adopted in his floor hockey were learned from his self-learning and teaching experiences. Related to learning the floor hockey content, he commented on self-learning:

I self taught it. In other words, I had to learn it myself because I knew it was in the graded course of study here. I found the book and it made sense to me. I mean it was very, very simple. (Kevin, Interview #2)

Kevin learned and developed his instructional strategies based on his experiences with his own children and past teaching experiences:

I think it is experience. I think I get better and better each year of making adaptations. I am a little bit better at it because I have kids of my own. (Kevin, Interview #4)

Everything I do is to build upon from my experiences in the past. So I really can’t identify any one time when I said I am going to do it this way. I have grown into doing things the way I do and I am constantly correcting my own mistakes. (Kevin, Interview #3)

I think my delivery (of lesson) comes from experience and from understanding and studying of what we have deemed most effective for teachers to do in group setting. (Kevin, Interview #3)

Kevin has been taking several courses at OSU, during which he learned several things such as skill development, instructional design, and effective teaching. He noted that “several of them have influenced my teaching” (Interview #2). In addition, he articulated his learning and working with a professor at OSU as collaborative:

I think it was more of a two way street. I think I also implemented some new ideas, some new ways of doing it, at Ohio State in their program. In fact, Daryl Siedentop will tell you that this site has been studied more than most sides. I think a lot of that has to do with some of his work as well. So it was a two way street. I think it was a collaboration of learning. I learn from them; they learned from me; and together, we have matured into what is taking place right now in the gym (Kevin, Interview #3).
Overall, Kevin learned the content of dance and floor hockey and teaching practices from his personal experiences (e.g., self-learning, life experience, and past teaching experiences) and collaboration with other professionals. He added reflection procedure to his learning experiences to explain how he has developed competencies in his teaching practices. He also described how his reflection of on his teaching drove his teaching practices throughout his teaching career:

I would say the only changes that really occur in the unit are based on the reflection, which is what drives any kind of change in my lesson. You start out using your structure from the past and what you have done in the past, but that in and of itself is a reflection. So, reflection pretty much drives my lessons. It drives what I am going to teach next, and it drives what I am playing for; it drives major changes that I might implement next year. (Kevin, Interview #3)

I keep looking and looking because I am never satisfied I am doing a good job. So I am always looking for ways to tweak or improve my points as a teacher. And ultimately to do that just for the kids that weren’t successful. (Kevin, Interview #3)

Kevin referred to the process of his learning to teach as ‘constant revision’. He highlighted that the reflection on his teaching is critical to improve and develop competencies in his teaching practices. Finally, he concluded as follows:

I would say I learned from a lot of areas. I learned from being a teacher and I learned from the kids, the parents, and other teachers. There is a constant revision for me. That is why with interns the most important part of the lesson plan for me is if they can learn to reflect because from that reflection should drive any changes that are positive. I believe that you can meet the needs of the child if you reflect carefully. Reflection is learning from my own teaching, and it has been very valuable (Kevin, Interview #2)

Elis

Elis is a female teacher with 21 years of teaching experience in the Columbus Public school district. She travels between two schools in the district and has been
teaching at those schools for 14 and 8 years, respectively. This study was conducted at one of the 4th grade classes at the school where she has been teaching for 8 years. The school is located in northwest Columbus. Concerning learning experiences, Elis described her participation in various continuing education courses provided by the district and the Ohio State University. In addition, she has supervised several OSU student teachers at her school site as a cooperative teacher. Recently, she has been involved in one of the research projects conducted by faculty members and graduate students at OSU.

Elis’s school provides K-5 grade level instruction for her program. Diverse ethnic groups of students enroll in the school: White (48%), Hispanic (20%), African-American (16%), and Asian/pacific islander (14%). Although the school belongs to the Columbus Public school district, which is considered as an urban district, Elis believes that her students come from middle or upper middle socio-economic backgrounds. Data shows that 37% of the students at her school qualify for discounted or free lunch, which is lower than the district level rate (54%). However, Elis described the gym and available facilities as poor. The gym is utilized for both physical education class and cafeteria during breakfast and lunch so that the space for the PE program is very limited with tables around the walls of the gym. She also indicated limited equipment for her classes such as only two basketball goals in the gym. Physical activity resources at the community level around the school are considered positive. However, Elis mentioned that one of her principal’s and the district’s level of support for the PE program was weak. The principal believes that specialist areas are just free time. In addition, the school district keeps
cutting the number of district physical educators due to financial limitations. The students in her school were taught physical education once per week for 45 minutes per section.

*Research Question 1: What profiles of teaching practices in the ALT-PE and CLASS instruments can be distinguished for teachers units?*

*Dance Unit: Description of Observed Teaching Patterns and Practices*

Elis had three dance unit lessons focusing on square dances to prepare her students for a school event, square dancing night. She covered four square dances and several steps during the unit. Each lesson started with either warm-up, which consisted of moving around the gym with locomotor movements (e.g., hopping, galloping, jumping) or directly getting the students into a large circle in the center of the gym and letting each of them get a wrist band which was utilized to get a partner by color. Several behavior management strategies were consistently identified across the lessons and units. For example, Elis used stickers to provide positive reinforcement. Whenever Elis recognized good behavior among students, such as answering questions correctly, quick freezing, paying attention to the teacher, and helping Elis and/or their classmates during the instruction and activity time, the students received a sticker from her desk in front of the gym. In addition, after Elis reviewed the skills of the day at the end of the class period, students returned their wrist bands to the basket and Elis recognized the best student of the day for the sports award. Then, students lined up against one of the walls close to the exit and tapped out one of traffic lights on the wall, a red light, a yellow light, and a green light before they left the gym. Each color of traffic light (green, yellow, and red) corresponded to the level of student behaviors: green light (good behavior and participation so students can go back to their classroom), yellow (caution: students should
watch how their behavior was or how they performed that day), and red (stop: they either had to sit out of the activity or had to talk with Elis more than one time). Elis verbally agreed or disagreed with the students’ recognition of their behavior levels to remind them of her expectation of the students’ behaviors in class.

In the first lesson, basic steps for the square dances were taught and practiced with a partner: swing your partner, join hands and circle to the left and right, promenade, and honor your partner. Students practiced these steps with their partner by switching the partner to the music. Then, the class was organized into the square formations in which four couples were placed in a set. One from each couple wore a vest to dance as a male. Students learned and practiced another square dance consisting of the basic steps to the music. Since the number of students was not even for the square format, the class was organized into two square sets and one sub-couple in each set, so that one of couples in each set was replaced by the sub-couple. Once they learned the steps, one set performed the dance to the music and another set sat and watched the dance of other groups.

The second lesson started with a review of the partner dance that students learned in the first lesson after wearing wrist band as a warm-up of the day. Students got a partner by matching the color of their wrist bands and one student from each couple wore a vest. Elis put four couples in a set for square dancing. Students reviewed and practiced what they learned in the previous lesson to the music. Then, each set of the group graded another group’s dance ability, with one group performing a dance and the other group grading the dance. After grading, Elis introduced the DoSiDo step to practice another square dance song. Students practiced the square dance including the DoSiDo step to the music. Students received and reviewed their grading sheet completed by peers while
returning their wrist bands. Elis announced the sportsmanship award. Finally, students recognized their behavior level by tapping out the traffic light on the wall before leaving the gym.

Students got a wrist band as soon as they entered the gym. Elis asked students to get a different gender of partner and make four couples of three sets. They reviewed the steps that they had learned so far and danced to the music. Then, Elis introduced two more steps such as making a star to complete another square dance with the DoSiDo step. The last dance was completed by adding one other step, joining hands and moving to right and left, to other basic steps. Elis asked some of the students from each set to move to another set between the dances to let the students have different partners. After the dance practice, students lined up against the wall and tapped out the traffic light on the wall before they left. Overall, five square dance was taught during the dance unit.

*Dance Unit: Academic Learning Time-Physical Education (ALT-PE)*

Figure 4.21 displays the percentage of time class and students spent in each subdivision at two decision levels (context level and learner involvement decision level) in the ALT-PE instrument during Elis’s dance unit. In the context level, Elis spent the highest percentage of class time in the Subject Matter Motor (37.9%) subdivision, followed by Subject Matter Knowledge (33.5%) and General Content (28.6%). The percentage of time between each of the subdivisions was not prominently different. The target students demonstrated almost the same percentage of time spent in each subdivision. They were engaged in majority of class time in the Not-motor Engaged activities (girl: 69.8%, boy: 69.3%) and the remaining percentage of time in the Motor Engaged activities: 30.2% for the girl and 30.7% for the boy. The range between the
highest and lowest percentage of time in each subdivision was similarly reached between 16% and 14% for subdivisions at the learner involvement level.

Figure 4.21: ALT-PE of Elis’s dance unit by subdivision

Figure 4.22 presents percentage of class time devoted to the categories within context level of subdivisions in the ALT-PE instrument during Elis’s dance unit. Within the context level of decision, the category with the highest percentage of time spent during the dance unit was identified as Scrimmage (27.5%). The percentage of class time that was devoted to the Subject Matter Knowledge was mostly spent in providing information about Strategy (17%) and Skills Practice (10.4). The majority of the remaining class time was distributed to the Transition (15.1%) and Management (10.1%)
in the General Content subdivision. As shown in Table 4.6, none of categories showed relatively broad range between the highest and lowest percentage of time within each category. In general, the range was between 9% (Techniques: 13.2% in day one, 9.1% in day two, and 18.1% in day three) and 3% across the categories.

Figure 4.22: ALT-PE of Elis’s dance unit by category at the context level decision

Figure 4.23 displays the percentage of time students engaged in each category within learner involvement decision level of subdivision (Not-Motor Engaged and Motor Engaged) in the Alt-PE instrument during Elis’s dance unit. Although the scrimmage category within the Subject Matter Motor subdivision was the highest category at the context level, the class at the learner involvement level spent the highest percentage of
time on the Cognitive category within Not-motor Engaged subdivision at the learner involvement decision level for both the girl (37.2%) and boy (37.2%). However, almost of the whole Motor Engaged subdivision of time (girl: 30.2%, boy: 30.7%) was spent in the Students’ appropriate motor performance of category, which was very close percentages of time on the cognitive: 30% for the girl and 30.7% for the boy. The rest of the time was mostly spent in the On-task (girl: 17.8%, boy: 18.7%) and the Waiting (girl: 14.2%, boy: 12.8) categories in the Not-motor Engaged subdivision.

Figure 4.23: ALT-PE of Elis’s dance unit by category at the learner involvement level

As shown in Table 4.6, the motor appropriate category had a relatively high range between the highest and lowest percentage of time compared to other categories across three days of Elis’s dance unit: 28.8% in day one, 22.8% for girl and 24.4% for boy in
day two, and 38.4% for girl and 38.9% for boy in day three. Both the target girl and boy were engaged in similar percentage of time in each category. The most difference of percentage of time between the girl and boy was identified in the Waiting (girl: 16.2, boy: 13%) and On-task (girl: 13%, boy: 16.2%) in day three at about 3%.
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Table 4.6.: Variance in categories of ALT-PE across lessons in Elis’s dance unit
Dance Unit: Classroom Assessment Scoring System (CLASS)

The overall scores in four domains during Elis’s dance unit are displayed in Figure 4.24. Elis scored in the nearly high range across three domains: the Emotional Support (5.9), Classroom Management (5.7), and Student Outcome (6). However, the Instructional Support domain was scored an average in the mid range (4) because of the remarkable difference in the score between the dimensions such as Concept Development and Quality of Feedback, under the Instructional Support domain. A broad range between the highest (7) and lowest (5) score was identified in the Student Outcome domain at 2.

Figure 4.24: CLASS of Elis’s dance unit by domain
Figure 4.25 presents the average scores and the range between the highest and lowest in each dimension of the domains in the CLASS instrument during Elis’s dance unit. Elis scored mid-high range in the most of dimensions including inverted Negative Climate dimension (7) but the Concept Development (2) dimension within the Instructional Support (4) which was reached the lowest score among four domains. For example, the average scores of the Positive Climate (6.2), Teacher Sensitivity (6), Productivity (6), Instructional Learning Format (6), Quality of Feedback (6), and Student Engagement (6) were rated in the high range. Elis rated mid-high range in the Regard for Student Perspective (4.3) and Behavior Management (5) dimensions. A broad range across three days of Elis’s dance unit between the highest and lowest score was found in the Regard for Student Perspective and the Concept Development dimensions. The highest and lowest scores for the regard for student dimension were rated 6 and 2, respectively. The concept development dimension reached between 4 and 1.
Basketball Unit: Description of Observed Teaching Patterns and Practices

The basketball unit included a total of six lessons. Most lessons had the same routines such as warm-up with locomotor movements (e.g., hopping, jumping, galloping) and closure (e.g., review the lesson and tapping out the wall) as Elis had incorporated into the dance unit. Also, students who showed good behaviors during the lesson got stickers right after the good behavior took place. The first three lessons focused on several basic basketball skills, such as dribbling, passing, and shooting and then scrimmage types of games were arranged for the rest of the lessons.

The first lesson focused on dribbling. After the warm-up, Elis reviewed the critical elements and rules associated with dribbling skills that students learned last year. Students got a partner and practiced dribbling without and with a ball moving around the space. One person in each group dribbled a ball as an offender while the other person worked as either a teacher or a defender on the spot. Then, the offender from each couple dribbled around the gym and the defender worked on defending against any offender close to them while keeping one foot on the spot. Elis had one more dribbling activity to increase speed and to emphasize head-up posture during dribbling. Cones were set up around the gym and offenders knocked down the cones while dribbling. Defenders moved around to pick the cones up. The students then switched their roles. After the activities, students sat in the center of the gym and filled out an assessment sheet asking about the critical elements of dribbling skill. Elis announced the sportsmanship award and students left the gym by tapping out the wall.

After the warm-up in the second lesson, Elis reviewed the critical elements of the dribbling skill that students learned in the first lesson. Students obtained a partner by
matching wrist band color and practiced dribbling skill as a defender and an offender with a ball. Each couple moved around the space by dribbling and defending against the dribbler. Students also practiced several pass skills, such as chest pass and bounce pass with their partner. Students then formed groups of four and each group practiced a keep-away game, in which three people dribbled or passed a ball to each other and one person stayed in the middle to defend against the other three. Each group member switched their roles during the game. After this game activity, Elis explained the defense zone and the roles of each position. Two teams (4 in each team) demonstrated playing games against each other as an offender and a defender by staying in their defense zone. The offender could use dribbling and passing skills. However, the whole class could not get involved in the game because of limited class time. Elis reviewed the skills with her demonstration and rules of the game. Students returned their wrist bands and got into the exit line. Elis presented the sportsmanship award and the students left the gym by tapping out the wall.

The third lesson focused on shooting skills. In addition to the two shooting baskets in the gym, Elis left four trash cans in the center of the gym and utilized them as baskets as well. The class was divided into three groups. Two groups practiced shooting from the free-throw line and the third group attempted to shoot balls into the trash cans placed in the middle of the gym from two opposite sides. The groups rotated and practiced shooting skills toward different baskets. After the practice, students returned their wrist band and left the gym by tapping out the wall.

The fourth lesson started with warm-up with locomotors movements (e.g., hopping, galloping, jumping) around the gym. Elis verbally reviewed the critical elements of basic skills that the students learned in previous lessons such as passes and
The class was divided into two groups, each of which was assigned one basket. The students in each group found a partner and practiced running and shooting with their partner. Then, Elis introduced defense and offense roles into the game. First of all, the students worked in the defense zone, for which Elis introduced roles of each position in the team: guard, center, and forward. She placed a hoop for each position on the floor and had the students stay at least one foot inside of their position hoop. Then, the offensive team was added and taught to move around the space to pass, dribble, and shoot against the defensive team. Elis explained and demonstrated the defense zone and the offense team’s movement with students and the class started playing on a half court of 4 vs. 4 games under each of the baskets. The lesson ended with completing an assessment sheet with their partners regarding the defense zone positions, rule, and roles of offense. Students returned the wrist bands and left the gym after sportsmanship award was presented and tapped out the wall.

The fifth lesson was arranged for playing five-on-five full court basketball games. The class was divided into three teams. While two teams were playing one game, the other team sat on the side of the gym and served as referees, calling out such infractions as traveling, turn over, jump balls, and double dribbling. Elis provided the playing students with feedback during the game regarding the rules, skills, and tactics. Teams were rotated to play games or to work as referees. The last lesson started with assessment, in which each student answered questions about basketball rules, critical elements of skills, and positions on the sheet. The students also asked to evaluate the activities within the basketball unit anonymously. After the assessment, students were divided into three teams and got involved in either playing games or working as referees as they did in the
previous lesson. Students left the gym by tapping out the wall during both the fifth and the last lesson of the unit.

**Basketball Unit: Academic Learning Time-Physical Education (ALT-PE)**

Figure 4.26 displays percentage of time the class and students spent in each subdivision at the context level and student involvement decision level in the ALT-PE instrument during Elis’s basketball unit. The basketball unit lessons spent the highest percentage of time in the Subject Matter Knowledge subdivision (37.8%) at the context level. The Subject Matter Motor domain (34.1%) was identified as the next highest percentage of subdivision. The class also spent more than one-fourth of the time in the General Content domain (26.1%). Overall, none of the domains at the context level showed a significantly broad range between the highest and lowest percentage of time.

Figure 4.26: ALT-PE of Elis’s Basketball unit by subdivision
In the learner involvement decision level, both the girl and boy were engaged the majority of class time in the Not-motor Engaged subdivision (76.6% for the girl and 77.5% for the boy). The rest the time was spent in the Motor Engaged subdivision (23.4% and 22.5% for the girl and boy). The range between the highest and lowest in each domain at the learner involvement level was about 20% across the Not-motor Engaged and Motor Engaged domains.

Figure 4.27 shows the percentage of time the class was distributed across categories under the context level of subdivisions in the ALT-PE instrument during Elis’s basketball unit. The majority of class time spent in the Subject Matter Knowledge subdivision was devoted to the Strategy category (22%) at the context level. The percentage of time spent in the Subject Matter Motor subdivision was almost evenly devoted to either Skill Practice (17.4%) or Scrimmage (16.7%). The majority of time devoted to the General Content subdivision was mostly spent in Transition (17.1%) from one task to another and engage in non-instructional task (Management: 9.3%). Since the lessons were arranged for either skill practices or scrimmage during the basketball unit, the range between the highest and lowest was broad across six days of lessons in the practice (between 40.5% and 0%) and scrimmage categories (38.9% and 0%): 33.7% in day one, 23.4% in day two, 40.5% day three. 6.9% in day four, 0% in day five and six for the Skill Practice, and 0% in day one, 1.9% in day two, 0% in day three, 29.2% in day four, 38.9% in day five, and 30.1% in day six for the Scrimmage (Table 4.7).
Figure 4.27: ALT-PE of Elis’s basketball unit by category in the context level

Figure 4.28 presents the percentage of time students engaged in categories within student involvement decision level of subdivision in the ALT-PE instrument during Elis’s basketball unit. Both the girl and boy were involved in the cognitive category (girl: 42.5%, boy: 42.7%) with the highest percentage of time across categories of the subdivisions (Not-motor Engaged and Motor Engaged) at the student involvement decision level. The rest of percentage of time students engaged in the Not-motor Engaged subdivision was distributed to the students’ engagement in the On-task (girl: 19.5%, boy: 18.8%) and Waiting (girl: 12.5%, boy: 13.5%). They were engaged the majority of percentages of time on the Motor Engaged subdivision in the motor appropriate (20.4% for the girl and 19.3% for the boy) category.
As shown in Table 4.7, broad discrepancy between the highest and lowest percentage of time within the category across six days of Elis’s basketball unit was exhibited in the Waiting category between 31.1% in the third lesson and 0% in the first lesson for both girl and boy. In addition, the range in the Cognitive category between the highest (girl: 50.3%, boy: 56.5%) and lowest (31.1% for both the girl and boy) was relatively broad at the learner involvement level. A significant difference between the target girl and boy across six days of lessons in each category was not identified but the most difference was about at 6% in the Cognitive category between girl (50.3%) and boy (56, 5%) in day five.

Figure 4.28: ALT-PE of Elis’s basketball unit by category at the learner involvement level
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Table 4.7: Variance in categories of ALT-PE across lessons in Elis’s basketball unit
Basketball Unit: Classroom Assessment Scoring System (CLASS)

Figure 4.49 shows the scores in four domains of the CLASS instrument during Elis’s basketball unit. Elis scored in the high range for Classroom Management (6.4) and Student Outcome (6.4) dimensions. The Emotional Support domain (5.6) was scored close to high range on average. Mid range of score was rated in the Instructional Support domain and the range between the highest (6.5) and lowest (2.5) scores in this domain was relatively broader than others.

![CLASS by Domain: Elis’s Basketball](image)

Figure 4.29: CLASS of Elis’s basketball unit by domain

Figure 4.30 displays the score in each domain of dimensions in the CLASS instrument during Elis’s basketball unit. The dimensions associated with the Classroom Management and Student Outcome domains reached in high range of score were all rated in high range: Behavior Management (6.4), Productivity (6.4), and Instructional Learning.
Format (6.2) in the Classroom Management and Student Engagement (6.4) in the Student Outcome. The dimensions under the Emotional Support domain scored in the mid range except inverted Negative Climate dimension, which was rated 7. Among the Emotional Support domain of dimensions, the Regard for Student Perspective dimension (4.2) was rated slightly lower than others and exhibited a broad range between the highest (6) and lowest (2) scores during Elis’s basketball unit. A different range of scores was rated in the Instructional Support related dimensions. The Concept Development was scored an average of 3 and the range between the highest and lowest in this dimension was broad: highest score 6 and lowest score 1. The other dimension, Quality of Feedback, was rated an average of 6, which was high, and the range was between 7 and 4.

Figure 4.30: CLASS of Elis’s basketball unit by dimension
Research Question 2: Why do teachers choose specific practices?

This section will provide data related to Elis’s rationale on the choice of his instructional practices observed during the dance and basketball unit and managerial practices.

Instructional Practices

Elis taught several square dances in the dance unit and utilized diverse activities to practice basic basketball skills and play games during the basketball unit. Two specific instructional practices, which were implemented across two units, were discussed: progression and peer-assessment. Elis followed a progression from simple to complicated while planning lessons across the unit. She commented that “it seems natural to teach it in the order that they will need to perform it” (Interview, #6). She started teaching with basic steps and added more complicated steps for the dance unit. Activities utilized in the basketball unit were also organized by considering progression. She noted that “it is like a progression. I start with one, go to two, add yet a few more, add a few more so when I was planning it I am thinking of progression” (Interview, #5). Proceeding in this fashion was considered natural for her to teach. She described her rationale as follows:

It goes back to your basic training. When you are taking classes at Ohio State University, related to the developmental stages. Before you can do a full square dance, you got to learn the moves. Of course, you start with at the beginning of the dance—I am just thinking of square dance in particular. At the very beginning, when you honor your partner, you honor your corner. That is always at the very beginning of the dance, so we learn that simple thing; then you learn the other basic moves. At the end, you start to get to the harder dynamics of the dance. But for me, it seems natural to teach it in the order that they will need it to perform, like in basketball: you teach dribbling, then the passing, and finally the shooting. All of these steps lead to the final culmination of the game. (Elis, Interview, #6)
Peer assessment was also adopted as a way to hold students accountable for student learning across two units. Elis noted that “I feel that I need to hold the kids accountable for what they are learning. That is the sole purpose of the assessment” (Interview, #5). Elis believed that doing peer assessment allowed students to get more involved in the class and spend less time for waiting, in addition to learning more and causing fewer behavior problems. She commented:

You don’t want waiting. In physical education, you don’t want people sitting out and causing behaviors. You want them to feel like they are part of the game because they really enjoy that component. When everyone feels a part of the game, even though not actively on the floor, I think the activity is a success because everybody is involved in the activity. I think that goes back to peer coaching and refereeing; that is, you have to mark, and then they feel empowered, like they were an active part of that lesson. It is a skills game, and it is a thinking game. You got to be able to do both of them. The idea is you don’t want them waiting and misbehaving, so you keep everybody involved. (Elis, Interview, #2)

Elis considered mostly her students (e.g., skill level, learning, motivation) and the context (e.g., equipment, spacing, school event) to determine the instructional practices during each unit. Specific findings that describe how and why she chose the particular teaching practices in each unit will be discussed in the following section.

**Dance Unit.** Elis covered several square dances for the dance unit to incorporate a school event into her physical education program. Her school planned to host a square dancing night event so that school staff, including the principal, expected their students to be involved in the event by learning square dances in the PE classes. Although teaching only square dances for the dance unit was not her preference, Elis decided to teach the dances to support the school event. She described the process of making her plan for the dance unit:
Actually, I probably wouldn’t have done square dancing for that long, but my school was having a square dancing night, and they asked me if I could incorporate square dancing into the Phys Ed program. Usually, I like to do a variety of dances because a dance unit should not be just only one dance. If I was to do that again, it would not be a whole unit of square dancing. (Elis, Interview, #5)

Thus, Elis planned and organized instructional practices in the dance unit under the influence of an institutional event. In addition, as discussed earlier, Elis considered her progression of teaching the dance steps from basic to complicated and utilized peer-assessment to help students reflect and increase their learning.

Basketball Unit. While planning and teaching the basketball unit, Elis basically attempted to increase student learning considering several issues, such as students’ skill differences, motivation, equipment, and environment of the gym. For example, several activities were arranged and implemented during the basketball unit responding to students’ needs and motivation. At first, Elis considered skill differences between students and attempted to implement the activities such that all skill levels of students could be challenged. She commented:

You have varying skill levels, so you have to think how to differentiate the activities. Kids at basic level want to be challenged with an activity just as much as the kids with a higher skill. So, I try to look at the two differences and come up with activities that meet both of their needs. (Elis, Interview, #6)

Elis also tried to motivate students to be involved in the activities and to learn more with modification of the activities and use of current interests of the students. She believed that her efforts to change, switch, or add creative ideas to the activities contributed to an increase of motivation and excitement of the students toward the classes. She noted:

Basically, from the information I have gathered from other people, the activities are either too easy or too hard. So, it might be more exciting if you change it a little bit. By being creative, I think you can offer more motivation for students to
learn. Another way to make it exciting is to make it more current. You can make it more real as to what the kids experience today if you use terminology of what is current in either movies or sports. I think a lot of it is being creative and taking somebody’s ideas and adding to them or taking away from it. (Elis, Interview, #6)

Limited equipment and spacing were always considered challenging issues for Elis. For the basketball unit, only two baskets were available in the limited space of the gym so that Elis required modification of the activities for her situation. For example, she utilized trash cans as the third baskets for the students:

Limited space and having tables in your gym is challenging for me because we have two baskets. In a basketball unit, what are you to do with only two? Well you use trash cans. You use whatever means that you need to. (Elis, Interview, #6)

Overall, Elis was highly flexible in modifying the activities as far as meeting the needs of students, motivating students, and utilizing available equipment in her situation. Although the equipment and space of the gym was limited, she improvised and created activities that excited and challenged students.

Managerial Practices

Elis used several managerial strategies to recognize students’ behaviors during the class. For example, she used stickers as a quick reward for good behavior. The traffic light system provided students with the opportunity to reflect on their behavior each day. Elis also utilized the sportsmanship award system as “a way for parent feedback” (Interview, #, 6). She intended to increase parent and student involvement into her PE program:

It is to bring parent involvement into the PE program, as well as the kids. They are happy for the parent who got the award that week, or they are hoping to get it, so that is something they are working towards to get the sports award (Elis, Interview, #6)
Elis utilized the management systems to motivate students to improve their behaviors and to provide students with more chances to receive recognition, not just skill-based feedback but behavior-based feedback as well. Elis believed that positive feedback encouraged students to improve their behavior. She noted that “if you get positive feedback, you want to please the teacher. If it is no whatever teach and not praise anybody, they are not going to choose necessarily to perform to what you are hoping for” (Interview, #6). The sticker system especially helped Elis maintain good behavior during the lesson. She commented:

Like I said, the stickers are amazing. They say the positives feedbacks get positive behaviors, and it is so true. Everybody loves to be praised. The praising is going to get you way farther than the negative and the correctives, I think. So when I tell them ‘good job, go get a sticker, or thank you for tying their shoe’, it sets a tone for my class. It sets the tone that we are here working together cooperatively and that you get recognized for being a good classmate and for doing well. And, the kids who maybe don’t like or do well in Physical Education still have an opportunity for praise, because it is not all skill based. (Elis, Interview, #6)

Elis described her management systems associated with the time management issue. She believed that to run the management systems required no extra time but contributed to holding students accountable for behavior as well as a high activity time. She noted:

Primarily, they don’t take any extra time out of class per say. The only one that takes extra time would be the sports award, but that is at the end when they are lining up. However, the stickers and the tap out don’t take time away from the class. We want as much activity time as possible (Elis, Interview, #6)

In summary, several management systems were utilized to increase parent involvement and motivate better behavior among students. Elis also used the systems without using extra time so that she could continue to have more activity time during the class.
Research Question 3: How do teachers develop competencies within their profiles of professional practices?

This section will be devoted to providing findings of data on Elis’s learning experience associated with the observed teaching patterns and practices, in terms of instructional practices in each of her dance and basketball unit and managerial practices across the unit.

Instructional Practices

Dance Unit. Elis rated her expertise in square dance as eight or nine out of 10. Her competencies in teaching square dance were developed through her learning experiences of the dances in her childhood period and from her supervisor at the beginning of her teaching career. She described her past learning experiences in the square dances:

Like during a dance unit, my supervisor and I would look at her stuff like, for example, I would use her library of records and albums. I would possibly try my supervisor’s materials in my units. Another thing, I learned a lot from my parents who were in a square dancing club. (Elis, Interview, #5)

Elis felt comfortable enough with teaching the square dance, based on her past learning experiences in her childhood and training at the beginning of her teaching career to use no particular reference (e.g., textbook). She noted that “I have in the past familiarized myself with square dancing, but now I think I know it well enough that I don’t really have a textbook” (Interview, #3). Notably, she believed that it is possible to continue relying on her past learning experiences to teach the square dance unit because of the unchanging moves of square dances. Elis noted that “in a span of time it doesn’t go out of style. The square dancing moves, they are always the same. You might have
different music, you know different upbeat music, but square dancing moves are the same” (Interview, #5). However, once Elis replaced old records with CDs, she referred to the booklets that came with the music CDs to get information associated with the vocabulary and brief instruction of the square dances. She described how she utilized the booklet for her square dance unit:

The CD I have does have actual instructions with it. There is vocabulary, and I just relay that to the kids. But later on, I do give them like a vocabulary sheet to prepare for a little quiz at the end. (Elis, Interview, #4)

I actually had this CD as an old record one time, which with technology the record is a CD now. I love it. They had a booklet in it that talked about who the head couples were, who the side couples are, how to do the movements and everything. By reading, I was able to figure it out because of the booklet that came with the CD. (Elis, Interview, #5)

Overall, competencies to teach square dances were developed though Elis’s previous learning from childhood and her supervisor at the beginning of teaching career. She just utilized the booklet that came with the music CD to learn the official vocabulary and general information about square dances.

Basketball Unit.  Elis rated her expertise in basketball as nine or ten out of ten. Basically, Elis indicated the contribution of her experiences of learning by doing during her high school and college years as well as her past teaching career for teaching the basketball unit with highly rated competence. She noted that “it could be experience. I played basketball all through high school and one year in college, at a branch of OSU, probably somewhere through that you learn by doing, you learn by teaching” (Interview, #2). Elis valued her personal experiences as a player to improve competence and get ideas in teaching basketball, “Basketball probably because that is a sport that I did play I would probably say through my own personal experiences” (Interview, #5). In addition,
current instructional practices utilized in the basketball unit have been developed through previous teaching experiences, by trial and error. Elis described the change of her instructional styles in basketball throughout her teaching career:

In my earlier years, I would do a lot of stations. That is, one group would be dribbling, while another group would be passing, while another group would be shooting. So, it was all separated, and when it came time to start to play, it didn’t make sense because we didn’t really do offense and defense. That is why I changed it to more realistic game. (Elis, Interview, #2)

Elis reflected on her teaching and the various activities by using an exit ticket, on which she asked the students to write down their opinion on the activities at the end of unit. She believed that the exit ticket “helps me be a better teacher” (Interview, #2). Elis described how she used the exit ticket:

Students tell me what they enjoy. I learn a lot from this because the kids may not come up and talk to you one-on-one, but if they can write anonymously, they are very honest with their feedback. (Elis, Interview, #2)

Books and internet resources from the PE central website were considered valuable for new ideas along with personal learning experiences from playing basketball and teaching. Elis commented on her use of books and the internet for her basketball units:

I have some books, and I use the internet sometimes. I don’t even look at the last year’s plan because I want to keep it fresh and put a new spin on things. With my lessons, I might take a little bit of something from these resources and add something that I have done previously. (Elis, Interview, #2)

In summary, Elis developed her competencies in basketball through her personal experience as a basketball player during high school and college and previous teaching experiences with reflection through the exit ticket. In addition, she utilized books and internet resources to refresh and add new ideas to her activities.
Managerial Practices

Elis mentioned learning the management systems from her previous student teachers. Her student teachers attempted the management strategies and found out that the strategies were working to manage and improve student behaviors. After that, Elis consistently utilized the strategies:

Actually, the student teachers from Ohio State did it, and I love it. It is just a quick reward to keep them focused. I learned from student teachers. (Elis, Interview, #3)

The traffic light strategy was also introduced by student teachers at Ohio State. Elis continued to use this strategy by seeing “the kids, they are in control of what they thought their behavior was” (Interview, #5) in her class. In summary, several management systems were adopted from her student teachers at OSU as they showed positive impact on the students’ behaviors in her classes.

Lori

Lori is a female teacher working in Delaware, Ohio. She has been teaching for a total of 14 years in the current school district and for 10 years at North Western elementary school from which the data for this study was collected. She travels to another school within the same school district for two days per week. She graduated from the Ohio State University and took several video courses from Andrews University and Drake University regarding teaching students and improving student achievement. Lori has attended several workshops supported by the school district, such as the Quality Improvement Academy and district technology workshops provided by several education companies. In addition, she attended state- and nation-level conferences in the physical education area (e.g., OAHPERD, Midwest AAHPERD, and AAHPERD).
Lori’s school has a K-4 grade program and 88% of students are Caucasians. Other students consist of African-American (5%) and multiracial (5%) backgrounds of students. The students at her school are from high to low socio-economic families and 28% of the students are considered economically disadvantaged. A discounted or free lunch program is available for 26% of students in the school. Lori is satisfied with the gym in terms of the large gym size, facilities (e.g., six basketball hoops), sufficient equipment, and wood floor. She also mentioned the school principal’s excellent support for her ideas, changes in the program, and budget. The school community provides relatively good activity programs and parental involvement is indicated as fair. Her school district, as a small district including five elementary schools, two middle schools, and one high school, encouraged and supported the physical education department from K through 12 to begin the process of curriculum review, which impacts the physical education programs in the district schools. However, the district support has not been continued.

Research Question 1: What profiles of teaching practices in the ALT-PE and CLASS instruments can be distinguished for teachers units?

Dance Unit: Description of Observed Teaching Patterns and Practices

The dance unit consisted of three lessons. Each lesson included two or three station activities focusing on dance and throwing. The first dance lesson started with a review of modified electric slide dance learned in the previous foot dribble unit. Students practiced the dance with and without music. After this, the whole class divided into two groups and each group was engaged in either modified electric slide dance or overhand throwing for accuracy. In the dance station, each student practiced the modified electric slide dance individually by using handouts without music and then practicing with music.
When students came to the throwing station, they practiced throwing tennis balls at a wall target. Then, Lori gave five balls to every single student to test his/her throwing for accuracy skill as a pretest of the throwing skill. Half way through the class, each group switched their stations.

The second lesson started with learning 5-6-7-8 dance of steps. Then, Lori divided the whole group into three groups for three stations: the dance station, the “my work-out” station, and “throwing for both”. Students practiced 5-6-7-8 dance steps with handouts for the steps in the dance station without music. Students also designed “my work-out” activities in which they chose one activity from among those focusing on aerobic, upper body strength or endurance, and flexibility. All the throwing station, students threw balls toward a target that displayed a monetary value. Each group of students was assigned different target money aligned with their skill level. When the students attained their target money, they earned a ride on the scooter. The students rotated among each of these stations during the class time.

The third lesson involved the students’ own work-out activities that they designed in the previous class. The class had two stations for throwing: throwing at a moving target and throwing for Bobh. Students tried to throw at a moving hoop that was hung on the basketball hoop. The throwing for Bobh station was the same activity of the previous class except that no scooter was used in this lesson. After students rotated two stations, the whole class reviewed and practiced the electric slides and the 5-6-7-8 dances that they learned during this unit together.
Dance Unit: Academic Learning Time-Physical Education (ALT-PE)

Figure 4.31 displays the average and range between the highest and lowest percentage of time class and students spent in each subdivision at the context and learner involvement decision of levels in the ALT-PE instrument during Lori’s dance unit. Within the context level, more than 50% of class time was allocated to the Subject Matter Motor subdivision (56%). Lori spent about 30% of time in General Content subdivision (30.6%) and the remaining percentage of time was spent on Subject Matter Knowledge (13.5%). A total percentage of time the students engaged in Not-motor Engaged activities (girl: 72.7%, boy: 76.6%) was twice higher than Motor Engaged activities. The girl and boy students were involved 27.3% and 23.4% of time in the Motor Engaged subdivision, respectively.

Figure 4.31: ALT-PE of Lori’s dance unit by subdivision
Figure 4.32 presents the percentage of time that Lori spent in each category of context level of subdivisions during her dance unit. The majority percentage of dance class time was devoted to the Practice category (52.1%) in the Subject Matter Motor subdivision. The rest of class time that spent in the General Content and Subject Matter Knowledge subdivisions was distributed to warm-up (16.2%) and transition (11%) in the General Content, and Strategy (11.9%) in the Subject Matter Knowledge. As shown in Table 4.8, a broad range across three days of Lori’s dance unit between the highest (64.4%) and lowest (37.1%) percentage of time was identified in the Practice category: 64.4% in day one, 54.8% in day two, and 37.1% in day three.

![ALT-PE: Lori's Dance](image)

Figure 4.32: ALT-PE of Lori’s dance unit by category at the context level decision
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<th>Day 2 (%)</th>
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Table 4.8: Variance in categories of ALT-PE across lessons in Lori’s dance unit
Figure 4.33 displays the percentage of time students engaged in categories across subdivisions in the learner involvement decision of level in the ALT-PE during Lori’s dance unit. Within the learner involvement level, the highest category for the target girl was indicated as the Motor Appropriate (26.8%) in the Motor Engaged subdivision and a similar percentage of time was spent in the On-task category (25.5) while a little less time was spent in the Waiting category (22.6%) in the Not-motor Engaged subdivision. In contrast, the highest category of the target boy was recognized as the Waiting (27.4%) category in the Not-motor Engaged subdivision, while the next categories were On-task (24.7%) and Motor Appropriate (22.5%). Also, the target boy spent a similar percentage of time in the Cognitive (18.1%) category.

Figure 4.33: ALT-PE of Lori’s dance unit by category at the learner involvement level
Both the girl and boy showed a broad range across three days of Lori’s dance unit between the highest and lowest percentage of time in the Waiting category: the girl’s range was between 38.5% and 10.4% (18.8% in day one, 10.4% in day two, and 38.5% in day three), and the boy’s range was between 39% and 10.9% (32.2% in day one, 10.9% in day two, and 39% in day three). A significant difference between the target girl and boy was identified in the Waiting (girl: 18.8%, boy: 32.2%) and Motor Appropriate (girl: 37.5%, boy: 26%) categories in the first lesson of Lori’s dance unit (Table 4.8).

Dance Unit: Classroom Assessment Scoring System (CLASS)

Figure 4.34 presents Lori’s average scores and the variation between the highest and lowest scores in four domains in the CLASS instrument during her dance unit. Overall, her Classroom Management (6.3) and Student Outcome (6) were rated as high and her Emotional Support (5.8) was very close to high range. However, Instructional Support in Lori’s dance unit was scored at mid range (4.1) and the range between the highest (6) and lowest scores (2) was broader than other domains: ranging between 6.3 and 5.5 in Emotional Support, between 7 and 6 in Classroom Management, and between 7 and 5 in the Student Outcome domains.
Figure 4.34 displays the scores of each dimension within the domains in the CLASS instrument during Lori’s dance unit. She received high and middle scores in the dimension of the emotional support domain including inverted score of Negative Climate dimension (7); 5.5 in the Positive Climate, 6.2 in Teacher Sensitivity, and 4.5 in the Regard for Students Perspective dimensions. Lori’s management-related dimensions scored all in the high range: 6.2 in Behavior Management, 6.5 in Productivity, and 6.3 in the Instructional Learning Format. However, the Instructional Support domain of dimensions was scored at the mid range and the range between the highest and lowest score was broad. For example, the Concept Development dimension was scored an average of 3.2 and range between the highest and lowest scores was broad, between 6 and 1. Another dimension under the Instructional Support, Quality of Feedback, received an average of 5 and the range was between 6 and 3.
Figure 4.35: CLASS of Kevin’s dance unit by dimension

**Foot Dribble Unit: Description of Observed Teaching Patterns and Practices**

Lori taught two lessons of the foot dribble unit. The lessons started with steps of modified electric slides dance. Students learned two steps in each lesson and danced with music as a warm-up. After the warm-up, Lori gathered the students and explained the activity for the day. The first lesson of foot dribble unit focused on controlling the ball while dribbling. Students had a partner and some students were assigned as a “poison dribbler”, who also had a ball to dribble. When students were tagged by the poison dribbler, their turns were over and the partner had a turn to dribble around cones across the space. Lori rotated the students’ roles as a poison and non-poison dribblers.
After the students learned the steps of electric slides dance as warm-up in the second lesson of foot dribble unit, students sat in the middle of the gym to receive information of the lesson activity. Several cones set up across half of the gym as station obstacles and several scooters were spread across the rest of the gym for students to ride as moving obstacles toward dribblers. The students were divided into five teams and one of them was assigned as a moving obstacle group and one from each of the other teams worked on dribbling across the cones and moving obstacles. All teams had a chance to take a role as moving obstacles during the lesson. In the middle of the lesson, Lori gathered all students together to remind her expectation and redirect their behaviors within the activity.

Foot Dribble Unit: Academic Learning Time-Physical Education (ALT-PE)

Figure 4.36 displays the percentage of time the class and students spent in the subdivisions at the context level and learner involvement decision of level in the ALT-PE instrument during Lori’s foot dribble unit. Within the context level, the foot dribble unit lessons spent time in the order of Subject Matter Motor (41.9%), General Content (34%), and Subject Matter Knowledge (24.2%) subdivisions. Both the target girl and boy were engaged in Not-motor Engaged activities for more than three fourths of class time. Each of them spent 19.4% and 23% of time in the Motor Engaged activity domains. None of subdivision showed a broad range between the highest and lowest percentage of time across context level and learner involvement decision level.
Figure 4.36: ALT-PE of Lori’s foot dribble unit by subdivision

Figure 4.37 and Figure 4.38 present the percentage of time class and students spent in each category under each subdivision at the context level and learner involvement decision of level in the ALT-PE instrument during Lori’s foot dribble unit. Whole percentage of time the class devoted to the Subject Matter Motor subdivision was spent in the Practice category (41.9%). The majority of class time spent in the Subject Motor Knowledge (24.2%) was devoted to the Strategy category (19.6%). The percentage of class time spent in the General Content was distributed to the Warm-up (13.7%) and Transition (12.2%) from one task to another, and Management (7.4%). The range across two days of Lori’s foot dribble unit between the highest and lowest percentage of time was not broad across the categories but the most variance occurred in the Management category between 12.7% in day one and 2.1% in day two during her foot dribble unit. The
time spent for redirecting students’ behaviors in the second lesson contributed to the high
management time in the foot dribble unit compared to Lori’s other lessons of the foot
dribble unit and dance unit.

Figure 4.37: ALT-PE of Lori’s foot dribble unit by category in the context level
According to Figure 4.38, the target girl spent more than two-third of the time (80.6%) in the categories not related to the motor engaged: Waiting (27.5%), On-task (25.2%), and Cognitive (23.4%). The target boy also showed a similar pattern of spending time in each category under Not-motor Engaged activities. For example, the highest category was Waiting (24.2%) and the next two highest categories were identified as the On-task (23.6%) and Cognitive (23.4%) categories. The variance across two days of Lori’s foot dribble unit and between the target girl and boy occurred in the category of Motor Engaged subdivision. The target girl spent the following amount of time in Motor Engaged activities: Motor Appropriate (12.3%) and Motor Support (7.1%). The target boy spent a similar percentage of time with a little of difference in the Motor Appropriate
(12.5%) and Motor Support (7.1%) as like the girl, along with Motor Inappropriate (3.4%). A broad range across two day of lessons between the highest and lowest percentage of time was identified in the Motor Appropriate (16.3% for girl and 20.8% for boy in day one, and 8.4% for girl and 4.2% for boy in day two) and Supporting (0% in day one and 14.1% in day two). The target girl and boy showed the greatest difference in the engagement of Motor Inappropriate category within day two: 0% for girl and 6.8% for boy (Table 4.9).
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Table 4.9: Variance in categories of ALT-PE across lessons in Lori’s foot dribble unit
Foot Dribble Unit: Classroom Assessment Scoring System (CLASS)

Figure 4.39 shows scores in four domains of the CLASS instrument during Lori’s foot dribble unit. The overall score for each domain in Lori’s foot dribble unit was very similar with that of her dance unit. All domains except instruction were scored either very close to high range (e.g., 5.9 in Emotional Support or at high range: Management (6.1) and Student Outcome (6.75)). However, Instructional Support in the foot dribble was scored at a mid range (4.5), similar to the Instructional Support in the dance unit.

![CLASS by Dimension: Lori’s Foot Dribble](image)

Figure 4.39: CLASS of Lori’s foot dribble unit by domain

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Figure 4.40 presents an average and the range between the highest and lowest scores in each dimension of the CLASS instrument within Lori’s foot dribble unit. The dimensions under the Emotional Support domain scored in the mid and high range: 5.75 in the Positive Climate, 7 in the inverted score of Negative Climate, 6.25 in the Teacher Sensitivity, and 4.5 in the Regard for Student Perspective. All dimensions related to the Classroom Management domains were scored in the high range: Behavior Management (6.25), Productivity (6), and Instructional Learning Formats (6). However, she rated in mid range in the Instructional Support of dimensions: Concept Development (4.25) and Quality of Feedback (3.25). Student engagement was considered very high (6.75). A broad range between the highest and lowest score was identified in the Behavior Management (between 7 and 5) and Quality of Feedback (between 4 and 2) dimensions.

Figure 4.40: CLASS of Lori’s foot dribble unit by dimension

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Research Question 2: Why do teachers choose specific practices?

This section will provide data related to Lori’s rationale on the choice of his instructional practices observed during the dance and foot dribble unit and managerial practices.

Instructional Practices

Lori made her decision on her instructional practices dependent upon the students, her instructional perspective, district requirement, time management, and context. Detailed findings will be provided for both the dance and foot dribble units.

Dance Unit The instructional practices in the dance unit were adopted by considering mostly the students, such as students’ skill difference, better engagement and learning, safety issue, and interest as well as her instructional preference, district requirement, and time management. In respect to her choice of two dances, electric slides and 5-6-7-8 dance, for her dance unit, she explained her rationale for her choice of the individual type dances related to the students’ participation and her instructional preference:

I don’t like kids to have to have a partner. If someone’s absent, it just limits the participation for that one person. I don’t like to be a partner because I wouldn’t be able to move around and work with the kids that really need me. So I try to do things that can be solo and performed solo. I also like to do things like the 5-6-7-8 dance because you don’t turn around so that I felt we weren’t going to spend as much time on it and I knew it was going to be the last one. I wanted them to have someone to follow during the whole time because I knew if they just had someone to follow and they had that constant cue to move this way or that way that the steps would be familiar enough from the other dance that they could pick it up. That was another thing I didn’t want to have the same type of line dance where you have to turn and do those four sides. They are not real big on touching each other so it’s just a fight I choose not to have so I just try to do individual type things for that reason too. That’s a lot of the types of dances I would choose. (Lori, Interview #5)
Lori chose two dances for her unit and modified some of the dance steps by adding such features as jump and Tai-Bo kick. She noted that her changes “make it more fun and more engaging, more exercise, more fitting for everybody and hopefully have everyone be more successful” (Interview #1). In addition, the modification was somewhat necessary to connect the dance unit to aerobic fitness under the district standards. She commented:

Well the electric slide is a good dance it is fun and you know it is great to do it with your friends and stuff, but unless you do it, it is not that much exercise it is it very, very moderate exercise. But I want it to be a little more vigorous so I had to put some jumps and some kick things and different, more demanding movements. I wanted to change it enough that if they did it for the entire song, then they would be getting a pretty decent aerobic workout when we are done. So I didn’t think the electric slide as it was going to give them enough of a workout. So I wanted to get their heart beat up a little bit and increase their breathing rate, I wanted them to feel it that dance could be a great fun way to do aerobic exercise so (828-837, p. 19) because dance wasn’t in our curriculum, I had to sneak it in through aerobic fitness. (Lori, Interview #6)

Lori considered students’ ability to learn dances and to work in a station to make her instructional plan. For example, she extended her dance unit to the foot dribble unit as the warm-up to teach step-by-step before she had the dances in a station in the dance unit.

She described how she made her decision on the instructional plan for the dance unit as follows:

I’m trying to extend that dance thing into other weeks because one of the problems I generally have with dance is I have a group of high kids who really get into it and by the end of the first lesson, they’re ready to put the music on and take off and then I have this group of other students who could care less or really, they get overwhelmed by this whole dance concept and they think I can’t dance and they don’t think of it as just movement and that’s a road block for them so we have to get over that, by the end of the unit, only those high kids really get to enjoy the movement with music and the whole fun of dancing so I’m trying to introduce it in little bits and maybe more movement instead of dancing so they can take it in pieces and get comfortable with that part and then hopefully we

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have enough practice with it that we can put the music on and go for it and exercise, not just step step step so, (Lori, Interview #1)

Lori also added her comment on how her instructional plan could help students effectively use the hand-out in a given station:

I didn’t want to have the new dance as a station because I knew that if there was kids who couldn’t read the words fluently enough, then they wouldn’t be able to be able to figure out what it’s actually telling them to do. So if they were unfamiliar with it, then that would have been a completely wasted station and they would have been calling me consistently and very disruptive because they wouldn’t know what they were supposed to do because they couldn’t get the information from the paper so that’s another thing that I considered doing. (Lori, Interview #3)

Lori believed that use of hand-outs and station activities in her dance unit, in which students practiced dance and throwing in each station, made students keep interest in dance. She describes this as follows:

I’ve found that the hand-outs and not having dance as the complete focus of the lesson is good for keeping student interest. In addition, not having one dance as the complete focus and giving short breaks in-between also works for maintaining student interest. I think that keeps their interests more, as they are more intense when they are working on it. They can take a break from it. It seems like they have learned it better when they have that intense focus on it for a few minutes rather than a long drawn out time period where we might be slowing down to work with a certain kids who aren’t getting in, and another kids are ready to just do it with the music so the hand-outs that I use. I think they are really, really helpful, and it allows the kids to progress at their own rate. (Lori, Interview #5)

Regarding implementing station activities in the dance unit, Lori indicated several issues that influenced her decision: students’ learning opportunities, safety issue, and faith in her students as well as gym size. She believed that station activities provided students with more opportunities to practice for all skill levels of students within the limited class time. Lori commented on her rationale for using station activities in her dance unit along with throwing activities:
I choose the stations because I can do a lot more with the kids in the 45 minute periods, and the kids can do a lot more in the time too. I can organize station skills task activities where there is enough challenge for the kids who are at a higher level. They would get the same amount of practice time as a student who is at a lower level. They may not have the same task at that station, but they get the same amount of opportunity to practice, so that is one of the main reasons I use stations. I am trying to get more time on task, because 45 minutes a week is not sufficient, so I am trying to maximize that time. I just think if I can guarantee practice opportunity then it is a better start to increasing their learning. So that is why I choose stations a lot (Lori, Interview #6)

Her concerns about students related to the safety issue and faith in her students. Other issues involved choosing the instructional format (station activity) and the throwing activity along with dance practice. Lori commented:

One of the things that really will help me to decide whether the activities would be appropriate for something like this is whether there are any major safety concerns with the activity and with dancing. I am pretty sure with what we were doing there are different kinds of dance that I wouldn’t try some of those kinds of dance with, groups in stations. But with the kind of dance we were doing, I felt like unless someone was really doing something that was completely unacceptable to school rules and they weren’t going to get hurt, so I felt comfortable using that. Over hand throwing same thing because they weren’t throwing toward other kids. They were only throwing toward the wall so I felt that was okay….. I just have lot of faith in my kids that they know me and I know them and I know them well enough, I know these kids well enough that I know that I know maybe who I need to start who I need to make sure where they are every 30 seconds or so and just keep my eyes looking for them and so, that’s a lot of what helps me to decide. (Lori, Interview #3)

Lori believed that the sufficient space of her gym allowed her to implement station activities, dance, and throwing. She explained how the gym size influenced her instructional decision at this school and another school she travels to:

I thought that we could use the space well enough to have plenty of room for a throwing activity. I already had it marked off and I knew how much room I was going to need. With the class they only have 19 kids here today. So, with the class, you know, there is plenty of space to do both. (Lori, Interview #3)

A lot of the things that I did here, I did not do at my other school because of the gym sizes I could not have fit all of those things. We would have had balls.
traveling over top and through other people and we would not have had the space
to do that, so when we worked on over hand throwing, we only worked on over
hand throwing and we didn’t put anything else into. No stations it was more of a
group game of partnering type thing and we had targets on the wall, but all of the
targets were on the same wall and everyone was throwing from the other side of
the floor because the gym is so narrow that for fourth grade they need that
distance so we just did something completely different. (Interview #6)

Overall, Lori considered several issues to make decisions on the instructional
practices in her dance unit: her students, instructional preference, district requirement,
time management, and context.

Foot Dribble Unit. The instructional practices in the foot dribble were
determined following the district requirement (standards). The district department of
physical education has been working on a curriculum review and has developed specific
district curriculum and performance outcomes by grade. Lori contributed to this work and
supported the district requirement; consequently she has been teaching the foot dribble
unit beginning with the first grade students and has designed the current foot dribble unit
aligned with the progression in higher grades within the district requirement. Lori
described this progression:

Because the skill has been taught since the first grade, they have been working on
the skill since the first grade, well, kindergarten but we don’t get real picky. First
grade we work on the critical elements, second grade, we work on the critical
elements and start to work on the thinking ahead but it’s mostly just adding some
obstacles and making sure they are keeping the ball close enough that they can
make those changes so they have to dribble around station obstacles. Third grade,
it has a moving obstacle but no one is coming after them. It’s just a lot of
movement but no one is really coming to get them so there is this gradual
progression of the skill so in fourth grade, I’m not re-teaching it, I’m just trying to
advance them into more, tactical thinking and strategy and usage of the
skills….The district has all of the curriculum, it’s already written and it says
specifically what each grade level is going to do, what the performance outcomes
are supposed to be for each grade level, so that’s how I’m developing my lessons
based on that. (Lori, Interview #2)
Foot dribbling follows this really clean progression in our standards so it is really easy, you just build right on top of what you did the year before and as being their teacher for the last few years I know what we worked on and I have an idea of who is capable of doing what and I know what kind of things motivate them when we work on foot dribbling, so that progression and having spent the last few years working on that skill, it was fairly easy to come up with new challenges and start right in with what I felt they were going to be comfortable with and then take them from there. (Lori, Interview #6)

Lori described her modification of the hand dribble activity to foot dribble in this unit to meet the district requirement. She made modifications based on her thought of “what is going to be, what is going to give everybody the option to have a challenge and yet be successful at the same time” (Interview #6). Class size was considered in the process of her modification to provide all students with equal opportunities in each role (e.g., dribbler, obstacle on the scooters) and to achieve learning goals:

I try to consider class size, that’s one thing, like with this activity, it took me a lot to figure out how many teams I was going to need because I wanted to have enough people on the scooters, but I didn’t want to have so many people on the scooters, that’s too congested, still I think it was a little congested. So, that’s one thing. Um, then just like when I changed it from the hand dribbling, to foot dribbling the first time I did it a couple years ago, it was with my 5th graders they seemed to handle it pretty well, but then last year, I used it with 4th graders for the first time, and they did what I saw today, a lot of them would get to an open path and they would just kick the ball and it was like ‘wow I made it’. (Lori, Interview #2)

Therefore, Lori’s instructional practices in her foot dribble were designed to meet district requirement (standards and performance outcomes) and to increase student learning by considering class size.

Managerial Practices

Although a systematic management system was not visually identified during her instructional units, Lori described her management system as the ‘behavior wheel’, which
is utilized and required by the district. Teachers at her school, including Lori, modified and adopted their own system.

The three strikes is something that other teachers have done in their classrooms and we are required by the district, the whole district at the elementary level to use the behavior wheel. That is every elementary school has the same and we have paper work, we have triplicate forms actually that we have to fill out if a student moves a clip on the wheel, for any color that they move to even if it is their first move which is usually a minor thing…So a lot of teachers had their own systems and without having to have tokens and papers and everything everywhere, we just do the name on the board which is strike one, the circle which is strike two and then they have to sit and think for a few minutes about why they are sitting there and that usually helps because they don’t normally like to sit out….that was why I went as step two as a time out and then step three if they haven’t learned from sitting and watching and thinking then they go to the wheel and then they have to move their clip. And then at that time we fill out the paper work and the paper work gets there are three copies, one we keep one we send home for a signature and one goes to the office where they enter it into the data system. (Lori, Interview #6)

In summary, Lori’s school district has a great impact on her instructional practices (e.g., curriculum and performance outcomes) and management strategy (e.g., behavior wheel). In addition, the instructional decision was made based on her concerns about student learning (e.g., students’ skill difference, safety issue, interests), time management, and gym size.

Research Question 3: How do teachers develop competencies within their profiles of professional practices?

Lori integrated her learning experiences from workshops, internet resources, and her past teaching into the process of self-reflection to develop her ideas to teach her dance and foot dribble units. The following section will be devoted to her learning experiences and the process of implementing her teaching instructional practices in each unit and managerial practices across the unit.
Instructional Practices

Dance Unit  Lori taught electric slides and 5-6-7-8 dances in her dance unit.

Concerning the electric slide dance, she commented “that’s the one that everybody
knows” (Interview #1). However, when she taught the dance, she taught differently from
the original dance steps “to pep it up a little bit. So I just pick something that would get a
little more intensity into it, so I made some modification” (Interview #1). She described
the process of making decision on the modification as her Ah-ha! moment:

I got a lot of my ideas behind the wheel of my car. But I just think so many things
that can be tweaked little bit and even just more appropriate for what I want to get
out of them and I don’t know, just sometimes I can just can’t turn off my brain
sitting on my car and I’m thinking what can we do here. I don’t know, I just feel
like I’m constantly thinking about it, but I guess it’s as a good thing sometimes.
(Lori, Interview #1)

The internet (e.g., the PE central website) was considered to be one of the resources to
learn the 5-6-7-8 dance steps for her. Lori also attempted to modify the steps from the
original steps to meet her goals for the dance unit. She commented:

When I bought the CD, I got the 5-6-7-8 dance and I realized that it was a dance
so then I got the info off of PE central. I got the dance steps for it so then I just
took those and just modified them to make it a little more aerobic. (Lori,
Interview #5)

Lori also described her learning experiences in dance at the workshops in several
conferences (e.g., OAHerd, AAHPERD). Her consistent interest in dance led her to the
dance workshops, from which she could get ideas on dance skills to teach as well as how
to structure the dance lessons:

I go to a lot, when I got to a workshop, I try to go to something that’s dance every
time because there are so many ideas out there. And even though I don’t spend
time on dance, I still think that it’s such a valuable exercise option and it might be
the only one that some kids will ever do is dance and it that’s all they are ever
going to do then we’ve gotten get that heart pumping. While they’re doing it. So, but I love going to those. I love dancing with instruction. (Lori, Interview #5)

When you are at a conference you’re the student, and you go and you have Phys Ed which is great so you just get to be in Phys Ed class learn all these things and not only do you get to learn the new skills, but you see how the teacher who is doing it, approaches the lesson. They’re teaching you like you’re their student. I just love that because you see the whole thing in action and of course that doesn’t work quite as well when you get 10 year olds but, the whole concept of lesson is shown to you from beginning to end. So, I really like that I’ve gotten a lot out going to those and the modifying started with games and it’s like well, why stop there? Modifying everything. Make it fit what you need so. (Lori, Interview #5)

Lori has attended several workshops at the state and national level conferences and visited PE central website to get information on various dances. However, she attempted to modify them to fit into her lessons through the process of her reflection.

*Foot Dribble Unit.*   Lori has modified the activities that she has learned from several conference workshops to help her students achieve performance outcomes of the foot dribble skill under the district standards. She described the process of her learning experiences from the conference and her modification:

A lot of these came from when we used to have mid-west AAHPERD conferences, which I thought wonderful, they had, this one year, they just had so many things on lead-up sport games, it was not the sport at all, but all the skill development for the sport and there were so many ideas. This game is actually modified from a space jam game with hand dribbling. I use it for hand dribbling too. So, they also know the game then I don’t have to re-teach it. But, so, this is just that’s where I have learned a lot of those. And I just modify them and tweaked them. (Lori, Interview #2)

She also mentioned the PE central website as a valuable place to get information on a variety of activities:

On P.E. Central they do a really good job of giving those variations on their activities and that is a really nice way to get ideas but then also to see how they have made a change. So I am sure I have gotten a lot of ideas from there. (Lori, Interview #6)
Lori considered her learning experience from the workshops and PE central as valuable resources. However, she always modified them to be appropriate for her lessons and her students instead of adopting the activities as she learned from the workshops.

**Managerial Practices**

Lori’s school district utilizes the same management strategy. She has attended the workshop on the data-based teaching through the support of her principal. She described the workshop:

> I went to a workshop called Quality Improvement Academy, it was based on using data to improve all aspects of school so from the behavior which is where that came from, to reading scores to performance on math tests to bringing your tennis shoes for Phys Ed to it’s just self responsibility and it’s just they are showing so many ways to use data to improve what you are getting out of students so I try some of those things and they do work, they really do work. It’s just trying to find ways to implement them into what I’m doing. (Lori, Interview #2)

In summary, Lori rated her expertise 91/2 in teaching dance unit and 6-8 in foot dribble unit out of 10. She has learned dance steps and activities from several workshops and the internet. However, she always modified them to fit her lessons and her students through the process of her reflection. The modification and her reflection process were dependent upon her conformability in teaching the content. She believed that her comfort level in teaching the content could directly affect her teaching and her competency level in her teaching. She emphasized the need of consistent exposure to learning opportunities to develop competencies in teaching:

> I am not very good about working out of my comfort zone, so if I don’t feel comfortable with it, then I don’t end up getting very many ideas. So if I feel good about it, and I have a good grasp of it myself, then a lot of things will start falling into place and I will think oh I could do that and I could do that, but if I don’t really have that clear understanding myself, I don’t really know where to do or what ideas are going to work. So that is why I think going to workshop is the most
important thing to do as many times as you can go as many times as your principal will let you go, you should go, because there are so many things that you can get from other people and you may not, you are not going to be the best, I mean soccer is never my thing, kicking, foot dribbling I am comfortable with it, because I know how to teach it and I know what I expect to see and I know what the kids can do. Now I can do it enough, but I have had to gain that comfort level and confidence in my own ability, in my own teaching of it throughout all of these years of teaching. So that was not my strengthen when I first started teaching foot dribbling, those kids probably don’t know how to dribble today because I ruined it for them but it is just something that you have to just keep working at, keep working at and it is definitely a factor on how well you teach something. (Lori, Interview #6)

Susan

Susan is a female teacher who has been teaching in the Columbus Public Schools District since she started her teaching career 20 years ago. It was her first year of teaching in the current school when the data was collected for this study. Susan has completed a masters’ degree from a college in Detroit, Michigan. Her learning experiences were recognized during her participation in a district workshop at the beginning of her teaching career and last year. Another learning experience was her attendance of the state level of conferences about ten years ago.

Susan’s school is a French Immersion alternative school that provides K-8 program instruction located in northwest Columbus. Students of this school learn the standard curriculum in French but the physical education class is taught in English. Ethnicity of the enrolled students consists of African American (60%), White (33%), Hispanic (3%), Asian/Pacific Islander (2%), and American Indian/Alaska Native (1%). According to Susan, most students are from a French speaking background of middle and some upper class families. Data shows that 38% of students qualify for discounted/free
lunch in her school. Physical Education classes are offered twice per week for each class. The two lessons last 40 minutes and 30 minutes, respectively.

Susan described the environment of her physical education program as poor. For example, the gym only has a small space available for the PE program with lunch tables and milk coolers around the edge of the gym. Also, the gym is utilized for PE class as well as a breakfast and lunch room. Notably, lunch tables were unfolded and occupied over the half of the gym in the middle of the 30-minute lesson so that limited space was available for PE class on that day. However, Susan described the principal’s support for her PE program as positive. The principal supports Susan to get equipment needed for the PE class when funds become available. Also, parent involvement and community support are considered positive, but district support for the PE program and PE teachers is neutral to Susan based on a lack of support for teachers’ learning opportunities at the district level.

Research Question 1: What profiles of teaching practices in the ALT-PE and CLASS instruments can be distinguished for teachers units?

Dance Unit: Description of Observed Teaching Patterns and Practices

The same routines were observed during the entry, attendance, go/freeze signal, and closure in each lesson of the dance and soccer units. Students lined up at the door and came into the gym after they met Susan. As soon as the students entered the gym, they sat in small groups in the corner of the gym close to the door. Susan expected them to sit in the “tailor style”, for which students crossed their legs and kept their hands in their laps while taking attendance and introducing the lesson. She called every single student’s name to take attendance on her note. Susan used “go” and “freeze” verbal signals to start
and stop activities. When she said freeze, the students were supposed to have their feet
together, their hands on the side, and eyes towards the teacher to make sure that they
were listening to what she was talking about. To close the lesson, Susan gathered and had
the students in the tailor style in the corner of the gym where they had sat at the
beginning of the lesson. The lesson was reviewed by asking questions before the students
left the gym.

The same consequences for the student behaviors were applied to each class and
every single student. Susan described the consequences for different levels of behaviors:

The first one is basically like the mother look, the eye to eye contact and they
know that they have done something wrong and then the second time I will go
over and say something quietly to them and ask them if that is what they are
supposed to be doing. And then after the second time if they still continue doing
that then I ask them to go to a time out square on the steps which gets them away
from the activity. I have them think about what did I do to get here what can I do
to get out of there and what can I do to stay out of there so it does not effect my
grade. (Susan, Interview #6)

When a student has a “time out” two times in one period or two weeks in a row,
Susan calls the parent and discusses the student. It was observed several times in each
lesson that Susan stopped class to make eye contact with misbehaving students. Susan
also sometimes chose one student who was considered a good sportsman for that day and
put a certificate with his or her name on it on the wall.

Susan had four lessons of dance unit focusing on diverse dances, such as Seven-
jumps, which is a folk dance in Denmark, Boogie-walk, Macarena, moving to the beat,
and Mexican Hat dance. The first dance lesson began by making a circle in the center to
learn the Seven-Jump dance after taking attendance. Susan asked students to listen to the
music to talk about difference in the tempo of the music before teaching steps. Susan
divided the whole dance into several parts and taught part by part. To teach each part, most of the time, students went over each step following Susan’s verbal instruction. When students asked questions about the step, Susan demonstrated the steps. Susan always emphasized that students were not supposed to do the steps with her while she was demonstrating the steps. Students were asked to wait their turn to do the steps following her direction. After briefly explaining each part of the steps, Susan asked students to listen and dance to the instructions on the recording. She repeated these processes to teach all parts of the dance. The students attempted the whole Seven-jump dance to the music before the end of the class. Susan determined where Denmark is with students and reviewed the dance during the closure.

After taking attendance in the second lesson, the students stood in a circle and reviewed the Seven-jump dance with Susan without music. Susan asked students to show and try each step all together. After this, they danced the Seven-jumps twice to the music in one group. Susan divided the students into two groups to compete with each other. The two groups danced to the music at the same time and Susan determined which group was better. For the music, Susan used music on her record. Then, she closed the lesson.

The third lesson focused on the Boogie Walk dance after taking attendance. Students spread out in one line close to the wall. After Susan demonstrated two steps, students took turns to practice the steps for Susan, who sang the words of the steps. This procedure was repeated to learn all the steps of the dance without music. Susan demonstrated the steps to the music and then tried the dance with music with the students twice. For the next dance, students found self-space and Susan asked students to move to the beat to the Freeze song. However, the record that had the freeze song had a scratch so
that students could not try the dance. Susan decided to proceed to the Macarena dance. Students tried the step following Susan’s demonstration with verbal instruction without music. After learning the step without music once, the class was gathered in the corner of the gym for closure. Susan gave a sports award to one of students in the class and closed the class.

The fourth lesson started with a review of the Boogie Walk dance after taking attendance. Students lined up in one row close to one side of the wall and danced to the music without review of the step during which Susan showed the motion of the step without verbal instruction. After one trial of the Boogie Walk to the music, students found self-space and danced to the beat of the freeze song once. The next dance was the Macarena. The class was organized into two lines in the middle of the gym. Susan demonstrated each step and tried the Macarena dance to the music with students once. The last dance of the fourth lesson was the Mexican Hat dance. Students were asked to find self-space with a partner and learned each step without music. Susan went over each step by physical demonstration and sometimes chose one student to demonstrate the step. Students tried the steps of the Mexican Hat dance without music once and with music once. All music used in the fourth lesson was tape-recorded ones. Susan just finished the class after the students tried the Mexican Hat dance to the music.

Figure 4.41 shows the percentage of time the class and students spent in each subdivision at the context level and student involvement decision level in the ALT-PE instrument during Susan’s dance unit. The highest percentage of time was spent in the General Content subdivision (40.4%) followed by Subject Matter Knowledge (31%). The least percentage of class time was devoted to the Subject Matter Motor (28.6%) among
three subdivisions. A relatively broad range between the highest and lowest percentage of time was not identified across the subdivisions at the context level. However, the Subject Matter Motor subdivision showed the highest difference between the highest (35.7%) and lowest (14.6%) percentage of time among the subdivisions. Within the learner involvement level, both the target girl and boy were engaged more than two-thirds of time in the Not-Motor Engaged activity (71.4%). The percentage of class time spent in the Motor Engaged activity was an average 28.6% for both the girl and boy.

Figure 4.41: ALT-PE of Susan’s dance unit by subdivision
Figure 4.42 displays the percentage of time the class spent in each category across the subdivisions within the Context Level of the ALT-PE instrument during Susan’s dance unit. Susan spent a significant amount of time consistently in transition from one task to another and management of student behaviors across the dance lessons so that two highest categories were the Transition (20.1%) and Management (18%) at the context level and across the subdivisions. The percentage of class time spent in the Subject Matter Knowledge subdivision was devoted to providing information about Strategy (12.3%), Technique (11.8%), and Background (6.3%) of the dance. The majority of time spent in the Subject Matter Motor subdivision was distributed to Scrimmage (17.7%). Susan spent most of the first lesson to practice steps for the Seven-jumps dance, while the other lessons were devoted to practicing the Seven-jumps and other dances with music following short instruction. With the given arrangement of the lessons, the practice and scrimmage categories displayed a broad range between the highest and lowest percentage as shown in Table 4.10: between 25.6% and 0.6 for the Practice (25.6% in day one, 0.6% in day two, 3% in day three, and 0.6% in day four) and between 34.9% and 3% for the Scrimmage (3% in day one, 21.4% in day two, 11.6% in day three, and 34.9% in day four).
Figure 4.42: ALT-PE of Susan’s dance unit by category at the context level decision

Figure 4.43 displays the percentage of time students engaged in each category of learner involvement level subdivision in the ALT-PE instrument during Susan’s dance unit. Both the target girl and boy were engaged a similar amount of the time in Cognitive (31% for girl and boy) and On-task (girl: 25.5%, boy: 25.4%) in the Not-motor Engaged activities, and Motor Appropriate (girl: 28.5%, boy: 28.6%) in the Motor Engaged activities during Susan’s dance unit. The target girl was engaged the rest of percentage of class time in Waiting (girl: 14.8%, boy: 15%) and motor inappropriate (0.1%), while the boy was engaged in the rest of the time only in waiting (15%). A broad range across four days of Susan’s dance lessons between the highest and lowest percentage of time was identified in the Motor Appropriate category for both the girl and boy between 35.7% in
the second and 14.6% in the third lesson: 28.1% for girl and 28.6% for boy in day one, 35.7% in day two, 14.6% in day three, and 35.5% in day four. Since Susan could not find the music to practice moving to the beat following her instruction, students were engaged less time in Motor Engaged activities in the third lesson. None of significant difference between the target girl and boy in the percentage of time engaged in the categories was displayed in Table 4.10.

Figure 4.43: ALT-PE of Susan’s dance unit by category at the learner involvement level
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Table 4.10: Variance in categories of ALT-PE across lessons in Susan’s dance unit
Dance Unit: Classroom Assessment Scoring System (CLASS)

Figure 4.44 presents the scores of four domains in the CLASS instrument during Susan’s dance unit. The most of dimensions were scored in the low range except the Student Outcome that was rated in the mid range (4.2). For example, the Emotional Support and Classroom Management were scored 2.9 and 2.6, respectively. Susan’s instructional support domain was rated 1.3. None of the domain showed a broad range of variance across four days of Susan’s dance unit between the highest and lowest scores. The difference, mostly, was lower than 1 except the Classroom Management domain, the range between the highest and lowest of which was between 3 and 1.7.

![CLASS by Domain: Susan's Dance](image)

Figure 4.44: CLASS of Susan’s dance unit by domain
Figure 4.45 displays scores in all dimensions across four domains in the CLASS instrument during Susan’s dance unit. All dimensions across domains were scored between mid and low range with no high range of dimension. In contrast to other teachers, Susan received mid-range scores in the Negative Climate dimension (4.2) which was one of the highest scores among the dimensions. Other dimensions under the Emotional Support and Classroom Management domains reached between 3 and 2; 2.4 in Positive Climate, 3 in Teacher Sensitivity, and 2 in Regard for Student Perspective within the Emotional Support domain and 2 in Behavior Management, 2.8 in Productivity, and 3 in the Instructional Learning Format within the Classroom Management domain. Both dimensions under Instructional Support domain were scored low: Concept Development (1.4) and Quality of Feedback (1.2). However, student engagement (4.2) was considered an average higher than other dimensions. The greatest difference between the highest and lowest score across the dimensions was 2 in the Teacher Sensitivity in the Emotional Support domain and all dimensions in the Classroom Management domain.
Figure 4.45: CLASS of Susan’s dance unit by dimension

*Soccer Unit: Description of Observed Teaching Patterns and Practices*

The soccer unit included four lessons, each of which started with lining up at the door for entry and sitting in the corner of the gym to take attendance. After this, the main activity of each lesson was introduced and practiced. The first lesson focused on dribbling skill. Each student took a ball and started practicing dribbling skill in a self-space across the space in the gym. Susan then verbally explained the critical elements of the dribble skill questioning students. For the next activity, students lined up in five rows in the back of the end line and Susan set up about five cones with some distance in front of each line. Susan verbally described the activity in which students were expected to practice controlling their soccer ball dribbling across the cones. When the first person in
each line completed their turn to dribble across the cones, he or she moved to the back of the line and the next person took a turn dribbling across the cones. She showed how students went over across the cones with one student without doing dribbling. After each person in each line took turns practicing two or three times, Susan introduced the next activity in the same format as they practiced in the previous activity. Every other line of students was asked to put their balls in the bag. The lines of students with no ball worked as a defender against the next line of students who dribbled. Susan verbally explained the activity in which one offender kept controlling a ball by dribbling across the cones against one defender from another line. Then, students began the activity. Several students came to Susan and asked for more information about the activity while the activity was still running. Susan briefly answered the questions. Suddenly, two girls came to Susan and argued with each other about their roles but Susan just stopped and finished the activity with no further comment. Students moved to the space for the closure and just talked about what the roles of the defender and offender in the activity were with Susan.

After taking attendance in the second lesson, Susan assigned each of the students to stand by one of the cones that were set up across the middle of the line and the end of line. The students in each line faced each other and were asked to practice throw-in skills together. One line of students threw the ball to their partner and the partners trapped the ball with their chest or feet. Susan briefly demonstrated the skill in the middle of two lines and distributed one ball to each couple. Students started the activity but Susan stopped the activity after a few minutes and gave more information on the rules of the activity such as no touching the ball with hands, using the body to trap the ball, and no move in the back of the cones to catch the ball. The activity was re-started and Susan kept
reminding the students the rules of the activity during the activity. Susan also stopped the activity and refined the skill catching the ball by body (crawl the body). The class was concluded after more practice of the activity. Susan reviewed the throw-in skill and the activity of the day.

Susan focused on throw-in skills in the third lesson again. After taking attendance, students stood behind one of cones on two sidelines in the gym. She verbally reviewed critical elements of throwing and trapping the ball with their chest or feet and the same rules for the throw-in skill and the activity that described in the previous lesson. No physical demonstration for the skill and activity was provided during her instruction. Students began and continued the activity with their partners in different lines. Susan also stopped the activity and provided physical demonstrations with one student to refine the skills. Students spread out more and re-started the throw-in activity again. She then finished the activity and the class with a review of the skills and activity.

The last lesson of the soccer unit involved playing a line soccer game. After taking attendance and introducing the lesson, Susan divided the whole class into two groups with each group assigned to one of two sidelines. She then demonstrated defender and offender movements in the game with one student. Three students from each line came to the center of the gym, which constituted the soccer field, to demonstrate how to play the game. Susan verbally explained the roles of each offender and defender by their positions with the students in the center. Since lots questions were asked in the middle of instruction, Susan continually stopped and restarted her verbal instruction for the game to answer the questions. The students in the center attempted to play game with Susan’s guidelines. She provided feedback and more instruction (e.g., the role of students on the
side line) during the game. After one game finished, another three students from each line came to the center to play another game. Susan also used the “freeze” to give feedback during the game play. Other three students from each line were asked to come to the center to play game. Susan then decided to stop the class and provided feedback on student behaviors. Students moved to the place for the closure and left the gym after reviewing their behaviors and game play with Susan.

*Soccer Unit: Academic Learning Time-Physical Education (ALT-PE)*

Figure 4.46 shows the percentage of time the class and students spent in each subdivision of the ALT-PE instrument during Susan’s soccer unit. Susan spent a similar percentage of time in the General Content (38.3%) and Subject Matter Knowledge (38.7%) subdivisions. In contrast, Subject Matter Motor activity was allocated a lower (23%) percentage of time during the lessons and showed a relatively broad range between the highest (34.2%) and lowest (7%) percentage of time at the context level. The students spent majority of class time in the Not-motor Engaged activities (girl: 86.1%, boy: 84.7%). They were engaged in the lowest percentage of time in the Motor Engaged activity (13.9% for the girl and 15.3% for the boy) among the students in other teachers’ classes. The range between the highest and lowest percentage of time in both Not-motor and Motor Engaged subdivision was broad for both the girl and boy (between 85.4 and 64.3%: Not-motor, and between 35.7% and 14.6%: Motor).
Figure 4.46: ALT-PE of Susan’s soccer unit by subdivision

Figure 4.47 displays how Susan’s soccer unit of class time was devoted to each category within the context level of the ALT-PE instrument during Susan’s soccer unit. The percentage of time spent in the General Content subdivision was devoted to the Management (20.8%) and Transition (16.9%). The Strategy (30.6%) category was the highest percentage of time spent among the categories in the Subject Matter Knowledge (38.7%). The percentage of time spent in the Subject Matter Motor subdivision was distributed to the Skill Practice (21.2%). As shown in Table 4.11, the Strategy displayed a relatively broad range across four days of Susan’s soccer lessons between the highest (44.8%) and lowest (20.9%) percentage of time (20.9% in day one, 26.5% in day two, 30.2% in day three, and 44.8% in day four) along with the Practice category (ranging
between 34.2% and 0%; 25.6% in day one, 34.2% in day two, 25.2% in day three, and 0% in day four).

Figure 4.47: ALT-PE of Susan’s soccer unit by category in the context level

Figure 4.48 displays the percentage of time students engaged in the category within the learner involvement level of subdivision in the ALT-PE instrument during Susan’s soccer unit. The category that both the girl and boy spent the highest percentage of time was identified as the Cognitive (girl: 37.9%, boy: 38.6%) at the learner involvement level as like dance unit. The next highest categories in the soccer unit were On-task (24.7% for both the girl and boy) and Waiting (18.8% for the girl and 18% for the boy) in the learner involvement level as well. The students were engaged in 12.2%
(girl) and 13.7\% (boy) of class time in the Motor Appropriate category during Susan’s soccer unit.

![ALT-PE: Susan's Soccer](image)

Figure 4.48: ALT-PE of Susan’s soccer unit by category at the learner involvement level

As shown in Table 4.10, the greatest difference between the highest and lowest percentage of time was about 20\% and identified in the following categories: 32.6\% to 9.4\% in Management, 32.6\% to 15.4\% in On-task, 46.2\% to 25\% in Cognitive, and 25.6\% to 3.5\% in Motor appropriate category. The target girl and boy were engaged a similar amount of time in the categories but the most difference was identified in the Motor Appropriate category in day three: 13.7\% for girl and 20.9\% for boy.
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Table 4.11: Variance in categories of ALT-PE across lessons in Susan’s soccer unit
Soccer Unit: Classroom Assessment Scoring System (CLASS)

Figure 4.49 displays the average and the range between the highest and lowest scores in four domains of the CLASS instrument during Susan’s soccer unit. Only the Student Outcome domain were rated in the mid range (3.3) while other domains reached close to low range: 2.6 in Emotional Support, 2.1 in Classroom Management, and 1.9 in Instructional support. Overall, the range between the highest and lowest score in each domain was not broad but the category that displayed the greatest broad range was Classroom Management (between 3 and 1.3).

Figure 4.49: CLASS of Susan’s soccer unit by domain
Figure 4.50 shows the scores in the dimensions within four domains of the CLASS instrument during Susan’s soccer unit. All scores were rated lower than mid range, 4. Within Emotional Support domain, two dimensions were rated in mid range including Teacher Sensitivity (3.5) and inverted score of Negative Climate (3.2) with her yelling and a little bit aggressive behaviors toward her students. The rest of dimensions in the Emotional Support domain were rated in the low range: Positive Climate (2), Regard for Student Perspectives (1.5). The Classroom Management and Instructional Support of dimensions were rated in all about low range: Behavior Management (1.8), Productivity (2.3), and Instructional Learning Format (2.3) in the Classroom Management, and Concept Development (1.3) and Quality of Feedback (2.5) in the Instructional Support. Student Engagement (3.3) dimension was rated one of the highest score among the dimensions during Susan’s soccer unit. A relatively broad range between the highest and lowest scores was identified in the Negative Climate and Teacher Sensitivity in the Emotional domain and Behavior Management and Productivity in Classroom Management domains at 2.
Research Question 2: Why do teachers choose specific practices?

This section will provide data related to Susan’s rationale on the choice of his instructional practices observed during the dance and soccer unit and managerial practices.

Instructional Practices

Dance Unit. Susan considered the students’ previous learning and maintaining their interest in choosing a variety of dances and developing her teaching practices in the dance unit. Since this was the first year of teaching in the current school for Susan, she chose a lower level of dances under the assumption of the students’ limited learning.
experience in dance. She commented that “some of the dances that I’m teaching are a little lower than the grade level because they haven’t had dance here so I want to see how they react to lower ones before I go into the more complicated dances” (Interview, # 2).

In addition, Susan believed that the variety of lower level dances taught in the dance unit allowed students to keep their interest and discipline in the class. She commented:

I have to unless you have kids who are studying dance I am not going to be able to come in with a real intricate dance and say this is what we are going to learn, because they are not going to want to learn it, because it is going to be too intricate and then I am going to lose their interest and when I lose their interest I lose disciplining them. (Susan, Interview, #6)

Susan introduced dance bit by bit before the students tried the whole dance. This approach minimized student frustration and enhanced learning. Susan explained how she taught the steps, and her students’ reaction:

I think because it (teaching piece by piece) is easier to learn a dance that way rather then have them try to do it all and have them get frustrated and then when I put it on let them listen to it and then break it down because if you just put it on and then me shout the steps out, they are going to get frustrated and then they are going to say no and they are going to shut down and I didn’t want them shutting down. (Susan, Interview, # 6)

Thus, Susan’s choice of dances and teaching practices was determined by her consideration of the students’ limited previous learning experience in dance and maintaining the students’ interest. She believed that class discipline could be controlled by maintaining the students’ interest in the dances.

**Soccer Unit.** Susan made her decisions on the activities and her teaching practices in the soccer unit based on information from books, other teachers, and her own opinions. Since she didn’t know students’ previous learning in soccer, she relied on Dauer’s book to choose appropriate activities for the grade as the book says. In addition,
she tried to use lower level of activities with her notice of lower motor skills of current kids. She commented:

What I have tried to use a lot of but then when I have come to a new skill and I don’t know what skills they’ve been taught. Rather than rely on the kids telling me oh yeah we learned that, no we didn’t yeah we did, I try to go back to the Dauer book and okay this should be taught in the fourth grade, this should be taught in the fifth grade. I rely a lot on the Dauer book plus I am noticing in Columbus Public that the kids in kindergarten are coming in with lower and lower motor skills. And so I have to lower it. And I think I am almost from when I started teaching 20 years ago the kids are almost down to what a pre-school level was 20 years ago coming into kindergarten. (Susan, Interview, # 3)

The activities taught in the soccer unit were also chosen based on Susan’s observation of other teachers. When she found that the activity was working well with another teacher, she adopted the activity for her own students. She noted that “Because most of the times as I am watching someone teach it, as their students it works with their students and if it works with them, then I feel that it will work with other that age level too” (Interview, # 6). The modification of the activity that Susan did was not changing the activity but re-teaching the same activity in a different way to get the students to understand. For example, Susan covered the same throw-in activity in the second and third lesson consecutively. Although she believed that she modified the activity, what she did was “to break down” the activity (Interview, # 6). Even when teaching the throw-in activity in the third lesson, she re-taught it in a different way without any modification. Susan described how she re-taught the activity:

Different ways for me to explain it, some of them picked up on just watching me, then I had to literally take some of them and put them through the throw in phase and then I also had to do two or three have them read it on a piece of paper and then demonstrate it to me because they weren’t getting from the visual they had to read it. (Susan, Interview, # 6)
The lack of knowledge and experience in soccer resulted in limited modification of the activities for Susan. She has never played soccer before so she didn’t know, for example, in practical, “how to correct if you are not playing defense right” (Interview, # 5). In addition, she utilized limited teaching practices during the soccer unit because:

I have not been exposed to a lot of different teaching practices in the soccer unit, I can’t step back and quickly change gears. That I wish I had enough knowledge that I could step back and change gears like I do in the dance unit. (Susan, Interview, # 5)

In summary, Susan chose the activities that the book identified as appropriate for the grade and that other teachers taught. Her lack of experience and confidence in soccer resulted in adopting the activities with limited modification regardless of her students and/or environment in the given context.

**Managerial Practices**

Several management practices were observed in Susan’s classes such as role calling, go and stop (freeze) signal, and rules. Susan developed the management practices according to her own preference, her principal’s preference, and her concerns for students’ safety. She kept taking attendance by calling every single student’s name at the beginning of each class. She describes her preference:

I personally take attendance daily because in the elementary I never know if a kid is in the restroom, or with another teacher. And if we have a fire drill I have to know who I have and who I don’t have. I know some teachers don’t take attendance daily, but I am one that it also helps me at a new school to put a face with a name. And I am terrible on names. (Susan, Interview, # 5)

Her principal influenced the current management practices that Susan was using. For example, Susan used a little hand-drum for her go and freeze signal when she first started teaching. However, she changed to verbal signals because “most principals don’t like us
using a whistle” (Interview, # 4). In addition, rules and disciplines that applied to her PE program were developed aligned with the principal’s preference and school policy. Susan noted that “some of them (policies) are developed here at school and or at another school. And those are come sometimes from the principal, sometimes from the school” (Interview, # 4). Susan frequently used the strategy stopping class to make eye contact with misbehaving students during the class as her principal suggested to her. Susan explained how she used this strategy as follows:

Because that is really the only way I know. And that is what the principal has said to that if they are disrespectful that I am to stop talking right then until they listen and become respectful and then continue on with class. (Susan, Interview, # 6)

Safety was another reason why Susan adopted her class rules and disciplines. She believed that those rules and disciplines allowed to “the best control the class in there and be safe at the same time” (Interview, # 4). Susan added more explanation on her point of view toward the safety issues associated with her school context to adopt her rules and disciplines:

I am afraid of having the kids hurt with everything in there, with the lunch tables in there with the walls and the milk coolers and the steps and everything else I try to keep the kids safe and therefore when I if something does happen I can say these things are in place that if a parent decides to sue me they are not going to get much if anything because I have got the safety features in place in the class and they are taught from day one. (Susan, Interview, # 6)

Overall, the management practices were developed and applied based on Susan’s preference, her principal’s suggestions, and consideration of safety issues. Susan noted that her management practices have been revised accumulatively during her 20 years of teaching career.
Research Question 3: How do teachers develop competencies within their profiles of professional practices?

This section will be devoted to providing findings of data on Susan’s learning experience associated with the observed teaching patterns and practices, in terms of instructional practices in each of her dance and soccer unit and managerial practices across the unit.

Instructional Practices

Dance Unit. Susan’s learning experiences in dance during childhood and college period as well as after college empowered her to teach the dance unit with high level of competency. She rated her expertise in dance and teaching dance as 8 to 10 out of 10. When she was growing up, she lived in a diverse ethnic neighborhood that held a lot of folk and square dances so she was always willing to dance with them. In addition, her learning in dance during college and after college was devoted to developing her high expertise in dance as she felt comfortable to correct the students in classes. She commented:

I learned my dance things, the techniques I use I learned from the college classes plus I have also dance quite a bit when I was after college and so I knew some other dance and things like that where I could and I think because I was more into the dance, I could relay that subject a little bit better. And I could see if they are doing something wrong I could correct them on it. (Susan, Interview, # 5)

The Dauer book and the workshop that she attended were the resources that Susan mainly referred to develop her teaching practices in dance. She started using the Dauer book, which was considered to provide grade appropriate activities in every content area in PE, for her classes from 20 years ago. Susan noted:
The Dauer book has a list of, and it’s a good book for Phys Ed teachers. It has different sections on basic movement, rhythm and dance and then it will say, on first grade level, teach this, this, this, and this dance and that. So, I, um, in 20 years ago, when our supervisor was here at that time, she said, ‘okay, these are grade appropriate dances we would like to see done so I pretty much follow along with the curriculum that I was given 20 years ago. (Susan, Interview, # 2)

The dance workshops that she attended provided useful information such as music, Boogie Walk, Macarena dance, and helped Susan get the idea for teaching dance. She described the workshops:

We have workshops, dance workshops we can go to, and they have some music there and tell how to use musical or where you can get the music and then they teach you the dance steps. A lot of them, most of them, I can pick up the music and I can read the directions and try to put them together but that’s because I love to dance. (Susan, Interview, # 2)

In summary, Susan developed her competencies in dance through her learning experiences throughout her childhood, college, and adulthood. She also stuck to the Dauer book and techniques she learned in dance workshop most of the time for her teaching practices in dance.

Soccer Unit. Susan indicated her competency in teaching soccer as very low with limited experience in playing and learning soccer before. She mostly relied on the Dauer book, her learning at college, and other teachers’ information. Dauer’s book was also considered a valuable resource for Susan to teach soccer activities as she used the book for her dance unit. She believed that the book “has skills as to what skill should be taught to the kindergarten first and then combining skills” (Interview, # 4). She also still uses the activities that she learned in college with limited exposure to the new teaching techniques in soccer. She commented that “I haven’t learned any newer task techniques on how to go with the throw-in and that. A lot of the activities I do are from when I went
to college” (Interview, # 4). In addition, Susan persisted using the activities that were shared with other PE teachers at the beginning of her teaching. She described how she got the idea for the activity that she utilized in the soccer unit:

> When we first started teaching we had meeting with Phys Ed teachers and we helped, we shared each others’ ideas. And that was one that, because I couldn’t think of how could you play a soccer game indoors. And someone said well I use, I play line soccer with the kids, and that they enjoyed it so that’s how I got that idea. (Susan, Interview, # 5)

Susan mentioned Dauer’s book, which has been utilized for 20 years, her learning at college and the beginning of her teaching career as the resources that have helped develop her competencies in teaching the soccer unit. Overall, she was still using and relying on her learning experiences and resources that she gained from childhood, college, and her beginning of teaching career for her teaching dance and soccer units. She also mentioned the recent empty period in her learning by indicating that there are limited opportunities to attend workshops in the given her situation.

Because we have lost our teacher of special assignment, when I started 20 years ago, we had a lady over all of Phys Ed and we would meet with the supervisor once a month and we would help each other and talk to each other because we were just implementing the Physical Education program. Then we lost her and we got a new one, then with the budget cuts we lost the new one. So we now meet once a quarter and it is usually at 7:30 in the morning if we can make it. It’s not mandatory but before it used to be mandatory. And so we meet but we don’t meet and a lot of teachers don’t go and meet because they’ve got come to school and get prepared for classes. (Susan, Interview, # 4)

Even after she attended and learned some ideas from workshops or conferences, she failed to implement her learning in class. She noted that “if I go to a conference or anything I don’t have the time to come back and teach that right then, so I forget what to do” (Interview, # 4). Therefore, the fact of limited learning opportunities and use of her
learning in her class explained why Susan continues teaching her dance and soccer unit the same way for 20 years ago.

Managerial Practices

Susan realized the need for management strategies (e.g., go and freeze signal) when she first started her teaching but didn’t know how to do it at that time. She noted that “The freeze and go I learned that when I started teaching with Columbus Public schools, because at that point I was taught in college that you had to get them to stop and look at you, but I really never knew how to do that” (Interview, # 4). She has revised her management strategies responding to her principal’s suggestions and school policies. In addition, she adopted the sport award system used by the previous teachers of the school because it worked well. She described her learning the strategy from the previous teachers:

The last two teachers who were here before had it and to me it gives them something to work for a long with the knowledge and it helps a little bit better with the control of the class. (Susan, Interview, # 6)

The management systems have been revised throughout her teaching career based on the influence of the principal and school instead of her learning. Also, she adopted one of the management systems exactly as the previous teachers used with the students to control student behavior.

Amie

Amie is a female teacher with six-years of teaching experience in an inner-city school of Columbus Public School (CPS) District. She graduated from the Ohio State University 17 years ago and worked in the recreation field for 10 years before teaching in the elementary school. Since she started her physical education teaching, she has been
exposed to diverse learning opportunities. For example, she was involved as an urban teacher in a 2-year federally funded Physical Education for Progress (PEP) professional development grant. She has attended several physical education workshops provided by her school district as well as state level conferences, OAHPERD. In addition, she is currently working on an on-line master’s program at West Susan University and expects to complete the program in July, 2007.

Amie’s school provides a program for students from kindergarten through 5th grade. Because the inner-city school is located in the south of Columbus city, students are mostly minorities with low-economic background. The students consist of 76% African-American, 19% Caucasian, 3% Hispanic, and 2% Asian/Pacific Island. Almost three-thirds of the students (74%) in her school are identified as economically disadvantaged and 57% of the students qualify for discounted or free lunch. Amie described the poor environment of her gym, which is utilized for multi-purposes such as gym for physical education classes, auditorium, and cafeteria. Lunch tables, coolers, refrigerators, and ovens are left along the walls in the gym and a small stage takes up one side of the wall so that the space available for the PE class is very limited. However, Amie considered that her equipment for the class is enough for each student and her principal is very supportive of physical education programs based on supporting for her involvement in the PEP related activities. In contrast, the school community provides low physical activity resources to students and her school district is cutting physical educators to help minimize its financial issues.
Research Question 1: What profiles of teaching practices in the ALT-PE and CLASS instruments can be distinguished for teachers units?

Dance Unit: Description of Observed Teaching Patterns and Practices

Amie adopted consistent routines across all lessons in the units. In each lesson, as students entered the gym, they lined up against the stage and wore pedometers. Then, the lesson started with a warm-up, which included two parts. For the first part of the warm-up, Amie played music and students started moving around the gym keeping a line while doing locomotor steps (e.g., skip, gallop, side step). For the second part of the warm-up, students stood on their assigned number (located on the floor) for the purpose of taking attendance and organizing the activity and followed Amie (located in the front), and they practiced aerobic, strength, and flexibility steps with the music. After the warm-up, Amie started instruction and activities for the day. At the end of each class, all students were circled in the center of the gym and filled out their own assessment package, which asked them to record the steps on their pedometer and included questions related to skills, sportspersonship, and participation in class as well as physical activity outside of physical education class. Then, they collected the pedometers and lined up against the stage as they did in the beginning of the class. Amie adopted Hellison’s developmental levels of personal and social responsibility model and asked students to tap on one of the behavior levels on the wall based on how they felt about their behaviors during the class before they left the gym. Amie also utilized a ‘stinky point’ system as a managerial strategy to recognize and provide praise or redirection to the students’ behaviors during the class time. This point system was operated in each class within her school, and classes competed with each other to gain more points. The class gained the highest points under
this system was recognized at the end of every nine-week and awarded a prize of 20
minutes of free gym and popsicles.

The dance unit included three lessons focusing on a variety of dances. The first
lesson focused on counting and partner dance. After the warm-up, students moved around
and back to their own number on the floor by 8 and 4 counts with locomotor steps (skip
and side step). This helped them to understand the concept of counting. The next was a
partner dance. Amie demonstrated each of the 6 partner dance steps with one student and
the rest of the students followed and practiced the steps. Then, she arranged six stations,
each of which were assigned to one of the steps so that each dance couple practiced one
of 6 steps. Once all couples visited all stations, Amie gathered students in the center of
the gym for the assessment.

Amie introduced three dances in the second dance lesson. The first dance was
Dance Dance Revolution (DDR) that provided students with the opportunity to work on
nine different directions of foot work (e.g., front, back, right side, left side, diagonal right
front, diagonal left front, diagonal right back, diagonal left back, and cent) on the floor.
Amie demonstrated the basic foot work on the floor and students practiced the
combination of the foot works as she demonstrated and directed. They also tried several
patterns of foot works with music, during which only a few students could follow Amie
then they reviewed one of line dances that she taught last year and added hand
movements to the dance. Once hand movements were taught, students practiced the line
dance with music. The Electric Slide dance was the last dance of the second lesson.
Students followed Amie as she demonstrated the steps. They attempted to dance the
Electric Slide with the music but Amie could not find the music so students just followed
Amie and repeated the steps without music. After that, students moved to work on the assessment.

The third dance lesson focused on creative dance, called ‘dance relax’. After the warm-up, students were divided into 5 groups and each group lined up on one side of the gym. While playing music, Amie showed a move and then the first person from each line of the group went from one cone straight down to the other side of the cone. She introduced basic movements such as walk, turn, side step, middle level of movement, hip-hop movement, leap, and skip backwards, but students were asked to add their own creative movements to the back steps. The students seemed shy and laughed at others during the first several movements. However, as they got more turns with different steps and movements, every single student showed more creative movements by adding more arm movement, different shape, various level (e.g., high, middle, low), time (e.g., fast, slow), and pathway (e.g., straight, curve). The Mexican Hat dance was learned and practiced after the creative dance. Assessment was again completed at the end of the class.

*Dance Unit: Academic Learning Time-Physical Education (ALT-PE)*

Figure 4.51 displays the percentage of time the class and students spent in the subdivisions at two levels of decisions (context level and learner involvement level) in the ALT-PE instrument during Amie’s dance unit. Amie spent a similar percentage of time in General Content (38.7%) and Subject Matter knowledge (39.8%) subdivisions, and less time in Subject Matter Motor (21.5%). Both the target girl and boy were involved majority of time in Not-motor Engaged activities (girl: 83.8%, boy: 85.6%) and the rest of time in the Motor Engaged activities (girl: 16.2%, boy: 14.4%). Overall, the
range between the highest and lowest percentage of time within each subdivision was narrow at about 10% difference.

Figure 4.51: ALT-PE of Amie’s dance unit by subdivision

Figure 4.52 presents the percentage of time the class spent in each subdivision of categories in the context level in the ALT-PE instrument during her dance unit. Within the context level, the class time was distributed to several categories of activities across the subdivisions. The percentage of class time spent in the General Content was mostly devoted to Warm-up (15.7%) in the beginning of the class, Transition (15.8%) from one task to another, and Management (7.2%) to handle the issues unrelated to her instruction (e.g., behaviors). Subject Matter Knowledge of instruction was provided related to the
Strategy (17.5%), Assessment (10.4%), and Technique (6.5%). Since the assessment was a part of Amie’s routine in her class, Amie spent significant amount of time in Assessment category compared to other teachers.

![ALT-PE: Amie’s Dance](image)

Figure 4.52: ALT-PE of Amie’s dance unit by category at the context level decision

As shown in Table 4.12, the most variance occurred in the Strategy and Skill Practice across three days of Amie’s dance lessons. The highest percentage spent in Strategy was 27.8% in the first dance lesson and the second dance lesson spent the least percentage of time in the category (11.1%): 13.5% in day three. The percentage range across three days of dance lessons between the highest and lowest in Practice was 20.4% in the third lesson and 8.3% in the first dance lesson (16.7% in day two).
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Table 4.12: Variance in categories of ALT-PE across lessons in Amie’s dance unit

Figure 4.53 presents the percentage of time students engaged in each category within learner involvement level of subdivisions of the ALT-PE during Amie’s dance.

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unit. Within the target girl’s involvement level, the highest category in the dance unit was identified as Cognitive (40.4%) and the next ones were On-task (26.7%) and Waiting (16%) in the Not-motor Engaged subdivision, and the Motor Appropriate (15.2%) in the Motor Engaged subdivision. The range between the highest (28.5%) and lowest (6.3%) within the Waiting category was broader than other categories. Students were engaged in a similar percentage of time in each of the other categories across three days of dance lessons, so that a narrow range between the highest and lowest percentage of time was identified within each category. The target boy student also showed a similar pattern of spending time in the categories across subdivisions in the learner involvement level and a broad range between the highest and lowest was found in the Waiting category (28.5% and 6.3%) like the target girl. However, the target boy were engaged more percentage of time in the Off-task (girl: 0.7%, boy: 5.8%) and Motor Inappropriate (girl: 1%, boy: 3.1%) categories than the target girl during the dance unit. A significant difference between the target girl and boy in the percentage of time the students engaged in each category was identified in the Motor Appropriate (girl: 17.5%, boy 6.8%) and Motor Inappropriate (girl: 3%, boy: 8.1%) categories in day two as shown in Table 4.12.
Figure 4.53: ALT-PE of Amie’s dance unit by category at the learner involvement level.

**Dance Unit: Classroom Assessment Scoring System (CLASS)**

Figure 4.54 shows the scores in four domains of the CLASS instrument during Amie’s dance unit. Emotional support (4.4), Classroom Management (4.5), and Student Outcome (4.7) domains reached mid range and the score between the highest and lowest for those domains broadly ranged from high to mid range of scores: 6.5 to 2.8 in Emotional Support, 6.3 to 3.3 in Classroom Management, and 7 to 3 in Student Outcome. In contrast, Instructional Support was scored in low (1.9) and the range was between 3.5 and 1.
Figure 4.54: CLASS of Amie’s dance unit by domain

Figure 4.55 presents CLASS data of scores in each dimension within the domains during Amie’s dance unit. The dimensions under the Emotional Support domain except the inverted score of Negative Climate dimension were rated in the mid range scores: 4.2 in Positive Climate and 3.3 in both Teacher the Sensibility and Regard for Student. Amie created least of Negative Climate (6.8) based on the inverted score of the category. Amie’s Class Management was scored at mid range across the dimensions: 4.2 in Behavior Management, 4.8 in Productivity, and 4.5 in Instructional Learning Formats. Two Instructional Support dimensions were scored at low range: Concept Development (2) and Quality of Feedback (1.8). Mid range of Student Engagement (4.7) was identified in the CLASS during Amie’s dance unit. A broad range between the highest and lowest
scores was identified in the Positive Climate, Teacher Sensitivity, Regard for Student Perspective, and Instructional Learning Formats dimensions at about 5 scores difference.

Figure 4.55: CLASS of Amie’s dance unit by dimension

Team Handball Unit: Description of Observed Teaching Patterns and Practices

The team handball unit consisted of four lessons. Each lesson had the same routine of warm-up, assessment, and closure along with the stinky point system Amie used in the dance unit. She also always played music during not only the warm-up but also the activity time. Amie used a modified Sport Education model in this unit (e.g., team work, student role). After the warm-up, the first lesson started with team selection and was followed by a brief introduction of information on team handball. Amie assigned students to one of four groups and group members in each team decided their roles either
captain, coach, equipment manager, or score keeper. Each team was named and the students’ roles in each team continued for the whole unit. The class adopted a point system for each team in which the team gained points by paying good attention and showing good behaviors, and being responsible for the role. Each team started practicing basic skills of team handball, passing and catching with team members. The next activity was a keep-away game in which team members in each team divided into two groups as a kind of defender or offender. The offenders attempted to pass and catch the balls with each other by moving to open spaces to keep away from the defenders. The goal of this keep-away game was to make at least three passes without losing a ball to the defenders. After this game, the students were involved in the assessment and closure of the day.

The second lesson started with the keep-away game that students practiced in the first lesson followed by the warm-up. Then, students played games with group members. Each team was divided into two groups and played games against the other group within their team. In this game, the students used passing and catching with no bounce and a three-step rule was applied. When the group successfully made three passes without dropping the ball or being interrupted from the other team, they gained points and then the ball went to the other team. After this game, Amie added a cone-zone in the end line of each group’s space and asked students to touch down the ball in the cone-zone within 3 passes to gain points. Students were expected to move around the space to pass and get the ball to the cone-zone. In addition, Amie emphasized that the students should know where and when to pass in order to gain scores in this game. All students in the class were moving and attempting to achieve the goals. After the game, the assessment for the day and the rest of routines were completed.
After warm-up, the third lesson started with practicing high, mid, and low levels of passing and catching with team members. Each team also played three-pass games without the cone-zone and with the cone-zone. The same rules were applied in those games as they played with in the second lesson. Next, Amie added a real scoring piece in the game such as shooting and a goalie in the cone-zone. In this game, offenders were allowed to shoot a ball after three passes and a defender was expected to be the goalie. After students played the game using passing, catching, and shooting skills, they played a game against other teams. Then, students moved to the assessment and closure routines.

The last lesson started with the first part of the warm-up as a whole class and the second part of warm-up was led by the coach in each team. After the warm-up, each team practiced passing and catching skills with their team members. The rest of class time was spent playing games against other teams with the same rules that they had in the previous lesson such as the 3 step-rules and the 3 passes before shooting. The teams rotated around so that each team played each other. After this mini-tournament game, students completed the assessment and lined up for closure. During the team handball unit, Amie utilized students’ role in each group. For example, the captain and the coach were charged to organize the team to play with group members. Score keepers kept being asked to record points to their team. Equipment managers helped Amie to collect equipment after the game. In addition, Amie utilized a point system across the unit lesson and score keeper was charged to score the points to their team as Amie ordered.

*Team Handball Unit: Academic Learning Time-Physical Education (ALT-PE)*

The pattern of time spent in each of the subdivisions during Amie’s team handball is shown in the figure 4.56. Amie spent the highest percentage of time in General Content
subdivision (40.4%), followed by Subject Matter Motor (34.5%), and Subject Matter Knowledge (25.15%). Both the girl and boy spent about 70% of the class time in the Not-motor Engaged subdivision (girl: 69.7%, boy: 69.8%) and the rest of the 30% of class time was spent in Motor Engaged subdivision. The range across four days of Amie’s team handball lessons between the highest and lowest percentage of time was narrow across the subdivision at about 10% but the Subject Matter Motor subdivision, which showed the difference between 42.1% and 26.9%.

Figure 4.56: ALT-PE of Amie’s team handball unit by subdivision
Figure 4.57 presents the percentage of time class spent in the context level subdivision of categories in the ALT-PE instrument during Amie’s team handball unit. A similar amount of class time (about 10%) devoted to eight categories across the subdivisions: Transition (12.8%), Management (13.7%), Warm-up (13.7%) in the General Content, Strategy (11.4%) and Assessment (8.5%) in the Subject Matter Knowledge, and Practice (13.2%), Scrimmage (12%), and Game (9.3%) in the Subject Matter Motor subdivision.

![ALT-PE: Amie's Team Handball](image)

Figure 4.57: ALT-PE of Amie’s team handball unit by category in the context level

Amie has organized the team handball unit either to practice or play games with group members during the first three lessons and the last lesson was spent in playing
games against other groups like a format of tournament. Given the fact, the range between the highest and lowest within the Practice, Scrimmage, and Game categories was relatively broad. The range in each of the Practice and Scrimmage categories was between 26.9% and 0% and between 42.1% and 0%, respectively. Although the average percent of time in game was 9.3%, only the last class devoted to the game (30.8%) and 0% of time was spent during the other three lessons so that the range of the game category was also relatively broad (Table 4.13).
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Table 4.13: Variance in categories of ALT-PE across lessons in Amie’s team handball unit
Figure 4.58 displays the percentage of time students engaged in the categories of learner involvement level subdivisions in the ALT-PE during Amie’s team handball unit. Both the target girl and boy students spent high percentage of time in the On-task (girl: 33.4%, boy: 32.3%) and Cognitive (girl: 25.9%, boy: 26.3%) categories of activities in the Not-Motor Engaged subdivision and Motor Appropriate (girl: 30%, boy: 29.9%) in the Motor Engaged subdivision. The students engaged the rest of the class time mostly in Waiting (girl: 9%, boy: 9.2%).

![ALT-PE: Amie's Team Handball](image)

Figure 4.58: ALT-PE of Amie’s team handball unit by category at the learner involvement level

As shown in Table 4.13, the range in the On-task category looked broader than other categories, which was between 44% and 28.8% for the girl and between 42.7% and 25% for the boy and the variance across four days of lessons occurred in the On-task:
31.5% for girl and 32.4% for boy in day one, 29.5% for girl and 28.9% for boy in day two, 44% for girl and 42.7% for boy in day three, and 28.8% for girl and 25% for boy in day four. Overall, the target girl and boy engaged similar percentage of class time in each of categories with the same pattern at the learner involvement decision of level.

**Team Handball Unit: Classroom Assessment Scoring System (CLASS)**

Figure 4.59 presents the scores in four domains of the CLASS instrument during Amie’s team handball unit. Overall, domains reached mid range scores except the Instructional Support domain. Emotional support domain scored at mid range (4.4) and both Classroom Management (5.5) and Student Outcome (5.1) indicated mid-high range scores. Only the Instructional Support domain scored at low range (1.8). The range in each domain was not broad, which was identified about ±1 from the average.

![CLASS by Domain: Amie’s Handball](image)

Figure 4.59: CLASS of Amie’s team handball unit by domain
Figure 4.60 displays CLASS data of score in dimensions under each domain during Amie’s team handball unit. Three dimensions under the Emotional Support domain scored at mid range: 3.4 in Positive Climate, 3.4 in Teacher Sensitivity, and 3.8 in Regard for Student Perspectives. The inverted score of Negative Climate dimension reached high range (7). All three dimensions associated with Classroom Management scored at mid-high range. Behavior Management scored 5.9, Productivity 5.8, and Instructional Format 5. Instructional Support related dimensions, Concept Development (1.5) and Quality of Feedback (2.1) scored at a low range. Student Engagement was considered mid-high range (5.1). The range between the highest and lowest in the Regard for Student Perspective dimension was prominently broader (between 6 and 2) than other dimensions across domains including three other Emotional Support related dimensions.

![CLASS by Dimension: Amie's Handball](image_url)

Figure 4.60: CLASS of Amie’s team handball unit by dimension
Research Question 2: Why do teachers choose specific practices?

This section will provide data related to Amie’s rationale on the choice of his instructional practices observed during her dance and team handball unit and managerial practices.

Instructional Practices

Amie considered several issues to adopt her instructional practices such as students’ fitness, enjoyment, age group and culture, her preference, context, and time management. Generally, concerns with the social issues in the given environment led Amie’s decision on the instructional practices. Responding to the students’ culture within the inner-city environment, she believed that she should be responsible for emphasizing students’ fitness in her physical education classes. She explained the school and community environment associated with students’ health issues to support her rationale toward her fitness-focused physical education classes:

It (fitness) is extremely important in this setting because these kids are not getting any kind of fitness at all. There are first graders that are on blood pressure medicine and they have to get their blood pressure checked. I mean we are really having medical issues right now. And I have just decided this is going to be my advocacy is to try to get these inner city kids moving and to enjoy movement and exercise and fitness, because I enjoy it so much. And I really want to bring it to them. Otherwise they are not going to get it. I mean they don’t have gyms and health clubs around here. There are none. They have no concept of what I am going to the gym today. No one does that here. Where I live everybody has a gym, we are all working out. So I really wanted to bring that to the inner city kids. I want them to experience it. That is my little saying is that I feel it is important, I feel that I contribute to that so that is just my way of thinking. This environment just doesn’t advocate physical fitness at all. (Amie, Interview #7)

Amie devoted the class to the daily assessment in the end of each lesson to hold students accountable for learning and participation in physical education class and physical activity outside of school. She commented:
I feel like they learn more if I am using an assessment piece. And I find out whether they are doing it correctly. It helps me, it helps the parent, it helps the child, it makes it so we are not just out there playing, there is actually learning going on in the classroom… If I don’t asses, it is just a recess out there. So I think that is an important part because that gives the P.E. program credibility as a learning environment and not just kids blowing off steam and running around. So I think it is important. (Amie, Interview #7)

Although her concerns for the students were embedded in her instructional decisions across the units, more specific procedure of decision making in each of the dance and team handball units will be described in the following section.

_Dance Unit._ Instructional practices within the dance unit have been determined dependent upon Amie’s preference and for increase of students’ fun and fitness. Basically, Amie organized the dance unit from her standpoint that the purpose of dance the unit in elementary school is “just for fun and socialization and just how physical movement makes you feel” (Interview #6). To be aligned with the purposes, she started selecting several dances based on how she felt toward the dances and the dance unit she had been teaching. She commented:

I do it a lot (the dance) is something that appeals to me and I know that I’m having fun with it and I know that I can present it in the same way. Then I try it. And most of the time if I am having fun and I portray it that way then the kids usually pick up on it the same way…If it is fun and I like it I usually try to use it as well. And this has worked for the last couple of years, so I keep using it. (Amie, Interview #6)

I’ve taught dance before. I’ve done like Mexican Hat Dance and stuff like that and I want to put some new stuff in there because a lot of these kids have done it the last two or three years, so I thought I would mix it up a little bit. I know I am bored with it, so I am trying to add some new stuff in there. (Amie, Interview #5)

Amie tried to teach new types of dance in this dance unit because she felt it was boring to teach the same dances for several years. The choice of new dances was dependent upon her preference such as whether she enjoyed the dance. In addition, she
attempted to connect the dances to fitness by keeping students moving and playing music along with having fun.

I want them to move, I want them feel the music I want them to be able to count and I am touching upon different ways to dance to music and be incorporated to fitness. And hopefully we are having fun at the same time. (Amie, Interview #5)

Amie also carefully chose music for the dances to increase students’ movement and interests in the class by considering the culture of school and students. She mentioned that “it (music) goes with the culture of the school. So the kids enjoy it. And it’s something that they know and the beat is something that they are accustomed to” (Interview #6). Therefore, Amie believed that “this kind of music makes the kids move” (Interview #6).

Team Handball Unit. Amie chose the team handball unit for her students to experience a new sport which might be possible to incorporate its learning elements (e.g., passing, catching, shooting) into other sports and to continue playing outside of the PE setting as they enjoyed. She described her beliefs on her choice of the team handball unit:

I think it is just my belief that we have to throw new things out there, you have to make it exciting, we have to get these kids moving, we have to make it enjoyable, we have to get kids to think outside of the box of what gym is, what P.E. is, what sport is. Some of the kids are really doing the same type of games over and over and I like to give them other experiences. These kids probably won’t golf, it is an expensive sport, and you know they don’t have the economic means to play it, but I thought let’s put it out there and see what happens. But I did want them to experience it. It was tough, but um, I would do it again, just at a different time. (Amie, Interview #7)

She also explained the advantage of teaching team handball in her context compared to teaching basketball or other associated sports.

I like this so much better than trying to do a basketball unit. I’ve tried to do basketball. First of all, my space is not big enough. When you play basketball, it’s 5 on 5, I have too many kids that dribbling element the basketball being hard, it’s
just very difficult to teach it. With this (team handball), there’s skills that are similar to basketball that passing, catching, and moving type thing and then, they shoot, they’re still shooting, I mean it’s not at a basketball hoop but they still have the elements of that, so it’s just a great sport. I mean, it incorporates things like soccer and hockey and the net, the other invasion games, too. So, it’s a nice way to start an invasion unit starting with this and then you can take it and make it a soccer unit very easily, using the same principles that you were using for this. So it seems like a good sport starts off especially at the elementary age. (Amie, Interview #3)

When the team handball was being taught, Amie attempted to modify the rules and games were played as simple as possible considering several issues in the given context. She believed that the real in-depth stuff of team handball “gets confusing for this age level so I just try to keep it as simple as possible”. (Interview #3) For example, the students were taught basic skills, passing, catching, and shooting without dribbling. During the unit the concept of cone zone was added for game play by considering students’ excitement and the gym size. Amie commented:

I’ve modified team handball. I’ve taken out the dribble, just so, it’s working on and focusing on the passing and the catching, and then I added the shooting element just for, that makes it a little more exciting for the kids as well and they have a target and they have to shoot. Obviously, the gyms are not big enough to make big arc or anything like that but I used a cone zone as a place where they have to shoot from so I’ve just modified it as much as I can. (Amie, Interview #3)

Amie also indicated students’ behavior issues to support her rationale for the modification. As the rules or games become complicated, she believed that students had more behavioral issues, which result in a decrease of their participation. Therefore, modification in game rules to simplify is required especially for these students within the inner-city school to get them more involved in the classes:

Simplifying, there is a lot of behavior issues and social issues that um, it gets complicated, behaviors get complicated why kids are acting a certain way, so keeping things simple in the classroom and then talking about social skills and responsibility also plays into that. (Amie, Interview #7)
Most of my modifications are just simplifying it so that it is easy for the students to understand. I am figuring out if it is too complicated I loose them. Especially in this environment, inner city, elementary with big classes, if I start running on about all of these rules, they can’t follow it. So most of my modifications are simplifying. Another modification a lot of sports instead of doing the big teams where you loose some kids doing the two on two and the three on three type of thing, that gets everybody involved… I just do not accept kids not participating at all, so all of my lessons are for the maximum amount of participation I can get from the student. I try not to have them wait or sit, you know lines, relays. There might be some things because of safety factors that takes a little bit more time, but if I can increase that activity and get everybody participating I will modify an activity to do that. (Amie, Interview #7)

Overall, Amie chose the team handball unit to introduce a new sport, which is associated with other sports and is possible to play outside of school. Simply modified team handball was taught by considering students’ age and behavior issue to keep them excited and involved in the lessons. Also, the small gym size influenced her instructional decision, such as team size (2 vs. 2 or 3 vs. 3) and court format (e.g., use of cone zone).

Managerial Practices

Amie utilized several management strategies to deal with students’ lack of social skills in the given environment, such as a modified Hellison’s model, stinky point system, and point system within the Sport Education model during the handball unit. First of all, she described students’ behavior issues such as having no social skill in the inner-city school as follows:

I think inner city schools and we are having kids with low economical situation and environments, and they don’t have those social skills a lot of time, sometimes I really have to hit on social skills more than actual the physical skills. Once I got the social skills worked out, then I can go okay. (Amie, Interview #2)

Amie also explained why the behavior management was critical in her classes to initiate and implement her instruction related to physical skills:
The behavior aspect it really is a main focus, I am always touching upon behavior and unfortunately it takes me away from physical skills sometimes but once I get that behavior controlled then the physical skill stuff falls into place, but if I don’t have the management strategies going on all of the time, we get nowhere. And that is just the way it is here. I have to be consistent and stick with it and have them. Otherwise it would be chaos it really would it has to be organized and structured, it just has to be. (Amie, Interview #7)

Given this situation, Amie adopted several management strategies to help students have fun in the class through increasing activity time and their learning. She believed that reducing transition time and creating a better environment for learning allowed more instruction and activity time. As the students learned more, the more they enjoyed. The management strategies contributed to making this possible in Amie’s school. She commented:

I feel like I’m getting more done because of the management strategies that I put together, the transitions are quicker, I’m able to use that instruction time in a quiet environment and I feel that it’s quicker and I can get them up in the activity quicker now, when before I seemed to be talking a lot and so, implementing the management strategies actually makes it, um, we just have more activity time going on and I feel like the kids are getting more out of it they’re learning more. It just you know, being happy and having fun and that sort of thing they’re actually learning. (Amie, Interview #2)

In summary, management for students’ behavior was indicated as the main focus in Amie’s school to provide instruction on the physical skills. Amie implemented several management strategies to keep students involved in the class, by which she believed that they are learning more and enjoying the physical education program.

Research Question 3: How do teachers develop competencies within their profiles of professional practices?

This section will be devoted to providing findings of data on Amie’s learning experience associated with the observed teaching patterns and practices, in terms of
instructional practices in each of her dance and team handball unit and managerial practices across the unit. Amie utilized several resources to teach the dance and team handball units such as: past teaching and self-learning experiences, professional development workshops, PEP experience, master’s program, book, the internet, and other colleagues. Since she came back to teaching 6 years ago after her 10 years of working in the recreation field, the PEP grant experience was considered as “a life saver” (Interview #2) to her for learning new concepts in teaching. She noted:

I did not have a clue as to all this new stuff that’s out there so the PEP grant really did give me all these great ideas...the PEP grant really was a life saver as far as having a quality Phys Ed program. (Amie, Interview #2)

It is clear that her learning from the PEP grant has embedded into her teaching practices. More specific procedures to develop competencies in her teaching will be described by each unit and managerial practices.

**Dance Unit.** Amie rated her expertise in dance a 6 or 7 out of 10. Her competencies were developed from past teaching and self-learning experiences as well as several PD workshops, book, and the internet. Her choice of line dances and creative dance for her dance unit was based on her past teaching experience. Amie noted that “I’ve tried the square dancing. I get frustrated. They (students) get frustrated. And I think they like the line dancing better” (Interview #5). Her self-learning experience in dance inspired to teaching several dance types in the dance unit. She commented:

Most of my dance is just my own experience. A lot of it, I have done dance in my lifetime, aerobic dance, line dancing, professional, I have done it myself, so I know I enjoy it. And a lot of it is just participating in dance experiences and then taking that and trying to modify it and do it. Because I know I, like people actually join these classes to do it, so I try to do it that way. (Amie, Interview #6)
Amie also indicated other resources that she utilized to teach the specific dances. For example, she learned the steps of cultural dance, the Mexican Hat dance, by reading up on the online information. The partner dance also came from the book called *Physical Best Activities*. She noted:

I got that stuff (partner dance steps) through *Physical Best Activities*. I have a book that has activities and it’s an aerobic part of the activity book and its dance education and it basically has partner activities and what you are supposed to do it goes over the steps like I did. (Amie, Interview #5)

Professional development (PD) workshops for dance provided her with new ideas not only on the content but also on the teaching method. Amie described learning the creative dance at a PD workshop:

I actually learned that (creative dance movement) at a professional development workshop and they put us through it and it was fun and people got creative and so I have used it for the last couple of years. And I use the same music that she used I went out and I found the whole song, because the kids know that. And it’s just a fun beat that they like, that makes them move. (Amie, Interview #6)

In addition, she could get new ideas to teach the dance from the PD workshop. She noted:

As far as professional development goes I am always looking for new ideas, and I try to participate in it and then while I am doing that workshop I am like okay how can I adapt this or make it work for my teaching style. (Amie, Interview #6)

*Team Handball Unit.* The teaching practices that Amie adopted in the team handball were learned from her college and PD experiences including PEP workshops. This was the first time for Amie to teach the team handball.

Way back when in college, we did have a small unit of team handball and then I have been to a couple of professional development where other Phys Ed teacher, have gone through the progression of a team handball. (Amie, Interview #3)
The Sport Education model in the team handball unit was learned from PEP workshop.

She went through the model in the workshop and modified it to implement in her setting.

She commented:

The sport education through the PEP grant I was part of that program, PEP I. The first PEP grant so we went through the whole tactical, and then the sport Ed. I have modified it and tweaked it to where it works for me. (Amie, Interview #1)

Managerial Practices

Basically, Amie learned several managerial strategies from the PEP grant workshops, her master’s program, and other colleagues. She noted that “PEP grant and then I have been using them for a few years and I am also in the master’s program. And we have gone over these strategies as well” (Interview #2). Following her learning, she went through the process of trial and error to find out what works for her and her students.

She described:

I just have found over the last three years that the point thing works…When I first started (teaching), I was screaming and yelling and this way (point thing) I don’t have to do that. It saved me a lot of energy, to just go over and ‘we’re not in the line’, stinky point, I do not have to raise my voice anymore. So, I just found that these work through trial and error. This works best for me and the kids seem to respond to it better than me yelling and screaming and trying to do other things. (Amie, Interview #2)

Amie also mentioned the idea of the numbering system on the floor to organize the students, which came from her colleague. The system was also tried and considered working for Amie’s class.

Actually just a friend of mine was a teacher in our school and she said hey our Phys Ed teacher puts numbers on the floors and it’s awesome it’s great for organization. And I am like ‘oh I am going to try that’. And it just works. If I need them to get somewhere or if I need them to calm down because it is out of hand, we just go to our numbers. (Amie, 6)
Overall, current management strategies observed in Amie’s classes were developed through the process of trial and error following her learning from the PEP grant, master’s program and her colleagues.
The purpose of this study was to describe the teaching practices of elementary physical educators, to identify why these teachers chose specific practices in their contexts, and to explore how teachers have come to learn these practices. Specifically, this study utilized concurrent mixed model design to collect and analyze quantitative and qualitative data. Chapter 4 was devoted to the description of teacher-by-teacher findings from diverse data associated with three research questions (e.g., research questions 1, 2, and 3), such as findings of ALT-PE and CLASS data and analyses of interview data. Within this chapter, the analysis of the findings across teachers and units will be integrated to answer and discuss all research questions. This section is followed by research conclusions, teacher/teacher educator implications, and future research recommendations.

Discussion

The following section integrates findings across units of instruction. The cross-case analysis of findings will be presented through answering each research question.

Research Question 1: What Profiles of Teaching Practices in the ALT-PE and CLASS can be Distinguished for Teachers Units?
The ALT-PE and CLASS instruments were utilized to identify profiles of teaching practices of elementary physical educators. The ALT-PE instrument focuses on the quantitative aspects in classrooms by collecting time-based variables. The ALT-PE instrument has been used as both a proxy measure of student achievement and a process measure of teacher effectiveness in physical education (Silverman, 1985; Silverman, Devillier, & Ramirez, 1991). In contrast, the CLASS instrument has been developed to assess the quality of classrooms and is dependent upon the quality of interactions between teachers and students relevant to student outcomes (Pianta, La Paro, & Hamre, 2005). To explore teaching profiles within and between these instruments, the findings described in Chapter 4 are integrated across teachers and units. The following section will describe the distinct profiles of teaching practices identified by the ALT-PE and CLASS instruments.

Profiles of teaching practices in the ALT-PE

Descriptions of how teachers use time have been documented in the research on teaching in physical education. We know there is a direct relationship between how teachers and students spend their time, and how much students actually learn (Silverman, Devillier, & Ramirez, 1991). For example, ALT-PE was developed to measure time variables and was validated as a strong proxy measure for student achievement based on the evidence of relationship between time variables and student achievement in physical education where no standardized test exists (Siedentop, 2002; Silverman, 1985; Silverman, Devillier, & Ramirez, 1991). Within this area of research, a significant relationship was identified between the Motor Appropriate (Ma) category of ALT-PE and student achievement scores, which are indicators of teacher effectiveness (Silverman,
Devillier, & Ramirez, 1991). Most studies have provided descriptive data, indicating that, in general, only 10-20% of class time (Ma) contributed to student outcome in physical education (Metzler, 1989). A few have shown that effective teachers utilize 50-80% of ALT-PE within their physical education classes (Birdwell, 1980; Siedentop et al. 1994). Although student time-on-appropriate practice was established as a process measure to evaluate teacher effectiveness (Cousineau & Luke, 1990; Shute, Dodds, Placek, Rife, & Silverman, 1982; Silverman, 1991), no studies have provided definitive criteria for the percentage of time needed in any of the ALT-PE categories for teachers to be identified as effective.

Although boundaries that determine levels of teaching effectiveness have not been clearly established, this study organized the data by ranking the teachers’ units according to the percentage of time spent in the Motor Appropriate (Ma) category of ALT-PE. Findings guiding effective teaching practices in previous studies were used to determine these categories, which were used to identify teachers as high, medium, or low. A high category was developed by identifying units where the Ma data was 50% or above. And the low category was determined by identifying units where the Ma category was below 20%. Units where the Ma data fell within 20% and 49% of range were placed in the medium category. Each teacher’s units were then classified as high, medium, and low units and were used to discuss profiles of practices for teachers’ units in this study. Table 5.1 shows the teachers’ effectiveness ranked by the Ma category and the relationship between the Ma and other ALT-PE categories within and across units. A total of 12 units taught by six teachers in this study were ranked and categorized by the Ma category as
Ma high (Ma H: \( > \) or \( = \) 50%), Ma medium (Ma M: 20-49%), and Ma low (Ma L: \(<\) or \( = \) 20%).

In this study, only one unit was identified in the high category, as it was only in Kevin’s floor hockey unit that the students spent over 50% of their classroom time in the Motor Appropriate (Ma) category. According to Table 5.1, Kevin allocated over 50% of class time in the Motor-Engaged practices and less than 10% of Management time (7.9%) during his dance unit. His students spent most of the time Kevin allocated to the Motor–Engaged practices in appropriate motor activities (over 50%) with limited time spent in waiting (2.6%).

Seven units taught by all six teachers were classified within the Ma M category; these included Bob’s hockey and dance units, Elis’s dance unit, Amie’s handball unit, Susan’s dance unit, Lori’s dance unit, and Kevin’s floor hockey unit. The students falling within this category spent 23.2% -39.65% of class time in appropriate motor activities. The percentage of time spent in the Ma category shown in the Ma M units was less than Kevin’s dance unit (Ma H). However, four units in the Ma M category showed little difference between time that the teachers allocated to Motor-Engaged activities and time that their students spent in the Ma category (about 0%-3%), which difference was similar to Kevin’s dance unit (0.75%) in Ma H. Teachers in the Ma M category spent 2%-13.7% of class time in Management, and the students engaged in relatively little time in inappropriate activities (0%-0.75%).

Four units taught by four different teachers fell within the Ma L category with 12.4%-19.85% of class time spent in the Ma category: Elis’s basketball, Amie’s dance, Susan’s soccer, and Lori’s foot dribble units. Similar teaching patterns were identified in
these Ma L units of teachers who were identified as less effective (based on the Ma category) than other teachers who taught Ma H and Ma M units in this study. Most teachers categorized in the Ma L category spent less than 10% of class time in Management (7.2%–9.3%). Also, little difference was found between teacher allocation time to motor practice and student engaged time in motor activities. For example, students in Amie’s dance unit engaged in motor activities 89% of the time (Motor Engaged time: 15.3%) that the teacher allocated to Motor-Engaged activities (17.15%). However, some different teaching patterns were identified between some of Ma L unit teachers and other categories of unit teachers (Ma H and Ma M). Susan spent over 20% of class time (20.8%) in Management during her soccer unit. Lori’s students spent 7.1% of class time in supporting peers while engaging in motor activities, which caused the difference between allocation time at the context level and engagement time at the learner involvement level as well as between the Motor-Engaged time and time spent in the Ma category.

Justifying teaching profiles in each level of teaching performance associated with Ma-based teaching effectiveness was attempted several ways in this study. Given the findings related to relationship between the Ma and other categories of the ALT-PE, however, the units of teachers falling within different levels of teaching effectiveness associated with the Ma category of ALT-PE were more alike in terms of characteristics of teaching behaviors and student engagement, rather than different across the categories. For example, according to Siedentop and Tannehill (2000), effective physical education teachers tend to spend less than 10% of class time on Management (M) and less than 5% on Waiting (W). Seven units of the 12 units taught by four teachers were considered
effective Management time in this study and only one unit of students spent less time on waiting category (2.6% in Kevin’s dance). However, effectiveness in Management and Waiting time failed to define teaching profiles associated with the Ma-based rank of teaching performance in this study. For example, the Ma H (Kevin’s dance unit) showed effective Management (7.9%) and Waiting (2.6%) as aligned with effectiveness of Kevin’s teaching performance based on the Ma category. However, effective Management time was also found in other levels of teaching performance units. For example, although Bob’s hockey unit (Ma M: 2.6%) and Lori’s foot dribble unit (Ma L: 7.4%) were categorized as the Ma M and Ma L, respectively, they allocated less than 10% of class time on Management category and a lower amount of time than Kevin’s dance unit in the Ma H.

Second, a substantial difference between the amount of time teachers allocated to actual practice and the amount of time students engaged in activity relates to the poor management (Siedentop & Tannehill, 2000). When the difference between Subject Matter Motor (P, S, and G categories) at the context level and Motor-Engaged time (Ma, Mi, and Ms categories) was calculated, it was obvious that there was less difference in the Ma H of unit (0.75%), but similar difference across Ma H, Ma M, and Ma L levels of teaching units: Ma H (0.75%), Ma M (0%-28%), and Ma L (1.85-29%). For example, the difference found in Kevin’s dance unit as the Ma H was 0.75%, but Susan’s dance unit as the Ma M had no difference (0%). The difference shown in Bob’s dance unit (28%) was the highest across units in the Ma M and similar to the largest difference (29% in Lori’s foot dribble unit) found in the Ma L level of teaching performance. Given this fact, it was obvious that a significant difference was not found among the different levels of teaching
performance (Ma H, Ma M, and Ma L). Therefore, identifying the difference between SM M and Motor-Engaged time to determine the effectiveness of Management associated with Ma-based ranking was not evident to support particular teaching profiles in this study.
<table>
<thead>
<tr>
<th>Context Level</th>
<th>MA High (55.15%)</th>
<th>MA Medium (30.35%)</th>
<th>MA Low (29.95%)</th>
<th>MA High (28.55%)</th>
<th>MA Medium (27.35%)</th>
<th>MA Low (26.65%)</th>
<th>MA High (25.5%)</th>
<th>MA Medium (24.65%)</th>
<th>MA Low (23.2%)</th>
<th>MA High (19.85%)</th>
<th>MA Medium (13.25%)</th>
<th>MA Low (12.95%)</th>
<th>MA High (12.4%)</th>
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<tr>
<td>Ranking</td>
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</tr>
<tr>
<td>3</td>
<td>ST: 14.8</td>
<td>ST: 16.3</td>
<td>T: 15.1</td>
<td>T: 12.8</td>
<td>S: 17.7</td>
<td>ST: 10.8</td>
<td>ST: 11.9</td>
<td>ST: 15.9</td>
<td>T: 17.1</td>
<td>Wu: 15.7</td>
<td>M: 20.8</td>
<td>Wu: 13.7</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Tn: 12.3</td>
<td>S: 14.5</td>
<td>Tn: 13.5</td>
<td>S: 12</td>
<td>ST: 12.3</td>
<td>Wu: 5.9</td>
<td>T: 11</td>
<td>P: 8.2</td>
<td>S: 16.7</td>
<td>P: 15.1</td>
<td>T: 16.9</td>
<td>T: 12.2</td>
<td></td>
</tr>
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<td>M: 7.9</td>
<td>B: 5.4</td>
<td>P: 10.4</td>
<td>ST: 11.4</td>
<td>Tn: 11.8</td>
<td>M: 5.5</td>
<td>M: 2.9</td>
<td>Wu: 4.5</td>
<td>M: 9.3</td>
<td>A: 10.4</td>
<td>Tn: 6.6</td>
<td>M: 7.4</td>
<td></td>
</tr>
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<td>6</td>
<td>T: 6.5</td>
<td>Tn: 4.3</td>
<td>M: 10.1</td>
<td>G: 9.3</td>
<td>P: 7.5</td>
<td>M: 2</td>
<td>Tn: 6.7</td>
<td>M: 7.2</td>
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<td></td>
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</tbody>
</table>

Table 5.1: Relationship between Ma and other categories in ALT-PE
Third, a substantial difference between Motor-Engaged time (Ma, Mi, and Ms) and ALT-PE relates to poor instruction (Siedentop & Tannehill, 2000). The teachers in this study showed a little difference in this area regardless of the levels of teaching effectiveness. Although students who spent relatively less time in ALT-PE (Ma) showed more difference, it was neither significantly different nor similar levels: Ma H (0%), Ma M (0-0.75%), and Ma L (1.7%-8.7%). Only Bob’s dance and Lori’s dance units among the Ma M units showed the difference, 0.2% and 0.75%, respectively. However, no difference in this area was found in other units within the Ma M category, the same as the Ma H (Kevin’s dance unit). Also, the lowest difference among the Ma L of units was 1.7% in Susan’s soccer unit, which was a little different from the unit in the Ma M (Lori’s dance unit: 0.75%). Additionally, the students in Lori’s foot dribble unit, which marked the highest difference among the 12 units, engaged in more Motor Support with their peers during the activities (Ms: 7.1%), rather than inappropriate motor activities (Mi: 1.7%). Thus, the amount of the difference in the Motor-Engaged and the ALT-PE could not provide clear criteria to discriminate teaching profiles at each of the teaching performance levels.

Last, a total amount of instructional time (SM K) was compared among all teaching performance levels, but it was hardly possible to define teaching patterns associated with teaching effectiveness: Ma H (14.8%), Ma M (10.8%-30.5%), and Ma L (19.6%-37.2%). For example, Kevin allocated 14.8% of class time to the SM K categories in his dance unit as the Ma H, but Bob spent 10.8% of class time for instruction (SM K) in his dance unit as the Ma M along with only 0.2% of different between the Motor-Engaged time (Ma, Mi, and Ms categories) and the ALT-PE. Also,
Lori’s foot dribble as the lowest rank among the 12 units in this study allocated only 19.6% of class time on instruction (SM K). Overall, Kevin’s teaching practices in his dance unit, in which students engaged in more than 50% of class time in the Ma, mostly were aligned with effective teaching performance as the Ma H. However, there is no doubt that little difference exists among units in the Ma H, Ma M, and Ma L in this study, which results in difficulty justifying distinct teaching profiles among Ma-based three levels of teaching practices.

Though the Ma category was considered a proven scale to determine the effectiveness of teaching performance, particular patterns of teaching profiles relative to the Ma category and any subdivision or categories have not emerged in the ALT-PE data for this study. However, association between a subdivision and Management category was identified among variables in the ALT-PE in this study, and particular teaching profiles emerged as extremes. Table 5.2 displays the summary of percentage of time spent on the categories (Motor Appropriate and Management) and subdivisions (General Content, Subject Matter Knowledge, and Subject Matter Motor). A majority of the teachers across the units, who allocated the highest percentage of time in the Subject Matter Motor subdivision (Mo), spent less than 10% of class time on the Management category. However, there were exceptions to this teaching profile. Although Elis spent the highest percentage of class time in the Subject Matter Motor subdivision at the context level during her dance unit, the class devoted more than 10% (10.1%) of class time to the Management category.

Similarly, in several cases, teachers who allocated a greater amount of class time in both other subdivisions, General Content (GC) and Subject-Matter Knowledge (SM K),
spent a relatively high percentage of time in Management than other teachers: 20.8% in Susan’s soccer unit; 18% in Susan’s dance unit; and 13.7% in Amie’s team handball unit. However, Elis in her basketball unit and Amie in her dance unit spent only 9.3% and 7.2% of class time in Management, respectively, and they allocated the highest percentage of class time to the Subject Matter Knowledge subdivision.

Among the teachers in this study, it was clearly identified that the teacher who spent the highest percentage of time in Management (20.8%) allocated her class time in sub-categories of subdivisions other than Subject Matter Motor subdivision (e.g., knowledge). Overall, the analysis of the findings suggests a failure to identify consistent teaching profiles across teachers and units using the Ma category of ALT-PE to judge levels of teaching effectiveness. This finding might be interpreted as the impact of a small number of participants and little difference between the teachers, which resulted in difficulty in defining consistent and general teaching profiles associated with teaching effectiveness (Ma category). Though positive association between the Ma category and effectiveness of teaching performance was revealed in earlier studies, the findings of this study suggests the need for further exploration of how and when the Ma category of ALT-PE should be used discriminate teaching performance.
<table>
<thead>
<tr>
<th>Rank by Ma</th>
<th>Teacher</th>
<th>Unit</th>
<th>Motor Appropriate Category</th>
<th>Context Level</th>
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</thead>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Management</td>
</tr>
<tr>
<td>1</td>
<td>Kevin</td>
<td>Dance</td>
<td>55.15%</td>
<td>7.9%</td>
</tr>
<tr>
<td>2</td>
<td>Bob</td>
<td>Hockey</td>
<td>39.65%</td>
<td>2.6%</td>
</tr>
<tr>
<td>3</td>
<td>Elis</td>
<td>Dance</td>
<td>30.35%</td>
<td>10.1%</td>
</tr>
<tr>
<td>4</td>
<td>Amie</td>
<td>Team Handball</td>
<td>29.95%</td>
<td>13.7%</td>
</tr>
<tr>
<td>5</td>
<td>Susan</td>
<td>Dance</td>
<td>28.55%</td>
<td>18%</td>
</tr>
<tr>
<td>6</td>
<td>Bob</td>
<td>Dance</td>
<td>27.3%</td>
<td>5.5%</td>
</tr>
<tr>
<td>7</td>
<td>Lori</td>
<td>Dance</td>
<td>24.65%</td>
<td>2.9%</td>
</tr>
<tr>
<td>8</td>
<td>Kevin</td>
<td>Hockey</td>
<td>23.2%</td>
<td>2%</td>
</tr>
<tr>
<td>9</td>
<td>Elis</td>
<td>Basketball</td>
<td>19.85%</td>
<td>9.3%</td>
</tr>
<tr>
<td>10</td>
<td>Amie</td>
<td>Dance</td>
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<td>Susan</td>
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<td>12</td>
<td>Lori</td>
<td>Foot Dribble</td>
<td>12.4%</td>
<td>7.4%</td>
</tr>
</tbody>
</table>

Table 5.2: Summary of time spent within ALT-PE across teachers and units
Profiles of teaching practices in the CLASS

The findings of teachers’ scores in the CLASS instrument are categorized by the score range (e.g., high, mid, and low) determined by the instrument manual, to identify patterns of teaching profiles within and among teachers across units: high (scores between 6 and 7), mid (score from 3 to 5), and low (scores from 0 to 2) ranges. Figure 5.1 presents the total number of teachers scored in each range within the Emotional Support, Classroom Management, Instructional Support, and Student Outcome domains. Of the 12 units taught in this study, 9 were rated at the mid-range level in the Emotional Support domain on the CLASS instrument. Only one unit (Bob’s Dance unit) scored in the high range. Susan, the only teacher rated mid-range in the Negative Climate dimension under the Emotional Support domain among the teachers in this study, scored low in the Emotional Support during both her soccer and dance units.

In the Classroom Management domain, more than half of the teacher cases were rated high (7 teachers), and the remaining teachers were scored either mid (3 teachers) or low (two cases of a teacher). For the Instructional Support domain, none of the teachers reached the high range in any of their units. The teachers scored either mid (7 cases of teachers) or low (5 cases of teachers) across units for their Instructional Support. For the Student Outcome domain teachers scored high in 8 of the 12 units, and scored in the mid-range for the remaining 4 units.
Table 5.3 presents the score range of each teacher in each domain across units in the CLASS. Consistent patterns of teaching profile are identified based on the association among domains across teachers and units. First, the analysis of the finding shows some variation for teachers, but in general, teacher scores were consistent across units, especially in the high and low scoring categories. According to Table 5.2, each teacher reached the same score range between invasion and dance units across most of the domains. Lori, Amie, and Susan scored the same range in both domains during both of their two units. With the exception of Kevin’s Instruction Support domain (mid-range in hockey unit and low in dance), Bob’s Emotional Support domain (mid in hockey and high in dance unit), and Elis’s Classroom Management domain (high in basketball and
mid in dance unit), the other teachers reached the same score range in each domain across all units. However, it is clearly noticed that the different score range in each domain is identified between teachers.

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Unit</th>
<th>Domains</th>
<th></th>
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<th>Student Outcome</th>
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<td>Emotional</td>
<td>Management</td>
<td>Instructional</td>
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<td>Hockey</td>
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<td><strong>H</strong></td>
<td>M</td>
<td><strong>H</strong></td>
</tr>
<tr>
<td></td>
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<td>M</td>
<td><strong>H</strong></td>
<td>L</td>
<td><strong>H</strong></td>
</tr>
<tr>
<td>Bob</td>
<td>Hockey</td>
<td>M</td>
<td><strong>H</strong></td>
<td>M</td>
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<td><strong>H</strong></td>
<td>M</td>
<td><strong>H</strong></td>
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<tr>
<td>Lori</td>
<td>Foot Dribble</td>
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<td><strong>H</strong></td>
<td>M</td>
<td><strong>H</strong></td>
</tr>
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<td>Elis</td>
<td>Basketball</td>
<td>M</td>
<td><strong>H</strong></td>
<td>M</td>
<td><strong>H</strong></td>
</tr>
<tr>
<td></td>
<td>Dance</td>
<td>M</td>
<td>M</td>
<td>M</td>
<td>H</td>
</tr>
<tr>
<td>Amie</td>
<td>Team Handball</td>
<td>M</td>
<td>M</td>
<td>L</td>
<td>M (5.1)</td>
</tr>
<tr>
<td></td>
<td>Dance</td>
<td>M</td>
<td>M</td>
<td>L</td>
<td>M (4.7)</td>
</tr>
<tr>
<td>Susan</td>
<td>Soccer</td>
<td><strong>L</strong></td>
<td><strong>L</strong></td>
<td><strong>L</strong></td>
<td>M (3.3)</td>
</tr>
<tr>
<td></td>
<td>Dance</td>
<td><strong>L</strong></td>
<td><strong>L</strong></td>
<td><strong>L</strong></td>
<td>M (4.2)</td>
</tr>
</tbody>
</table>

Table 5.3: Summary of score range in each domain across teachers and units

345
Second, a clear pattern has emerged between the Classroom Management and Student Outcome domains. In 7 of the 12 units, teachers who scored high in the Management domain also scored high in the Student Outcome domain. Six of these units were taught by three teachers, Kevin, Bob, and Lori, who scored high in the Classroom Management and Student Outcome domains in both of the units they taught. The seventh unit was the basketball unit taught by Elis, where the Classroom Management and Student Outcome domains both scored in the high range. In Elis’s dance unit, though the Student Outcome was rated high, her score in the Classroom Management domain was mid-range. In summary, the scores for 7 of the 12 units in this study indicate a clear relationship between the Classroom Management and the Student Outcome domains. In all seven units, teachers who scored high in the Classroom Management domain also scored high in the Student Outcome domain.

The analysis of the findings related to the association between the domains in this study differs from other studies that utilized the CLASS instrument. According to Pianta, et al. (2005), the Emotional Support and Instructional Support domains are highly associated. Furthermore, high Emotional Support and Instructional Support are positively related to student achievement scores (Hamre & Pianta, 2005). However, within this study, the association between the Emotional and Instructional Support domains is not as clear. The one area where the pattern between the Emotional and Instructional Support domains was consistent with prior research was in Susan’s case, where scores were low in both the Emotional and Instructional Support domains. An explanation of these differences reveals inconsistent score range of the Instructional Support domain associated with other domains across the teachers. For example, none of teachers reached
a high range score in the Instructional Support domain. In the case of Kevin’s dance unit, though the Classroom Management and Student Outcome domains scored in the high range on the CLASS, Kevin scored in the low range on his Instructional Support domain. In addition, all teachers scored the same or lower in the Instructional Support domain than other domains. Bob scored in the high range in all domains but the Instructional Support domain (mid range) in his dance unit. Amie also scored mid range in all domains but the Instructional Support domain (low range).

The Instructional Support domain includes a dimension of assessing the “use of instructional discussions and activities to promote students’ higher order thinking skills and cognition in contrast to a focus on rote instruction” (Pianta, La Paro, & Hamre, 2006, p.16). The analysis of the findings in this study proposes that this domain seems to have a gap in determining the quality of instruction in the elementary physical education. Direct instruction that consists of task-oriented, teacher-controlled, and explicit instruction and immediate feedback (Rink, 1996) has been considered and supported as an effective instructional strategy in physical education (Blakemore et al., 1992; Boyce, 1992; Harrison et al. 1999; Silverman, 1991). For example, Boyce (1992) examined the effect of three teaching styles (command, practice, and reciprocal) on motor skill acquisition. Teaching styles close to the direct instruction (command and practice style) served to better skill acquisition than the student-centered instruction (reciprocal teaching style) that is more aligned with the instructional domain of dimension in the CLASS. Given the findings, although the CLASS instrument is validated across subject areas including physical education (Pianta, La Paro, & Hamre, 2006); the feasibility of the instructional domain within physical education seems to need further study.
Association between elements in the ALT-PE and CLASS

A search for patterns of teaching profiles was accomplished based on the association between categories in the ALT-PE and domains in the CLASS. Two extreme cases of profiles were identified from the consistently associated patterns between the Management category in the ALT-PE and scores in domains in the CLASS. The lack of association of the Ma category in the pattern led to descriptive analysis to define the patterns with limited consideration of Ma-related teaching effectiveness.

The first case of profiles of teaching practices was characterized by 1) less than 10% of Management time in the ALT-PE and 2) high scores on the Classroom Management and Student Outcome domains in the CLASS. These features were observed in 7 units of the 12 units taught by four teachers in this study and those profiles were titled as Profile A (see Table 5.4). In contrast, the units that displayed none of these features spent a remarkably high percentage of time in the Management and Transition (38.1% in dance unit, 37.7% in soccer unit), more than a typical physical education class (20-25%: Siedentop & Tannehill, 1999) in the ALT-PE. These units also spent high Management time (18-20.8%) in the ALT-PE and scored in the low range in three domains among four domains in the CLASS were categorized as Profile B. Susan’s two units were categorized in this Profile B. She allocated the highest percentage of time to Management (18% in dance unit and 20.8% in soccer unit) among the teachers and scored the lowest in the Emotional Support, Classroom Management, and Instructional Support domains in CLASS (see Table 5.3).

In regard to the association between findings in the ALT-PE and CLASS instruments, two themes emerged. First, although the Ma category was directly related to
student outcomes and teaching effectiveness (Metzler, 1989; Silverman et al., 1991), a teaching profile relevant to this variable was not found associated with other elements in the ALT-PE and CLASS. Instead, it was revealed that association between the Classroom Management and Student Outcome domains in the CLASS extends to the Management category in the ALT-PE. Second, these patterns emerged at the extremes. Table 5.4 displays the association between the elements of the ALT-PE (e.g., Management category) and the CLASS (score range in four domains). In this study, the units that had effective levels of Management time (less than 10%; Siedentop & Tannehill, 1999) regardless of other variables in the ALT-PE, had a high range of scores in the Classroom Management and Student Outcome domains in the CLASS (Profile A), except Amie’s dance unit. In addition, Susan’s two units (see Table 5.4) devoted a relatively large amount of time to Management and attained the lowest scores on the CLASS among teachers, which were defined as Profile B: low scores in the Emotional Support and Classroom Management and mid score in the Student Outcome. However, the remaining units were categorized neither as Profile A nor Profile B because those units of teachers showed elements of both Profile A and Profile B. For example, Amie spent less than 10% of class time in the Management, the same as Profile A units, but also scored in the low range in the Instructional Support domain of the CLASS. Elis spent more than 10% of class time in the Management similar to Profile B, but also scored high in the Student Outcome domain. Given the characteristics limit defining particular teaching profile related to the Management category drawn from ALT-PE and association between elements in the ALT-PE and CLASS. Thus, teacher ranking determined by the Ma category showed a limited association with any category and subdivision of the ALT-PE
and CLASS domains, but more association was identified in the Management category of the ALT-PE and CLASS domains.

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Unit</th>
<th>Profile</th>
<th>Teaching Level</th>
<th>ALT-PE</th>
<th>CLASS Domains</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Subdivision Allocation</td>
</tr>
<tr>
<td>Kevin</td>
<td>Hockey</td>
<td>A</td>
<td></td>
<td>2%</td>
<td>Mo&gt;GC&gt;K</td>
</tr>
<tr>
<td>Bob</td>
<td>Hockey</td>
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<td></td>
<td>2.6%</td>
<td>Mo&gt;GC&gt;K</td>
</tr>
<tr>
<td>Lori</td>
<td>Dance</td>
<td>A</td>
<td></td>
<td>2.9%</td>
<td>Mo&gt;GC&gt;K</td>
</tr>
<tr>
<td>Bob</td>
<td>Dance</td>
<td>A</td>
<td></td>
<td>5.5%</td>
<td>Mo&gt;GC&gt;K</td>
</tr>
<tr>
<td>Lori</td>
<td>Foot Dribble</td>
<td>A</td>
<td></td>
<td>7.4%</td>
<td>Mo&gt;GC&gt;K</td>
</tr>
<tr>
<td>Kevin</td>
<td>Dance</td>
<td>A</td>
<td></td>
<td>7.9%</td>
<td>Mo&gt;K&gt;GC</td>
</tr>
<tr>
<td>Elis</td>
<td>Basketball</td>
<td>A</td>
<td></td>
<td>9.3%</td>
<td>K&gt;Mo&gt;GC</td>
</tr>
<tr>
<td>Amie</td>
<td>Dance</td>
<td>-</td>
<td></td>
<td>7.2%</td>
<td>K&gt;GC&gt;Mo</td>
</tr>
<tr>
<td>Elis</td>
<td>Dance</td>
<td>-</td>
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<td>10.1%</td>
<td>Mo&gt;K&gt;GC</td>
</tr>
<tr>
<td>Amie</td>
<td>Team Handball</td>
<td>-</td>
<td></td>
<td>13.7%</td>
<td>GC&gt;Mo&gt;K</td>
</tr>
<tr>
<td>Susan</td>
<td>Dance</td>
<td>B</td>
<td></td>
<td>18%</td>
<td>GC&gt;K&gt;Mo</td>
</tr>
<tr>
<td>Susan</td>
<td>Soccer</td>
<td>B</td>
<td></td>
<td>20.8%</td>
<td>K&gt;GC&gt;Mo</td>
</tr>
</tbody>
</table>

Table 5.4: Summary of association between elements of the ALT-PE and the CLASS Instruments

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Research Question 2: Why Do Teachers Choose Specific Practices?

The second research question focused on the teachers’ rationale behind their choice of teaching practices. Observation of their lessons served to identify and inquire about teacher choices of specific teaching practices. Chapter 4 was devoted to the presentation of the findings associated with each teacher’s choice of managerial practices and instructional behaviors in each of two units, dance and invasion. This section will elaborate on the themes which emerged among teachers and the units related to their choice of teaching practices.

Four common themes emerged from the findings of each teacher who participated in the study: teaching practice was dependent upon students, the teacher, a given context, and time management. Some teachers described their teaching practices related to all four issues, but other teachers did not. First, the student issues that teachers considered in choosing their teaching practices consisted of student needs, (prior and/or current) learning experience, current skill level, skill difference, developmental stages, ability, and safety. In addition, the teachers chose the activities that would provide students with fun and excitement to motivate them for participation. These issues will be discussed in detail later in this section.

Second, teachers’ personal preferences and beliefs in the particular teaching practices influenced several teachers in their choices of teaching practices. For example, Amie explained how she decided to teach team handball for her invasion unit, although she was not used to teaching this in her class and her students were not used to playing it. She mentioned that her choice of sports (e.g., team handball) and activities was a reflection of her personality, as she is the kind of person who enjoys the challenge of
trying new activities and lessons. Amie’s preference of trying new things and challenging herself was a key component in terms of her teaching. In addition, Bob’s belief that having fun in class increases student interest and participation in physical activity led to his choice of game-type activities. Thus, personal beliefs and preferences influenced the choices both teachers made in their teaching practices.

A third factor that impacted the choices for activities was the context of students, school, and community. According to Goodlad, Soder, and Sirotnik (1990), contextual factors related to classroom elements, e.g., the size of the class, the size of the room, and the availability of equipment, have a direct impact on teachers’ instructional practices. The teachers in this study also elaborated on the modifications of their teaching lessons and activities, which took into account and reflected on the gym size and availability of equipment, along with the environment of school and community (e.g., low social and/or economic background of students in schools and community). For example, consideration and modification of the activities according to their small gym size and limited facilities available were found in Amie and Elis’s units. In order to provide real game-like settings, Amie created a square shaped cone zone where students could shoot from, (vs. the 6-meter line arc of a real handball court). Elis identified that using two baskets minimized student practice time and opportunities, as well as increased waiting time. To increase student opportunity to practice, Elis utilized trash cans in the center of the gym to practice shooting skills, in addition to using the two basketball baskets. For Amie and Elis, contextual factors greatly impeded and impacted their instructional practices in terms of modifications and limitations of what could actually be done.
It was also observed that environmental factors around the school influenced the physical education program in schools. For example, Amie recognized several health-related issues confronting students and their parents in urban schools and communities, e.g., medical condition, a lack of knowledge on fitness concepts, and limited facilities and programs that students could access and engage in. Given the context, she integrated fitness elements into every lesson. Once the students entered the gym, they wore pedometers to record the number of steps attained during the lesson. In addition, at the end of the class, students reported their participation in any physical activity outside of their physical education class, either at school or after school. In doing so, Amie attempted to motivate the students to engage in more physical activity, both in and outside of school. She believed her physical education program might be a valuable way not only to teach students various physical activities but to encourage students to engage in these activities on their own. In addition, Amie explained that her emphasis on fitness was a means to help students overcome environmental factors of inner city life that include a limited concept of and access to physical activity. Thus, the role of environmental factors played an important role in Amie’s lessons and activities.

Lori discussed how the district standards impacted her choice of teaching content and teaching practices. She modified the electric slide dance steps by adding kick-boxing steps in her dance unit in order to meet the aerobic component required under the district standards. Throwing activity stations were also included in her dance unit to complete district requirements for the year. It was clearly observed that Lori’s choice of teaching content was influenced by the year-to-year and grade-by-grade requirements of district standards.
These findings revealed the teachers’ integration of their socially constructed knowledge on the given context into their teaching practices. Transforming the knowledge to their teaching practices was identified in their modifying equipment and activities, meeting students’ needs, and following district standards. It showed the teachers’ reconstruction of teaching practices in relation to the community of practice through the process of “situated negotiation and renegotiation” (Lave & Wenger, 1999, p. 51) within their participation.

Last, the time management issue was discussed relevant to the use of management systems in general. The majority of teachers attempted to maximize activity time within each given class time, 30 to 45 minutes. They believed that fewer behavior problems occurred when adopting management strategies that allowed for more instruction and activity time. Relevant research also supported the fact that better management with less time spent on the Management in the ALT-PE is necessary for teaching effectiveness (Siedentop & Tannehill, 1999). A variety of management strategies to recognize, reinforce, and prompt good student behavior was identified across the teachers and units in this study. Several management strategies were used: clip on the wheel, rewarding system with points or stickers, sports award, and behavior levels on traffic-light or 1 through 3. These strategies were used in multiple ways and in many combinations by teachers. For example, Elis used the reward system by awarding stickers to the behaviors which met her expectation and gave sports awards to reinforce good behavior. In addition, she used the traffic light to recognize individual student behaviors both appropriate and inappropriate. Other management systems were observed in Amie’s classes as she used
several point systems during class time and modified Hellison’s (1995) levels of behavior at the end of the class.

The next managerial teaching practices identified were setting the rules and routines. Setting the rules and routines were identified as significant protocols for establishing effective managerial task systems and learning environment within physical education class settings (Fink & Siedentop, 1989; Graham, Holt/Hale, & Parker, 2004; Pangrazi, 2001). In addition, effective physical educators established instructional and managerial routines to ensure appropriate student behavior and smooth operation of class activities (Fink & Siedentop, 1989). According to the data described in chapter 4, most teachers in this study consistently utilized similar routines and applied the same rules and consequences across lessons and units in order to minimize Management time and devote more time to instruction and/or activities. For example, Bob had clear routines during the entire class period, e.g., entry, start and stop signal, equipment, and closure. Once students in Bob’s class entered the gym, they sat at places which had been designated at the beginning of the year. During class, music was used as a start and stop signal. Before moving to their assigned place for closure, students also engaged in putting away the equipment they used during class. According to Bob, there were consequences for misbehavior (time-out, sending to principal, etc), but no behavior that required implementing these consequences occurred nor were any observed during Bob’s two units. Setting the rules and routines is aligned with the teachers’ intention to implement management systems into their classes in this study. Clear routines were also observed across Amie’s two units: lining up in front of the gym, wearing pedometers, doing warm-up with locomotor skills by moving around the gym and stretching in the center of the
gym, filling out a booklet for assessment at the end of class, returning pedometers, and lining up in front of the gym for closure. She believed that these management systems (e.g., routines, reinforcement) allowed for increased instructional and activity time in her classes, where formerly a lot of student behavior issues had existed.

Choices teachers made for teaching practices were explained by four themes: dependent upon students, teachers, context, and time management. The analysis of the findings identified distinct patterns of the teachers’ choices. The choices of teaching practices were related to the teaching profiles discussed in an earlier section. The distinct patterns of teachers’ choices were identified between Profile A and Profile B of teachers within this study. The following section will detail the distinct patterns of their choices.

Patterns of teacher choices of teaching practices in Profile A

Profile A of teaching practices was characterized by identifying teachers who scored in the high range in the Classroom Management and Student Outcome domains in the CLASS and who spent less than 10% of class time on Management in the ALT-PE. Data on teachers who fit Profile A revealed that concerns for students were important contributors to the decisions about teaching practices (Lori, Bob, Kevin, and Elis’s basketball), including their choices of instructional activities and managerial strategies. They considered their students’ skill levels and differences (e.g., previous learning, developmental stages, and ability) for the purpose of increasing student learning and participation in class. For example, a variety of activities that included different levels was adopted in one lesson and/or across the unit. Lori grouped students by their skill levels and assigned each group a different goal to achieve when they threw balls toward a target displaying a monetary value. Lori’s case showed transferring her knowledge on the
students’ skill level into her teaching practice. The teachers believed that this way of considering students’ skill levels might provide students with more opportunities to respond to the activities that fit their skill levels and needs. They also intended to increase student learning by adopting levels of activities appropriate to their student ability level. Students’ developmental and skill levels were considered critical to maintain high expectations for student learning (Griffey & Housner, 1991; Schempp et al., 1998). Moreover, creating and/or adapting these activities seemed to demonstrate exemplary “knowledgeable skills” in the teachers who developed their activities through the process of participation in their relations with students in the situated community (Lave & Wenger, 1999).

Although the teachers attempted to adopt activities to address student differences, the impact of those practices on student learning was not the focus in this study. Previous studies have discussed how student engagement in appropriate level activities was a means to increase student learning. According to Silverman (1985), practice at an appropriate level was identified as the positive predictor for student achievement; likewise, practice at an inappropriate level was negatively related to student achievement. However, the findings of this study showed that teachers who met the criteria for Profile A were not always highly ranked in the Motor Appropriate category within the ALT-PE instrument which positively correlates to student learning. In addition, this study was not intended to explore teacher effectiveness and appropriateness within Profile A teaching practices. Given these facts, how Profile A teaching practices affected student learning could not be discussed. However, the teachers’ intentions and attempts to provide the activities, which were designed to meet student needs, seem at least supportable. The
following statement represents the Profile A of unit teachers’ rationale for choices in teaching practices:

My unit must incorporate all levels of performance at all times. That makes teaching more difficult, but it also makes it more exciting. So my unit is designed to attend to a diverse performance level. (Kevin, Interview #3)

In addition, the analysis of the findings revealed that the teachers who taught Profile A units considered time management as a way to maximize student learning within the given class time. They were more likely to choose particular types of instruction and curriculum, such as station activities, Sport Education model, and the Tactical Approach model as a means to attain more activity time for students. For example, Kevin adopted elements of tactical approach and Sport Education curriculum (e.g., student role, maintaining the same team across the unit) models to teach his floor hockey. He highlighted that adopting these curriculum resulted in “the most effective use of time for that sport” (Interview #4) and for more learning. Lori also preferred to utilize station activities that would allow for more student on-task time. She believed that these activities could contribute to increased practice opportunity as well as student learning.

Overall, teachers who taught units within the Profile A in this study illustrated that concerns for student learning influenced teacher decisions in their choice of teaching practices. They attempted to provide activities that reflected student skill levels, developmental stages, learning experiences and differences, and student diversity. These findings support the findings of other studies that emphasize the needs of incorporating knowledge on students into teaching practices. The knowledge on students, such as students’ different learning pace and skill levels in the subject matter to be taught and their developmental level at the given grade/age, should be considered to provide
appropriate instructional and pedagogical strategies and curriculum for the students (Griffey & Housner, 1991; Schempp, Manross, Tan, & Fincher, 1998).

Units of teachers who categorized in the Profile A also used several curriculum models (Tactical Approach, Sport Education) to promote learning time and practice opportunity. From the analysis of findings, it is clear that adoption of these teaching practices was the choice and effort of the teachers who taught units within the Profile A to increase student learning. Kevin’s statement, “What should drive every teacher’s choice is whether it increases student achievement level” (Interview #3), represents a rationale for the Profile A of teachers’ choices of their teaching practices. Kevin in his floor hockey unit considered the diversity of students and integrated two specific curriculum models. He was identified as the only case reaching more than 50% of the Ma in the ALT-PE.

*Patterns of teacher choices of teaching practices within Profile B*

In this study, the Profile B was characterized by the units that scored low range in three domains, along with one of the lowest scores on the student outcome domain in the CLASS. Teachers in these units spent more (37.7%-38.1%) than a typical physical education class of the Management and Transition (20%-25%) and the highest Management (18%-20.8%) in the ALT-PE among units in this study. Susan’s two units, soccer and dance, were categorized as the Profile B. According to the analysis of findings, Susan’s choice of teaching practices was infused with her favorite method book and assumptions about her students. Her instructional decisions were initiated from her favorite book, *Dynamic Physical Education for Elementary School Children* written by Dauer and Pangrazi (1986). Susan had 20 years of teaching experience in her current
district, but it was her first time teaching at the current school. To understand her students’ previous learning, she revisited the Dauer book (Dauer & Pangrazi, 1986) and chose the activities which she thought appropriate for her 4th grade students. In other words, Susan chose her teaching practices, as the book suggests, for the specific grade level. Moreover, her perception on the current low skill levels directly led to her choice of teaching practices. She intended to modify her teaching content to a level lower than is supposed to be taught in a grade.

The differences in the process of understanding previous learning experience and/or current skill level of students are identified among teachers who taught units within the Profile A and Profile B. Susan, as a teacher who taught two units within the Profile B, assumed that her students’ previous learning and/or current skill level was based on the information from the book and her viewpoint of current overall student trends in low motor skills. In contrast, several teachers who taught one of units within the Profile A devoted the first lesson or a certain amount of class time during the lesson to recognizing the students’ previous learning, current skill levels, and their need to choose activities that might fit their students. For example, Kevin mostly focused his first lesson on seeing how students were doing in the specific sport of the unit to plan for the rest of lessons. He attempted to identify new students who needed more attention and individualized instruction and planned future lessons accordingly. During the game situation, it was observed that he pulled out those students who seemed to need more instruction related to skill and tactics and corrected their problems with specific instruction. Bob also devoted the first lesson in the floor hockey unit to identifying students’ needs. He commented:
Sometimes you can use simple questions, ‘Have you ever thrown a ball before or have you ever held a hockey stick?’ Or you see how they move in the first class. It takes several classes before you get to know the kids. It is not just spot check. But you watch how they interact with the other students, how they move, if it is hockey how they grab the stick. So you have to get to know them, talk to them, and watch in class what they are doing. (Bob, Interview #11)

The analysis of findings of the choices made in teaching practices revealed that teachers who taught Profile A units attempted to adopt their activities by reflecting on their students’ previous learning, current skill level, developmental stage, and ability to facilitate student learning. In contrast, Susan, who taught Profile B units, adopted classroom activities by limited reflection on her students’ previous learning, current skill level, development stage or ability. Specifically, Susan chose her teaching practices because a book suggested it. In addition, she chose her teaching practices based on her perception of low motor skills in current students. Susan did not attempt to analyze and consider her students’ exact needs, which was different from what the teachers who taught Profile A units did. These findings showed contradictory learning of what Lave and Wenger (1999) advocated. For example, Susan’s choice of teaching practices was likely an example of decontextualized decisions (simply adopting activities from the book) and less related to the students in the situated community of practice. These findings support the fact that teachers require an equally rich and varied repertoire of teaching strategies underlying an understanding of their students (Darling-Hammond, Wise, & Klein, 1997), maybe rather than simply delivering teaching practices learned from the book, regardless of students.
Research Question 3: How Do Teachers Develop Competencies within their Profiles of Professional Practices?

The findings described in Chapter 4 reveal that the teachers in this study have described a variety of their learning experiences as a means to develop competencies in their teaching. The teachers’ learning experiences are broadly classified into two types in this study: independent learning and community learning. Independent learning is considered as self-learning that occurs through personal experience and/or from existing resources and does not require engagement in personal interaction with other people. For example, this learning type includes a teacher’s own childhood experiences, teaching experiences, and own ideas; it also includes any book and/or Internet resources the teacher has found. In contrast, community learning is defined as learning that occurs through interaction with anyone else, in which other people are considered as the main resources for their learning. Examples include learning from professional development workshops, diverse levels of conferences (e.g., state, national level), and other colleagues. Distinct learning experiences are identified between teachers in the Profile A and Profile B of this study. The following section will discuss the differences along with the evidence.

Characteristics of teacher learning within Profile A

Teachers who taught Profile A units in this study utilized both independent learning and community learning to implement their teaching practices. Learning of these teachers seems to be an on-going activity to improve their teaching and their students’ learning. The findings described earlier in this chapter revealed that the independent learning for teachers within the Profile A mainly consisted of four characteristics:
learning from past teaching experiences, their own ideas, books, and Internet resources. For example, Elis stated that, “I have books and I have for me the Internet where I pull things up” (Interview #2). She believed that those resources allowed her “to keep it fresh and keep a new spin on things” (Interview #2). Lori supported the use of Internet resources to get ideas, but she also recognized the need for modifications in order to implement them into her class. Lori also created her ideas for teaching by thinking about teaching even during her personal time, for example, while watching TV (music channel). It seemed that her passion for teaching allowed for creating and implementing her own ideas into her teaching. Only Elis described using her previous experience as a former basketball player as a resource in her class to teach her basketball unit.

Teachers who taught units within the Profile A described their community learning from other teachers, professional development workshops, and conferences. For example, Kevin collaborated with the music teacher in his school to teach a dance unit. He learned dance steps from the music teacher and shared his knowledge on students’ skill levels with the music teacher to choose appropriate levels of dance activities for each grade. While teaching the dance unit, Kevin mainly taught certain fundamental motor skill types of steps and demonstrated dance steps with the music teachers together.

Bob was identified as one of the teachers in this study who was actively attempting to participate in diverse levels of conventions, such as The Ohio Association for Health, Physical Education, Recreation, and Dance (OAHPERD) or American Alliance for Health, Physical Education, Recreation, and Dance (AAHPERD) to “get something new” (Interview #3). His district’s financial support ($120 per year) was limited, but a unique case across teacher districts in this study. This support motivated
him to attend the conventions. Bob also believed that sharing teaching practices (e.g., activities, management strategies) with other teachers was a valuable resource for developing his own teaching practices, along with resources from textbooks. Thus, the teachers who taught Profile A units discussed the use of a variety of resources and learning experiences to implement their teaching practices.

In addition, all teachers within the Profile A modified teaching ideas and activities learned from other resources through the reflection process to develop and implement better teaching practices for their students. For example, Elis had her students fill out an exit ticket on the last day of each unit. Her students anonymously wrote down what activities they liked or disliked during the unit. She believed that “feedback from the kids” (Interview #2) is valuable, and she considered their feedback for her future lessons. Kevin said, “Learning to reflect on my own teaching has been very valuable” (Interview #2). He strongly believed that the reflection on his teaching experiences ultimately allowed him to pursue the teaching practices that met the need of his students. Modification in the activity led by his reflection was observed in his floor hockey unit. When he introduced the butterfly drill in the second lesson, his main objectives were to practice receiving the pass while on the move, controlling the pass, dribbling, and making a shot. In the next lesson, it was observed that he added goalie to the drill and he explained his modification of the drill to help students understand the whole practice and the main concepts for each role in the drills. This modification was exactly “based on reflections of the last lesson” (Kevin, Interview #3).

Bob also described his way of reflecting on his teaching, which was indicated as trial and error. He believed that trial and error was required to provide teaching practices
that met his student needs. He noted that “a lot of trial and error helps figure out what
works best for you and what needs to be changed to accomplish all of your goals” (Bob,
Interview #11). He combined his learning from different resources, and he modified them
to reach his students needs through the trial and error process. For example, he utilized
books and workshop resources to design his Tinikling dance unit. Based on his reflection
on his weak demonstration without using jump bands, he utilized students to demonstrate
in the second lesson.

All teachers who demonstrated Profile A teaching practices in this study
discussed the significance of the reflection process combined with their past teaching
experiences and diverse learning experience that continually occurred. This finding
supports the emphasis of the reflection as necessary for the on-going professional
development of their teaching profession (Tinning, 1992; Tsangaridou & O’Sullivan,
1997). It is believed that reflection can contribute to improvement of teaching practices
(Tsangaridou & O’Sullivan, 1997). In addition, the significance of the reflection has been
education teachers are reflective practitioners who evaluate the effects of their action”
(Standard 8.). The Profile A in this study supported the evidence of how the reflective
practitioners continue to be engaged in learning for better teaching and for learning of
their students.

Teachers who taught Profile A units in this study discussed their diverse learning
experiences from different types of learning: independent learning and community
learning. The independent learning for the teachers within the Profile A includes their
own books, ideas, Internet resources, and personal experiences. Community learning that
the teachers have been engaged in is demonstrated by working with other teachers and participation in workshops and conventions. These findings reveal that teachers who taught Profile A units accessed resources in their own ways within situated opportunities. However, the teachers learned from similar types of resources and transformed their learning through the reflection process. It is evident that although the teachers who taught Profile A units were situated in diverse contexts, they seemed to share membership in a community of practice through participation “in an activity system about which participants share understandings concerning what they are doing and what that means in their lives and for their communities” (Lave & Wenger, 1999, p. 98). Teacher reflection integrated with on-going learning is recognized as convergent characteristics of learning across all teachers within the Profile A units.

**Characteristics of teacher learning within Profile B**

According to the analysis of findings, two units taught by Susan were categorized into the Profile B in this study. Susan, who demonstrated low teaching performance in the Management category of the ALT-PE and CLASS instruments, described her limited learning experiences during those units as both independent learning and community learning types. Her independent learning included personal experiences from her childhood and one specific book. Susan has not experienced a lot of community learning throughout her 20-year teaching career, but she has indicated learning at college, participating in workshops, and learning from a former teacher in her new school, all of which indicate different types of community learning.

Aligned with the fact that Susan chose most of her teaching practices based on her favorite book, her learning was mostly devoted to this book that was introduced to her 20
years ago. She believed that “The Dauer book has great resources in it” (Interview #2). In addition to the Dauer book, Susan’s other main resource for teaching her class was the knowledge she had acquired in college more than 20 years ago. She said the dances that she taught in her dance unit were “learned from the college classes” (Interview #5). The soccer unit she taught was based on activities learned from college, as well as ideas from other teachers and from the Dauer book. Susan mentioned that “I got them [ideas] from college, part of them from college; I added the throw-in that came from another teacher, but most of them also where suggested in the Dauer book” (Interview #6).

Susan has been teaching for 20 years in the same district. She revealed that she still utilized and relied on her learning from college and had been using the same material for 20 years. In addition, she has been teaching the same way she learned to teach 20 years ago. These findings provided evidence of her limited socially constructed knowledge on the current educational issue. For example, education professionals recognize the importance of high quality education to improve student learning (NCATE, 1998). Content-specific standards in physical education, such as National Physical Education Standards (1995, 2004), National Standards for Beginning Physical Education (1995) have been developed to improve teacher quality and increase student learning in physical education, and standards-based instruction has been implemented into the entire school setting. However, it was revealed that context in general education and physical education did not affect Susan’s teaching practices. She continued to maintain and follow the curriculum that “was given 20 years ago” (Interview #2).

Susan’s lack of change for the past 20 years is in direct contrast to the teachers who taught Profile A units in which teachers integrated continued learning experiences.
into their teaching practices. Although other teachers in the same district described diverse learning experiences (e.g., Amie’s engagement in the PEP project, Elis’s experience in workshops), she stressed a lack of district support to describe her exposure to limited learning opportunity throughout her teaching career. She commented that, “We used to have workshops, but we don’t have the workshops any more because they have shortened the school days” (Interview #2).

Teachers’ learning within Profile A units was characterized as the reflection process embedded in their continued learning experiences. They intended to modify activities to meet the needs of their students. In contrast, the teacher’s learning within the Profile B was quite different. Data from interviews with Susan in this study revealed that she has been engaged in limited continued reflection. Susan’s reflection on the lesson led to her re-teaching the activity, which meant “different ways to explain it” (Interview #3), rather than modifying the activity. Data from field notes also revealed that she repeated describing and refining information on the activity to practice throw-in by answering several student questions with limited student opportunity to practice during the entire second lesson. The third lesson continued the same activity as the second lesson. Susan also repeated the same pattern of instructional practices (informing and refining the information - not a skill) during the entire class time. The following statement presents her way of reflection:

I had to re-teach the throw-ins because they were having a hard time throwing it (ball) in properly. They were thrown-in illegally. I actually had to re-teach two lessons at two different times. And I don’t even remember what I did, but each lesson I did a different thing (explain) to help them realize the proper throw-in. (Susan, Interview #6)
Susan’s teaching in the Profile B presented her limited learning experiences during her 20-year teaching career. No evidence of continued reflection was found in her experience. Her non-continued learning experience, along with low teaching performance in this study, supports the significance of continued learning to improve teaching practices in different stages to meet the needs of teachers (Feiman-Nemser, 2001).

Research Question 4: Are There Variations in the Professional Teaching Practice Between Teachers Who Teach in Contextually Different Environments?

The fact that teachers in this study worked at different schools in different districts requires understanding the contextual environmental differences among the teachers. The contextual environment characteristics for each teacher were gathered and identified from two sources: the data from annual school report information and teacher descriptions of the contextual factors that they reported in the beginning of this study. Both sources were utilized to identify characteristics of the school context for each teacher. The teachers are distinguished by the district type, such as urban and suburban schools. From each district type, the focal area was to identify the ethnic and socio-economic background of the students. For example, students who are eligible to receive free or reduced price lunch in the school accounted for their socio-economic status. Another school context the teachers identified from the teachers’ report on the participant form was their perspectives regarding facilities and support. The facility includes gym and equipment that are available for their physical education program. The teachers also described support for physical educators and physical education programs from their principal and district.
Table 5.5 presents a summary of each teacher’s contextual factors along with his/her teaching practices from the ALT-PE and CLASS instrument. It shows that even the teachers in the same or similar districts were situated in different contextual environments. For example, three teachers in this study, Susan, Amie, and Elis, worked in urban schools. Urban is defined as being relatively poor and mostly non-white (Noguera, 2003; Urban Education, n.d.). Susan and Amie’s schools consisted of more African-American students, 60% and 76% respectively, than Elis’s urban school and the other teachers’ suburban schools. Specifically, Elis’s urban school seemed more like a multiracial school, of which 48% were Caucasian, 20% were Hispanics, 16% were African-American, and 14% were Asian/pacific islander. Although urban schools are defined as schools where more than 40% of the students receive free or reduced price lunch (Urban Education, n.d.), only Amie’s school (74%) in this study met this definition. The other two urban schools were slightly lower than this criterion, as 38% of the students in Susan’s school and 37% in Elis’s school participated in the lunch program.
<table>
<thead>
<tr>
<th>District</th>
<th>Teacher</th>
<th>Ethnic (%)</th>
<th>Lunch Program</th>
<th>Facility/ Support</th>
<th>Unit</th>
<th>Rank</th>
<th>ALT Sub-divisions</th>
<th>CLASS</th>
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<tbody>
<tr>
<td>Urban</td>
<td>Susan</td>
<td>AA(60) C (33)</td>
<td>38%</td>
<td>Gym (-) Equip (-)</td>
<td>Good Poor</td>
<td>Dance</td>
<td>Profile B</td>
<td>18% GC&gt;K&gt;M</td>
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<td></td>
<td>Soccer</td>
<td>Profile B</td>
<td></td>
<td>20.8% K&gt;GC&gt;M</td>
<td>L L L M (3.3)</td>
</tr>
<tr>
<td>Amie</td>
<td>AA(76)</td>
<td>C (19)</td>
<td>74%</td>
<td>Gym(+ Equip (+)</td>
<td>Good Poor</td>
<td>Dance</td>
<td>7.2% K&gt;GC&gt;M</td>
<td>M M L M (4.7)</td>
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<td>Team Hand-ball</td>
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<td></td>
<td>13.7% GC&gt;Mo&gt;K</td>
<td>M M L M (5.1)</td>
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<tr>
<td>Elis</td>
<td>C(48), H (20) AA(16)</td>
<td>37%</td>
<td>Gym (-) Equip (-)</td>
<td>Good Poor</td>
<td>Dance</td>
<td>10.1% Mo&gt;G C</td>
<td>M M M H</td>
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<td></td>
<td>Basket ball</td>
<td>Profile A</td>
<td></td>
<td>9.3% K&gt;Mo&gt;G C</td>
<td>M H M H</td>
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<tr>
<td>Sub-urban</td>
<td>Lori</td>
<td>C(88) AA(5)</td>
<td>26%</td>
<td>Gym(+ Equip(+))</td>
<td>Good Poor</td>
<td>Dance</td>
<td>Profile A</td>
<td>2.9% Mo&gt;G C</td>
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<td>Foot dribble</td>
<td>Profile A</td>
<td></td>
<td>7.4% Mo&gt;G C</td>
<td>M H M H</td>
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<tr>
<td>Kevin</td>
<td>C (75)</td>
<td>31%</td>
<td>Gym(+ Equip(+))</td>
<td>Poor Poor</td>
<td>Dance</td>
<td>Profile A</td>
<td>7.9% Mo&gt;G C</td>
<td>M H L H</td>
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<td></td>
<td>Floor hockey</td>
<td>Profile A</td>
<td></td>
<td>2% Mo&gt;G C/K</td>
<td>M H M H</td>
</tr>
<tr>
<td>Bob</td>
<td>C (75)</td>
<td>AA(12)</td>
<td>13%</td>
<td>Gym (+ Equip (+)</td>
<td>Poor Good</td>
<td>Dance</td>
<td>Profile A</td>
<td>5.5% Mo&gt;G C</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Floor hockey</td>
<td>Profile A</td>
<td></td>
<td>2.6% Mo&gt;G C</td>
<td>M H M H</td>
</tr>
</tbody>
</table>

- C: Caucasian, H: Hispanic, AA: African-American

Table 5.5: Contextual variation between teachers
The three urban teachers described a limited space for their schools’ physical education programs because their gyms were used for breakfast and lunch. Their gyms were smaller than the other suburban teachers’ and were surrounded by tables and milk coolers. Although Amie believed that her equipment was enough for each student, the other two urban teachers believed their equipment was limited for each student in their physical education programs. These limitations in facilities and resources have been commonly identified as examples of the characteristics of urban schools that negatively affect teaching practices and student learning (Henninger, 2007; Urban Education, n.d.; Williams & Williamson, 1992). All three urban teachers in this study appreciated their principals’ support for physical education programs in their schools. Despite the principals’ support, district level of support for physical education programs and physical educators was perceived as very poor. Few professional development opportunities have been provided or supported. Teachers described a lack of district-based support by the evidence of budget-cuts for hiring physical educators across the district.

The contextual environments of the schools for the suburban teachers (Lori, Kevin, and Bob) were identified as similar or different from the urban context. The majority of students, between 75% and 88%, were Caucasian in the suburban schools. The percentage of students receiving free or reduced price lunches in these suburban schools was lower than the urban schools in this study, but higher than what is commonly perceived for suburban schools (10%; Urban Education, n.d.). Though Bob’s school had the lowest percentage of low income students (13%) among all teachers in this study, significant difference in this percentage was not found between two other suburban
teachers’ schools, Lori (26%) and Kevin (31%), and between two urban teachers’ schools, Elis (37%) and Susan (38%).

The description of available facilities, resources, and principals’ support systems were different between the urban and suburban teachers. All suburban teachers described sufficient equipment and gym size for their physical education programs. Though all urban teachers considered their principals’ support positive, the suburban teachers perceived the support for physical educators and physical education programs from their principal as different. Only Lori described her principal as supportive. At one time, Kevin and Bob also had principals who were supportive. District support was considered weak for Lori and Kevin’s school. Bob described support for professional development in his district as teacher meetings at the district level and funding ($120) for each teacher to participate in conferences.

Given the understanding of the contextual environments of the teachers in this study, it was clearly identified that the teachers worked in different school contexts across urban and suburban school districts and even within the same type of districts. However, the variation in teaching practices will be identified and discussed in accordance with contextual distinction between the urban and suburban teachers associated with findings from the ALT-PE and CLASS. As can be seen in Table 5.4., three variations are characterized based on the data from the ALT-PE and CLASS instruments. First, all suburban teachers allocated more time on the Motor-Engaged subdivision (Subject-Matter Motor) than on other subdivisions, such as the Subject-Matter Knowledge and General Content subdivisions in the ALT-PE. These findings reveal that suburban
teachers tended to create classes where students could possibly be engaged more in content-related motor activities (Siedentop & Tannehill, 1999). However, all urban teachers’ units except Elis’s dance unit allocated the most time, not to the Subject Matter Motor subdivision, but to one of the other two subdivisions. As an exclusive case among the urban teachers, Elis allocated the most class time to the Subject Matter Motor subdivision during her dance unit.

Second, all units taught by suburban teachers were categorized as the Profile A. They scored a high range in the Classroom Management and Student Outcome domains in the CLASS. Also, less time was spent on Management in the ALT-PE, ranging from 2% to 7.9%. In contrast, two units taught by Susan in urban schools were categorized as the Profile B in this study. She scored a low range in three domains: Emotional Support, Classroom Management, and Instructional Support, and she scored the lowest in the Student Outcome domain (3.3 in soccer unit and 4.2 in dance unit) in the CLASS across teachers. Susan’s Management time during her two units reached the two highest percentages among teachers. This was not considered sufficient time for effective teaching (Siedentop & Tannehill, 1999): 20.8% in the soccer unit and 18% in the dance unit. In contrast, Elis’s basketball unit was identified as a unique Profile A unit in this study among the urban teachers.

Last, the findings of this study revealed that urban teachers spent a greater percentage of time on Management in the ALT-PE than nonurban teachers in general. Aligned with the fact that all suburban teacher units were categorized as the Profile A, less time was spent on the Management in the ALT-PE (between 2% and 7.9) in their
units. The lowest and greatest time spent on the Management among urban teachers was 7.2% and 20.8%, respectively. Susan, as the only teacher who taught units within the Profile B in this study, spent the highest percentage of time on Management in ALT-PE (20.8%) among urban teachers and across all teachers. In addition, even though Elis’s Management time (9.3%) spent in the basketball unit, which was the only Profile A among urban teachers’ units, was relatively lower than other urban teachers, it was still higher than other suburban teachers’ Management time. An exceptional case was found with Amie’s dance class. Though her dance unit was categorized as neither a Profile A nor Profile B unit, the Management time spent was identified as lower than several of Profile A units.

This study attempted to describe variation in teaching practices associated with teachers’ given environments, such as teaching variation between urban and suburban teachers. Three distinct teaching practices were discussed between urban and suburban school teachers in general: 1) allocation time on Motor-Engaged activity, 2) teaching pattern (Profile A or Profile B), and 3) time spent on Management category in the ALT-PE. Although the same trends in teaching practices were identified across all suburban teachers in this study, urban teachers showed a divergent level of teaching practices on the ALT-PE and CLASS between each other. This analysis of the findings requires a discussion of the variation identified among the urban teachers. For example, Elis’s teaching practices during her dance and basketball units were similar with those of suburban teachers within two variation categories: 1) allocation time and 2) teaching pattern. Elis allocated the most time to the Motor-Engaged activity in her dance unit. Her
basketball unit was also categorized as the Profile A. Considering her school context; she had students with somewhat different backgrounds than those from other urban schools. Although the majority of students were African-American in other urban schools in this study, she had more of a multi-racial student makeup in her classroom: Caucasian (48%), Hispanic (20%), African-American (16%), and Asian/pacific islander (14%). The percentage of students receiving free or reduced price lunch in Elis’s school (37%) was less than the other urban teachers’ schools (Amie: 74%, Susan: 38%), but higher than the suburban schools. However, she described limited facilities and equipment for her physical education program as similar to what other urban teachers described. Although this study did not focus on how each of the contextual aspects affected teaching practice in depth, it is clear that Elis faced similar contextual conditions (such as diversity among students and limited facilities) that other urban teachers in this study faced. Griffin (1985) and Henninger (2007) found that in general these conditions may have negatively affected teaching practices. However, Elis described her attempts and effort to involve all students in her class. For example, she described her teaching practice of using Latino music in class, in response to the increasing number of Spanish-speaking students in her school. Regarding the limited equipment, Elis said, “What do I have and how can I use it best?” (Interview #5). One example of her resourcefulness in a limited gym space with lunch tables lining the walls was observed during her basketball unit. The gym had only two baskets set up for about 20 students, but she used trash cans as additional baskets to allow all students to have more opportunity for practice. Elis demonstrated her ability to modify her teaching practices within confronted contextual barrier at the classroom level.
Another exclusive case from the teaching profiles of urban teachers in this study was identified in Amie’s dance unit. Amie’s school context seemed closer to the commonly perceived urban school context that negatively affects teaching practices (e.g., wide range of students’ poverty, racial, etc: Griffin, 1985) than other urban teachers’ schools in this study, in terms of students’ background (76% of African-American and 74% of students receiving free or reduced price lunch) as well as limited gym space. However, she had the lowest percentage of the Management time (7.2%) on the ALT-PE during her dance unit among the other urban teachers. This was even lower than some of suburban teachers’ units, such as Lori’s foot dribble (7.4%) and Kevin’s dance (7.9%). Even the Management time spent during her team handball unit (13.7%) was higher than Elis’s units but lower than Susan’s, another urban teacher. Though student behavior problems are considered common in urban schools, along with poor student environment (Griffin, 1985; Urban Education, n.d.), Amie’s Management in the ALT-PE seemed relatively non problematic in this study. However, given her school context, Amie experienced a struggle with behavior issues reflecting her students’ backgrounds and contextual environments in the beginning of her teaching at the school. She commented on her students’ behavioral issues, “We (inner city schools) are having kids with low economical situation and environments, and they don’t have those social skills a lot of time, sometimes I really have to hit on social skills more than actual the physical skills” (Interview #2). Amie also described how those student behavior problems affected her teaching practices:

There are a lot of students’ social behavior issues in this school, so I’m trying to talk about social skills and responsibilities, and integrate them into class activities.
Unfortunately it takes me away from physical skill teaching sometimes, but once I get students’ behaviors controlled, physical skill instruction and activities take place. If I don’t have management strategies, we get nowhere. I have to stick to the management strategies consistently. Otherwise it would be chaos. (Amie, Interview #7)

It seemed that Amie was aware of the importance of behavior management to allow ‘teacher’s teaching’ and ‘students’ learning’. The use of several management strategies was actually observed during her units, and sometimes those were embedded in her instruction: Hellison’s social development model and point systems. Thus, her awareness of students’ needs (social skills) and her response to those needs resulted in spending less time on the Management in the ALT-PE. In contrast, Susan, as another urban teacher, described similar student behavior problems in her class but responded differently from Amie. Following her principal’s suggestion, she chose to stop talking once she encountered behavior problems. Susan commented:

I was having a lot of problems with students with ADHD who didn’t care what is going on. But I also didn’t want to take them out of class because they need movement. I stopped the class to get them turned around and use peer pressure. That is really the only way I know. The principal said to me that when they (students) were disrespectful, she stopped talking right then until they started listening and being respectful, and then continued the class. (Susan, Interview #6)

The way Susan adopted her principal’s suggestion to manage student behavior resulted in her spending significantly more classroom time on the Management (20.8% in her soccer and 18% in the dance), which was an example of her inefficient managerial practice and decontextualized strategy in her class setting.

The analysis of findings revealed a variation in teaching practices between the suburban and urban teachers in this study, but also discussed the variation in teaching practices among the urban teachers. Those exceptional examples among urban teachers
provide alignment with the cases of urban physical education teachers in Henninger’s (2007) study who responded differently to the work condition of similar urban schools. How the urban teachers perceived and responded to their workplace conditions, which were identified as negative factors to teaching practices, distinguished them into two groups of the urban teachers in her study: lifers and troupers. Although the lifers facilitate student learning by reflecting their contextual environment, the troupers discuss their limited power of teaching against their contextual environment (Henninger, 2007). The exceptional cases in this study, Elis and Amie who were aware of their work conditions (limited facility) and student needs (a lack of social skills), are more similar to the lifers. They even demonstrated better teaching practices than Susan, who is a kind of trouper and taught Profile B units in this study with limited reflection on what her students needed. These analyses support the fact that contextual issues influence quality of instruction (Goodlad, Soder, & Sirotnik, 1990; Griffin, 1985) but also can argue that constant changes in the given context of urban schools can be occurred through teachers’ ability.

Conclusion

The analysis of findings from the ALT-PE and CLASS data guided distinguishing profiles of teaching practices between the Profile A and Profile B among 12 units taught by six teachers in this study. Teachers who taught the Profile A units tended to score high in both the Classroom Management and Student Outcome domains in the CLASS and tended to meet effective Management time (<10%) in the ALT-PE. All instructional units (in six of the 12 units) taught by suburban teachers and Elis’s basketball unit were
categorized as the Profile A (a total of seven units). In contrast, teaching practices within the Profile B were characterized by a low range of scores in three domains in the CLASS (e.g., Emotional Support, Classroom Management, and Instructional Support). They were also characterized by relatively high Management time along with an exceeded amount of time spent in the Management and Transition (37.7%-38.1%) than a typical physical education class (20-25%) in the ALT-PE. The Profile B included Susan’s dance and soccer units.

The ALT-PE has been validated and utilized as a strong proxy measure for student achievement and teaching effectiveness in physical education (Siedentop, 2002; Silverman, 1985; Silverman, Devillier, & Ramirez, 1991). Although this study initially attempted to explore profiles associated with the Ma category, little relationship was identified between the Ma category and other variables in the ALT-PE and CLASS, which led a limited discussion regarding effectiveness of each group of teaching practices in this study. This finding raised several issues related to the CLASS instrument which was developed to “assess classroom quality” (Pianta, La Paro, & Hamre, 2005, p 1.) and which had never been used in the field of physical education. According to the literature of CLASS, high association was identified between the Emotional and Instructional domains (Pianta et al., 2005); furthermore, high scores in those domains were positively related to student achievement scores (Hamre & Pianta, 2005). However, analysis of this study revealed high association between Classroom Management and Student Outcome domains. In regard to the relationship with variables of the ALT-PE which was pervasively utilized as a way of assessing teaching effectiveness, high association was
identified between those of two domains (Classroom Management and Student Outcome) in the CLASS and Management category in the ALT-PE rather than the Ma category that was considered as an indicator of student learning in the physical education field. It may be assumed that limited association between Emotional and Instructional domains in the CLASS in this study was related to a lack of association with the Ma category in the ALT-PE. Although CLASS have been validated across subject areas, including physical education, and adopted as a proxy measure of student learning in general education, the analysis of findings in this study also reflected a lack of feasibility of the CLASS in physical education.

In the case of the Profile A, choice of teaching practices was primarily dependent upon concerns for students and for time management issues within the given context. In addition, teachers were engaged in several types of learning activities, such as independent learning (e.g., book, Internet, past experience) and community learning (e.g., convention, workshop, colleagues), to learn and implement new and appropriate teaching practices into their classes. Their learning featured on-going activities across their teaching careers through integrating reflection process into their learning and teaching. These analysis of findings from teachers who taught Profile A units provided evidence of their participation in a situated context, which Lave and Wenger (1991) defined “as a way of learning – of both absorbing and being absorbed in- the ‘culture of practice’” (p. 95) within a situated learning theory. The teachers within the Profile A seemed to possess, develop, and utilize different knowledge, skills, and dispositions to conduct teaching practices that responded to the context they confronted by their on-going participation in
learning activities. For example, Bob collected resources (e.g., book, Internet, workshop resources) to develop the knowledge, skills and dispositions necessary to teach his Tinikling dance unit. He demonstrated his way of teaching (e.g., using stretch bands and handouts, incorporating creative dance elements into the Tinikling dance patterns) that reflected on student learning and response during the unit. To adopt an activity that allowed students to have fun and improve their skills, Kevin utilized the butterfly drill in his floor hockey unit, an idea he got from watching his son’s ice hockey practice. He modified the drill to emphasize several skills that needed to be covered and practiced.

Although Profile A teachers continued “relations with ongoing practice in other ways” (Lave & Wenger, 1991, p. 96), it may be true that the teachers shared membership in the community of practice that might be considered as a macro level of ‘professional learning community’ in physical education (Tozer & Horsley, 2006). Lave and Wenger (1991) discussed that community does not imply certain “socially visible boundaries” rather, it implies “participation in an activity system about which participants share understandings concerning what they are doing and what that means in their lives and for their communities” (p. 98). Teachers within the Profile A tended to acquire their knowledge, skills, and dispositions through access to the same types of resources (independent and community of learning resources) and to adopt these resources with the same purposes (e.g., concerns for students and time management) and process (e.g., reflection process) into their classes. In addition, they showed a process of becoming full participants in their context as they became involved in a mastery work, such as working
as a supervisor of student teachers, engaging in collaboration with university faculty, and leading district standards revision groups.

The Profile B teacher, Susan, tended to adopt the book that was introduced to her at her college 20 years ago to help her in making her decisions about what to teach and how to teach in each grade. Her choices and the acquisition of her teaching practices initiated and occurred from the book with limited reflection process into where she situated. As a result, Susan’s teaching practices seemed more decontextualized rather than contextualized. It was also revealed that her participation in relation to students and activities in the situated context seemed to be non-existent. These findings provided evidence of an example in a failure to create and adopt a teacher’s knowledgeable skills that developed through the process of participation in the relations with people (students) in situated community (Lave & Wenger, 1991).

All teachers in this study worked in contextually different school environments. Variations in the teaching practices were identified between urban and suburban teachers in terms of three aspects. Units taught by suburban teachers were characterized by 1) highest allocation time on the Motor-Engaged subdivision at the context level in the ALT-PE, 2) teaching profile (Profile A), and 3) effective Management time in the ALT-PE. These patterns of teaching practices were unlikely identified in the units taught by urban teachers, but several cases from Elis and Amie demonstrated how to adopt teaching practices responding to the given context (e.g., a lack of social skills of their students, limited facilities and equipments).
Despite contextual barriers, suburban teachers’ patterns of teaching practices were partially recognized from Elis and Amie’s units, such as the highest allocation time on the Subject Matter Motor subdivision (Elis’s dance unit), a case of the Profile A (Elis’s basketball), and effective Managerial practices (Amie’s dance unit). In contrast, analysis of Susan’s case as another urban teacher provided evidence of the weakest teaching practices in this study with limited response and reflection to the given context. These variations among the urban teachers support the findings of Henninger’s (2007) study, in which veteran urban physical education teachers were categorized as either lifers or troupers dependent upon their perceptions and responses to their organizational context (e.g., general workplace, students, and administration) related to their teaching practices. In this study, Elis and Amie showed similar characteristics of teaching practices to the lifer in urban schools. They facilitated student learning through reflecting on their contextual environment. Susan’s stay, by contrast, was aligned with the case of troupers who discussed their limited power on their teaching against their contextual environment (Henninger, 2007). Thus, variations in teaching practices were identified between urban and suburban teachers, but also among urban teachers dependent upon how they responded to the given context.
Figure 5.2: Proposed process of learning to teach framed by situated learning theory (Lave & Wenger, 1991)

Figure 5.2 presents a conclusive process of learning to teach based on the findings of this study. Teacher learning occurred through a process of integrating knowledge, skills, and dispositions that were acquired from diverse learning resources within their given context and through participation in and reflection on multiple levels of community settings. The teachers’ learning-to-teach process to adopt their teaching practices grounded in the given context was found from the analysis of findings of the Profile A, Elis, and Amie. The findings provided evidence that teacher learning occurred in the
process of engagement and interaction in socio-cultural practice in situated social settings (Lave & Wenger, 1991; Wenger, 1998). In other words, those teachers in this study who developed teaching practices through engaging, reflecting, and responding to the given context seemed aligned with the definition of ‘legitimate peripheral participation’ in the community of practice (Lave & Wenger, 1991) as “the process of becoming a full participant in a socio-cultural practice” (p. 29).

The analysis of Profile B units teacher, Susan, who utilized college learning which occurred 20 years ago, and a book which was also introduced to her 20 years ago, regardless of her contextual environment, provided an example of failure to be engaged in the socio-cultural practices of where she were situated and to produce teaching and learning grounded in the given context. She described a lack of opportunity to be engaged in a community learning of resources (e.g., district level of PD workshop) in her context with limited district support. Susan’s description might be partially supportive in the physical education area. In general, physical education teachers were provided limited PD opportunities (Neville & Robinson, 2003) and even the PD experiences were characterized by a lack of coherence and progression related to the teachers’ instruction in schools (Armour & Yelling, 2004).

However, Ward and Sullivan’s (2006) monograph led to contradictory argument regarding Susan’s case with the evidence of two PEP grants of PD opportunities that were provided to all Columbus Public Schools district teachers, including Susan. By engaging in the PEP grants, the teachers experienced changes in their beliefs and teaching practices (Deglau & O’Sullivan, 2006; Deglau, Ward, O’Sullivan, & Bush, 2006; Ko,
Wallhead, & Ward, 2006). It is possible that Susan may not have been aware of or did not choose to participate in the given opportunities. Given this fact, it could be argued that high quality, top-down PD is necessary but may not be sufficient without “great personal costs” (Flores, 2007, p. 401) to the teacher. A teacher’s bottom-line effort may require developing and integrating knowledge, skills, and dispositions responding to the given context.

Although contextual factors within urban schools were identified as a barrier in teaching (Griffin, 1985; Henninger, 2007), this study revealed that how the teachers perceived and responded to those issues influenced their teaching practices based on the analysis of the findings from the teachers in the same urban district, such as Elis and Amie vs. Susan. In contrast to Elis and Amie, the analysis of Susan, who engaged in limited learning opportunity and engaged in limited reflection practices across her 20-year teaching career provided the evidence of limited reflection on the context along with trivial effort to be involved in the given opportunities and community. These findings supported the statement “Experience is not a sufficient condition for effectiveness in teaching, but familiarity of instructional settings is necessary for effective teaching behaviors to be employed appropriately” (Griffey & Housner, 1991, p. 202). Given the analysis, this study agrees with emphasizes that how and what teachers teach depends on the teacher quality issue that, furthermore, is associated with the quality of schools (Feiman-Nemser, 2001). Therefore, accountability for teacher quality is critical to providing effective physical education instruction in schools today.
Recommendation for Teacher Educators/ Teachers

This study explored in-service teaching practices and learning to teach within contextually different environments. Although this study focused on one stage of teachers across teaching career, that is in-service teachers, the findings of the continued learning by teachers in this study supported “the need for a continuum of serious and sustained professional learning opportunities” (Feiman-Nemser, 2001, p. 1049). Recommendations of how to facilitate teachers learning to teach, therefore, are provided for each of the teaching stages mainly focusing on the primary findings of this study: contextualized teaching practices, continuing professional development, and reflection.

A preservice preparation program is the initial stage that begins development and improvement of skills, knowledge, and disposition of teacher candidates from pedagogical perspective (Feiman-Nemser, 2001). Adoption of teaching practices responding to the given context among a majority of teachers in this study highlights the need of diverse and in-depth field experiences that require connecting and implementing what the teacher candidate learned on the subject matter into where they are situated. Learning about the students’ backgrounds and being embedded in the school culture during the field experiences may provide the teacher candidate with an opportunity to be familiar with contextually different school environments. Furthermore, the process of integrating contextual knowledge into teaching and learning must be reinforced through the reflection process, which was a vehicle to adaptation in the teaching practices grounded in the given context in this study. The reflection process of what and how to reflect and change should be guided and practiced during the teacher preparation program.
as to meet the NASPE/NCATE standards (1995, 2004) that state “physical education teachers are reflective practitioners who evaluate the effects of their action” (Standard 8). Providing opportunities for the teacher candidate to have conversations with colleagues and to talk about the teaching practices may encourage their on-going professional learning during the teacher preparation programs (Feiman-Nemser, 2001).

Beginning teachers in the induction stage, the transition period from the preparation program to the continuing professional development (Huling-Austin, Odell, Ishler, Kay, & Edelfelt, 1989), need to be engaged in the interaction with socio-cultural practices, as being an active participant in the setting is to gain knowledge about the given context. The reflection process may allow teachers to develop and implement appropriate teaching practices where they are situated. Engaging in the induction program or strong mentoring program and engaging in conversation with other colleagues can motivate on-going professional learning and improvement of teaching (Feiman-Nemser, 2001).

The findings from the teachers in this study who showed continuing engagement in learning opportunities support the significant role of teachers’ continuing efforts and interest in learning to teach throughout their teaching career. Teachers in this study attempted to learn new practices and to adopt teaching practices by responding to their situated context and by reflecting to meet student needs. These findings highlight teachers’ efforts for the improvement of their teaching and learning. Building a colleagueship with like-minded colleagues may help teachers encourage and share their teaching knowledge (Butler et al., 2004). Moreover, partnership and collaboration
between teachers and teacher educators at the university level may provide a challenge for the teachers and provide an opportunity for the teachers to build their knowledge of teaching. For example, teacher educators can invite teachers to work with teacher candidates as the role model to guide the candidates’ future career. During this time, learning will occur between the teachers and the teachers’ leader. These recommendations may be appropriate ways to encourage continuing learning and ways to teach the improvement of teacher quality in different stage of teaching and teaching career.

Research Recommendation

This study adopted a mixed methodology to collect diverse data to identify teaching practices and to understand teachers’ learning to teach in the contextually different environment. The methodology allowed strong insight into the process of how teachers learn to teach.

1. The focus of this study was limited to a small group of in-service elementary physical educators from urban and suburban districts. To broaden the boundaries and to make the findings generalizable, further research would require focus on cross-case analysis across groups within different contextual environments, across teaching career stages such as teacher candidates, beginning teachers and in-service teachers, and across teaching levels (e.g., elementary and secondary). This analysis would provide a better understanding of the general patterns of teaching practices and of learning to teach within diverse settings.
2. This study chose to limit targeting dance and an invasion unit to identify teaching practices and associated learning to teach process. The findings of this study presented no variation in teaching practices between the units for any teacher. In addition, no consistent pattern was recognized within the same unit across the teachers. Further research may require focusing on different activity units other than those focused on in this study, but it would require the same unit across the targeting groups in order to validate or invalidate the claim of this study and/or to identify general patterns of teaching practices and of learning to teach associated with particular activity unit.

3. This project is the first research that utilizes the CLASS instrument within physical education. In contrast to the ALT-PE, which was developed from a time-based quantitative approach, the CLASS instrument was developed to assess classroom quality from a qualitative approach. The association between Emotional and Instructional Support domains in relation to student achievement scores has been revealed and supported (Hamre & Pianta, 2005). However, this study found the association between Classroom Management and Student Outcome domains in the process of defining teaching practices of the Profile A. It can be argued that the inconsistent association among the domains might result from the descriptive approach of analysis with small groups of participants in this study instead of statistical manner of analysis with large groups as with previous research. However, this study argues for the feasibility of the instructional domain in the CLASS within physical education. The instructional domain assessing the “use of instructional
discussions and activities to promote students’ higher order thinking skills and
cognition in contrast to a focus on rote instruction” (Pianta, La Paro, & Hamre, 2006,
p.16) seems to have a difference in physical education, where direct instruction
consists of task-oriented, teacher-controlled, and explicit instruction and immediate
feedback (Rink, 1996) has been supported as an effective instruction (Blakemore et
al., 1992; Boyce, 1992; Harrison et al. 1999; Silverman, 1991). Therefore, further
research with a larger sample of teachers is required for validation of the claim in the
previous research or of the claim in this study.

4. Mixed methodology allowed this study to provide both qualitative and quantitative
data of findings to answer two paradigms of research questions. Since this study
focused on a small group of teachers, the quantitative portion of data collection and
analysis relied on numerical methods. Future research may require inviting a large
number of participants for a quantitative research and also using a statistical approach
to incorporate general and specific findings.
REFERENCES


McCullick, B., & Coulon, S. (1998). The effects of varying supervisory conferences on preservice teachers’ specificity, pedagogical focus and implementation of written


National Board for Professional Teaching Standards (NBPTS). *Toward high and rigorous standards for the teaching profession.* Detroit, MI: Author.


APPENDIX A

PARTICIPANT INFORMATION FORM
## Participant Information Form

**Date:**

Please provide the following information

### Personal Information

<table>
<thead>
<tr>
<th>Name:</th>
<th>Age:</th>
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Gender: M  F

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<table>
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<tr>
<th>Education Completed:</th>
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<tbody>
<tr>
<td>( ) Bachelor’s Degree</td>
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<tr>
<td>( ) Others:</td>
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<table>
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<tr>
<th>Years of Teaching in PE:</th>
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<tbody>
<tr>
<td>in the current School District:</td>
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<tr>
<td>at the current School:</td>
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<tr>
<th>Professional Experiences: Please list name, provider/sponsor (e.g., school level, district level, state level)</th>
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<tbody>
<tr>
<td>- Workshop:</td>
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<tr>
<td>- Conference:</td>
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<tr>
<td>- Others:</td>
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</table>

### School Information

<table>
<thead>
<tr>
<th>Which School/Grades are you currently teaching?</th>
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<tbody>
<tr>
<td>a) Name of School and School District:</td>
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<tr>
<td>b) Grade Level:</td>
</tr>
</tbody>
</table>

Could you explain your gym and available facilities for your PE program?

Could you describe your principal’s support for your PE program?

Could you explain community settings of your school (e.g., socio-economic level, location in city, community physical activity resources, parent involvement, etc)?

Could you describe your school district’s support for PE program and PE teachers?
APPENDIX B

ACADEMIC LEARNING TIME-PHYSICAL EDUCATION (ALT-PE) INSTRUMENT
### ALT-PE CODING SHEET

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| [Image] | [Image] | [Image] | [Image] | [Image] | [Image] | [Image] | [Image] | [Image] | [Image] | [Image] | [Image] | [Image] | [Image] | [Image] | [Image] | [Image] | [Image] | [Image] | [Image] | [Image] | [Image] | [Image] | [Image] | [Image] | [Image] |

### General Content
- Transition (T)
- Management (M)
- Break (B)
- Warm Up (WU)

### SM Knowledge
- Techniques (TB)
- Strategy (ST)
- Rules (R)
- Social Behavior (SB)
- Background (BK)

### SM Motor
- Skill Practice (P)
- Scrimmage/Rehearsal (S)
- Game (G)
- Fitness (F)

### Not Motor Engaged
- interim (I)
- Waiting (W)
- Off-task (OT)
- On-task (On)

### Motor Engaged
- Motor appropriate (Ma)
- Motor inappropriate (Mi)
- Supporting (Ms)

### Learner Involvement Level

### Context Level
APPENDIX C

CLASSROOM ASSESSMENT SCORING SYSTEM (CLASS) INSTRUMENT
Classroom Quality

Emotional Support
- Positive Climate
- Negative Climate
- Teacher Sensitivity
- Regard for Student Perspectives

Classroom Organization
- Behavior Management
- Productivity
- Instructional Learning Formats

Instructional Support
- Concept Development
- Quality of Feedback
- Language Modeling

Student Outcomes
- Student Engagement
## EMOTIONAL SUPPORT

### Positive Climate
Positive Climate reflects the overall emotional tone of the classroom and the connection between teachers and students. The warmth of the teacher's interactions with students and the teacher's display of enjoyment and respect of students during instruction as well as social conversations are included in this rating. Interactions among peers should be considered in this rating.

### Negative Climate
Negative Climate reflects the overall level of expressed negativity in the classroom. Teacher negativity (e.g., anger, sarcasm, irritability) as well as peer negativity (arguing, aggression, victimization, bullying) should be considered in this rating. The quality, severity, and intensity of expressed negativity are important.

### Teacher Sensitivity
Teacher Sensitivity encompasses the teacher's responsivity to students' needs and awareness of students' level of academic and emotional functioning. The extent to which the teacher is available as a secure base (allowing students to actively explore and learn and being there to provide comfort, reassurance, and encouragement) should be included in this rating.

### Regard for Student Perspectives
Regard for Student Perspectives captures the degree to which the teacher's interactions with students and classroom activities place an emphasis on students' interests, motivations, and points of view. The teacher's flexibility within activities and ability to demonstrate respect for students' autonomy to participate in and initiate activities should be considered under this rating.
### Behavior Management

Behavior Management encompasses the teacher’s ability to use effective methods to prevent and redirect misbehavior. Included in this rating is the extent to which clear expectations for students’ behavior are evident. The amount of instructional time taken up by behavior management issues should be considered in this rating.

### Productivity

Productivity considers how well the teacher manages instructional time and routines so that students have the opportunity to learn. Measures the degree to which time is effectively managed and down time is minimized for students; it is not about the quality of instruction or student engagement.

### Instructional Learning Formats

Instructional Learning Formats focuses on what the teacher does either during the lesson or in providing activities, centers, and materials to maximize students’ engagement and ability to learn. The manner in which the teacher facilitates activities so that students have opportunities to experience, perceive, explore, and utilize materials should be considered. Considering students’ engagement is important for this rating.
# INSTRUCTIONAL SUPPORT

## Concept Development
Concept Development measures the teachers' use of instructional discussions and activities to promote students' higher order thinking skills and cognition in contrast to a focus on rote instruction.

## Quality of Feedback
Quality of Feedback assesses the degree to which the teacher's provision of feedback is focused on expanding learning and understanding (formative evaluation), not correctness or the end product (summative evaluation).

## Language Modeling
Language Modeling captures the quality and amount of teachers' use of language-stimulation and language-facilitation techniques during individual, small-group, and large-group interactions with students. Components of high-quality language modeling include self and parallel talk, open-ended questions, repetition, expansion/extension, and use of advanced language.

# STUDENT OUTCOME

## Student Engagement
This dimension is intended to capture the degree to which all students in the class are focused and participating in the learning activity presented or facilitated by the teacher. The difference between passive engagement and active engagement is of note in this rating.
**CLASS Coding Sheet**

**Teacher:** ___________________  **Unit:** ___________________

# of Lesson: ___________  **Session:** ________ **observer:** ______________________

| Positive Climate: Relationships, Positive affect, Respect, Positive peer interactions | 1 2 3 4 5 6 7 |
| Negative Climate: Negative affect, Punitve control, Sarcasm/disrespect, Negativity not connected events, Negativity escalates, Severe negativity | 1 2 3 4 5 6 7 |
| Teacher Sensitivity: Responsive, Notices when students need assistance, Addresses problems, Students seek support, Student comfort | 1 2 3 4 5 6 7 |
| Regard for Student Perspectives: Flexibility and student focus, Support of autonomy, Student expression, Student responsibility, Peer interaction encourage, Restriction of movement | 1 2 3 4 5 6 7 |
| Behavior Management: Proactive, Monitoring, Redirecting misbehavior, Clear behavioral expectations, Loss of time, Effective Praise, Student misbehavior | 1 2 3 4 5 6 7 |
| Productivity: Provision of activities, Routines, Transitions, Preparation, Disruptions, Managerial tasks | 1 2 3 4 5 6 7 |
| Instructional Learning Formats: Utilization of materials, Student engagement, Clarity of learning objectives, Teacher facilitation, Modalities | 1 2 3 4 5 6 7 |
| Concept Development: Higher order thinking & cognition vs. rote learning, Analysis of reasoning, Hypothesis testing, Integration w/ previous concept, Connections to the real world | 1 2 3 4 5 6 7 |
| Quality of Feedback: Process feedback, Feedback loops, Specific feedback, Providing hints | 1 2 3 4 5 6 7 |
| Students’ Engagement: Active vs passive engagement, Sustained engagement | 1 2 3 4 5 6 7 |
Research Protocol: Interview Questions

Interview with Teachers Before Each Unit

This semi-structured interview is conducted in order to collect information on what the teacher plans to teach, strategies he or she plans to use during instruction, and why the content and strategies were chosen for this particular unit of instruction.

Questions to be asked:

1) What specifically do you hope students will learn during this unit?
   • How will you learn if you were successful?

2) What specific content do you plan to teach?

3) What specific strategies do you plan to use to present this content to the students?

4) On a scale of 1-10, how would you rate your expertise in this content area?
Interview with Teachers After Each Unit

Questions to be asked:

1) How do you prepare your students for learning?

2) What teaching practices did you use in the lesson?
   • Prompts will be gathered from class observation of practices.

3) Why did you choose to use these strategies?
   • Did you change any of your planned teaching practices because of student problems or successes?

4) How did you learn to use these strategies?
Interview with Teachers Final Two-Unit

This semi-structured interview is conducted in order to compare teaching practices used on two different units of instruction and to understand why teachers chose specific practices. After two units, a final interview with teachers will be conducted.

Questions to be asked:

1) When comparing the same units, what teaching practices were the same and which ones differed due to the unit itself?

2) Did you have anything that happened to influence your teaching practices during this time?

3) Do you think your teaching practices within two units related to your competence level of teaching those units?