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Three Studies Of Service-Learning As An Approach To Movement Integration In Elementary Classrooms

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THREE STUDIES OF SERVICE-LEARNING AS AN APPROACH TO MOVEMENT INTEGRATION IN ELEMENTARY CLASSROOMS

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ABSTRACT

This dissertation consists of three studies that examine service-learning (SL) as an approach to incorporating movement integration (MI) in elementary classrooms as part of a comprehensive school physical activity program (CSPAP). All three studies attempt to advance the knowledge base about using partnership approaches to supporting school-based physical activity promotion.

The purpose of study one was to examine the perceptions of preservice classroom teachers (PCTs), classroom teachers (CTs), and course instructors who participated in a constructivist-guided university course with a focus on MI and a SL component. Focus groups with 172 PCTs and individual interviews with 7 CTs and 4 course instructors were thematically analyzed using constant comparison techniques to identify perceived successes and challenges of the course. Findings centered on three themes, including real-world context (gaining entry but losing access, and placements and scheduling), learning embedded in a social context (peer support, reciprocal learning, real world outcomes, and social interactions), and scaffolding (teacher as facilitator and support structure).

The purpose of study 2 was to examine the experiences of PCTs, CTs, course instructors, and elementary students who were involved in a distance delivery version of the course described in Study 1. The distance delivery version of the course was designed using constructivist-guided SL and in accordance with recommended best practices for distance education. Using a qualitative single case study design, interviews, observations,

and artifacts (e.g., PCTs' reflections and academic work) were thematically analyzed. Findings indicated three themes, including student-centered approach (teacher as facilitator), benefit/importance of PA (future implementer, enjoyment of the real world, and I don't like to sit), and connect and reflect (sharing new ideas and communication).

The purpose of study 3 was to conduct a systematic review to identify facilitators and barriers to (a) using MI and (b) using university-based SL in elementary school classrooms. Four online databases (Educational Resources Information Center, Google Scholar, PsycINFO, and PubMed) served as data sources for the study. Following the PRISMA guidelines, relevant published research on MI and SL, respectively, was identified using two separate searches and screened for inclusion in qualitative syntheses. Content analyses of the included articles (31 for MI and 5 for SL) were used to identify 26 facilitators and 15 barriers associated with MI and 22 facilitators and 24 barriers associated with SL. Data analysis was guided by Emmons' (2000) social ecological model and involved categorizing facilitators and barriers for MI and SL based on commonalities and consistencies. The categories for MI included institutional factors (e.g., resources, administrative support, and monitoring) and intrapersonal factors (e.g., teacher confidence, and ease of implementation). The categories for SL included intrapersonal factors (e.g., shared decision making, and previous experience) and institutional factors (e.g., lack of training, management issues, and implementation challenges).

Overall, the findings from this dissertation provide evidence to support efforts aligned with using university SL to aid CTs in using MI.

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CHAPTER 1

INTRODUCTION

School-aged youth should be accumulating at least 60 minutes of moderate-to-vigorous physical activity (PA) each day (U.S. Department of Health and Human Services [USDHHS], 2008). However, many children and adolescents are not meeting this guideline (Troiano, et al., 2008). Schools offer an existing infrastructure for virtually all youth to engage in PA (Institute of Medicine [IOM], 2013; Pate et al., 2006). The IOM (2013) recommends a whole-school approach to PA promotion that affords PA engagement in multiple contexts before, during, and after school. The comprehensive school physical activity program (CSPAP) model is a leading example of a whole-school approach to PA promotion (Center for Disease Control [CDC], 2013). The model consists of five components: (a) physical education, (b) PA during school, (c) PA before and after school, (d) staff involvement, and (e) family and community engagement.

This dissertation focuses on the second component of the CSPAP model (PA during school) in an attempt to better understand the strategies that have been recommended to increase children's PA during regular classroom time, referred to as movement integration (MI). MI is defined as incorporating PA, at any level of intensity, into general education classrooms during normal classroom time (Webster, Russ, Vazou, Goh, & Erwin, 2015). Classroom teachers (CT) employ a range of MI strategies (Russ, et al., in press), such as providing PA breaks, infusing PA into academic lessons, and

increasing PA during routine transitions. In school-based research, MI has been shown to increase children's PA (Goh et al., 2014), as well as enhance their classroom performance (Mahar et al., 2006) and academic achievement (Adams-Blair & Oliver, 2011).

Despite the benefits of MI, classroom teachers (CTs) have reported barriers to routinely using it due to a number of factors, including prior commitments to other professional responsibilities (e.g., academic testing, extracurricular duties, and staff meetings). Webster et al. (2015) recommend three complimentary strategies for helping school professionals to implement CSPAPs: (a) community-based participatory research, (b) communities of practice, and (c) service learning (SL). These three strategies attempt to bridge the internal (within school) and external (beyond school) resources through school-community partnerships with the intent of increasing the capacity of schools to provide daily PA opportunities. Yet, while these strategies have been effective in a variety of health promotion programs, there has been little research on their application to MI or other aspects of a CSPAP.

The specific focus of this dissertation is on SL provided by a university to enhance MI in elementary school classrooms. SL is an experiential teaching and learning strategy that combines academic instruction with meaningful community service and guided reflection activities (Cashman & Seifer, 2008). SL falls under the umbrella of experiential education (Carver, 1997), which is heavily influenced by the work of John Dewey. In *Experience and Education*, Dewey presents the principle of interaction and the principle of continuity. The principle of interaction states that students experience results from an interaction with their environment, and the principle of continuity states that each experience has meaning and affects future experiences (Carver, 1997; Dewey, 1938).

Cashman and Seifer (2008) explain that SL is integrated into coursework and co-occurs with it, where the emphases on service and student learning are equal. SL must have an academic context and be designed so that the service and the learning enhance each other: SL programs are distinguished from other approaches to experiential learning by their intention to equally benefit the provider and the recipient of the service as well as ensure equal focus on both the service being provided and the learning that is occurring (Furco, 1996, p.5). Moreover, SL is based on a reciprocal teaching model, where both the teacher and the student benefit from the SL (Furco, 1996).

This dissertation uses SL as an overarching theoretical framework. According to Billig and Eyler (2003), "service-learning draws from multiple theories because it is centered on individuals, relationships between individuals, and relationships between individuals and structures." (p. 259). Some of these theories include: constructivism, environmental and ecological education, cognitive psychology, and problem-based learning (Billig & Eyler, 2003). Study 1 and Study 2 of this dissertation will use constructivist learning pedagogy as a theoretical framework that explores how the process of SL intersects with various stakeholders' (i.e., preservice teachers, inservice teachers, SL instructors) construction of knowledge as active participants situated in the context of MI. Constructivist learning places the student as the central focus in the learning process (Bruner, 1960; Dewey, 1916; Piaget, 1970). Constructivists believe that individuals create new understandings based on an interaction between what they already know and believe and knowledge from which they come into contact (Resnick, 1989). Psychological constructivism suggests that learners actively construct meaning around phenomena and depend on the learner's background knowledge (Richardson, 2003). Key

components of constructivist classrooms are (a) student-centered, (b) use a process approach, (c) interactive, (d) democratic (e) power and control are shared, and (f) involve negotiation (Gray, 1997). Constructivist-based teaching approaches attempt to create links between what is taught and what is learned by providing opportunities for students to be immersed in experiences that engage in action, meaning-making inquiry, interaction, and personal reflection (Beck & Kosnik, 2006; Gray, 1997).

Three studies are reported in this dissertation. Study 1 examines preservice classroom teachers' (PCT), classroom teachers' (CT), and course instructors' perceptions of SL to implement MI as part of a constructivist-guided face-to-face university course focused on MI. Study 2 extends Study 1 by examining a new distance delivery version of the same course from the perspective of PCTs, CTs, the course instructor, and elementary students. Study 3 examines the facilitators and barriers to both MI and SL using a systemic review approach and a social-ecological perspective. The specific purposes and research questions for each study are outlined below.

Study Purposes and Research Questions

Study 1. The purpose of Study 1 will be to examine stakeholders' (PCTs', CTs', and course instructors') perceived successes and challenges of constructivist guided, SL-based MI in the context of a university course for PCTs. The specific research questions were:

1. What successes do stakeholders perceive with respect to constructivist-guided SL-based MI?

2. What challenges do stakeholders perceive with respect to constructivist-guided SL-based MI?

Study 2. The purpose of this study, therefore, was to examine stakeholders' (i.e., PCTs, the course instructor, elementary classroom teachers, and elementary students) perceptions and experiences with respect to participating in an asynchronous constructivist-oriented distance education course with a SL component. The specific research questions were:

1. What impact did the SL experiences implementing MI have on the various stakeholders?

2. What elements of the constructivist-guided course design and the distance delivery platform facilitated or hindered the SL experiences?

Study 3. The purpose of this study was to conduct a systematic review of facilitators and barriers to elementary CTs' use of MI and university-based SL.

1. What factors enable or hinder elementary CTs' use of MI implementation?

2. What factors enable or hinder the elementary CTs' use of SL?

CHAPTER 2

LITERATURE REVIEW

The purpose of this chapter is to provide a comprehensive literature review that informs all three studies for this dissertation. The chapter is organized into the following sections: (a) whole-school approach to physical activity (PA) (b) classroom movement integration (MI) (c) experiential learning, (d) service-learning (SL), (e) distance education, and (e) theoretical frameworks.

Whole-school Approach to PA

Children benefit from PA (CDC, 2013; IOM, 2013). Increasing PA can reduce the risk factors for diseases such as diabetes and cardiovascular disease, and reduce the risk of obesity (CDC, 2013; USDHHS, 2008). Turner, Johnson, Slater, and Chaloupka (2014) indicate that children spend as much as 90% of their day in sedentary time. Therefore, reducing sedentary time is as important to reducing health risks as increasing PA (IOM, 2013).

The US Department of Health and Human Services (USDHHS) recommends that children participate in 60 minutes of mostly moderate-to-vigorous PA (MVPA) daily (USDHHS, 2008). However, many children and adolescents are not meeting this guideline (Troiano, et al., 2008). Schools have been identified as an important setting to implement health-enhancing programs given they offer an existing infrastructure for this

purpose, have access to a large number of children in a centralized location, and can provide multiple opportunities for all children to participate in PA each day (Pate et al., 2006). The Institute of Medicine (IOM) recommends that schools provide 30 minutes of the recommended 60 minutes of daily PA during school hours (IOM, 2013). Currently, only two states (Oregon and District of Columbia) meet the national recommendations for a minimum allocated curriculum time for physical education minutes per week at both elementary and middle schools (SHAPE, 2016). National recommendations therefore call for a whole school approach to PA promotion (IOM, 2013).

A leading example of a whole school approach is the comprehensive school PA program (CSPAP) model (CDC, 2013). The model has five components: (a) physical education, (b) PA during school, (c) PA before and after school, (d) staff involvement, and (e) family and community engagement. Physical education is central to providing children the knowledge, values, and skills needed to pursue a lifetime of PA. PA during school consists of providing PA opportunities throughout the school day such as recess, lunchtime activities, and classroom-based PA. Before and after school PA encompasses opportunities such as activity clubs, intramural sports, and active transportation programs. Family and community engagement takes place outside of the school through home- and community-based opportunities.

Classroom MI

In the elementary school setting, the support of generalist classroom teachers (CT) is vital to helping children accumulate 30 minutes of PA during school hours each day. Movement integration (MI) is a strategy where CTs integrate PA into regular classroom

time during routine transitions, as part of academic lessons, or by providing PA breaks (Parks, Solomon, & Lee, 2007; Webster, Russ, Vazou, Goh, & Erwin, 2015). MI can take many forms (Kohl & Cook, 2013). Russ et al., (2015) developed the System for Observing Student Movement in Academic Routines and Transitions (SOSMART) for observing and categorizing student movement in the academic classroom. A few of the most frequently occurring examples of student movement were as a result of (a) non-teacher directed transitions (e.g., incidental movements occurred) (b) teacher-directed transitions, (c) non-academic teacher-directed movement breaks, (d) academic-infused teacher-directed movement breaks, and (e) technology-led teacher-infused transitions or movement breaks (e.g., Go Noodle or YouTube videos) (Russ, et al., 2015).

The goal of MI is to increase PA and/or reduce sedentary time in classrooms. MI has been shown to increase MVPA (Bartholomew et al., 2011; Beighle et al., 2010; Erwin et al., 2011; Goh et al., 2014; Mahar et al., 2006), decrease sedentary time (Mantis, Vazou, Saint-Maurice, & Welk, 2014; Salmon et al., 2005), improve on-task behavior (Mahar et al., 2006; Mahar, 2011), enhance cognitive function (Donnelly & Lambourne, 2011; Howie, Newman-Norlund, & Pate, 2014), increase standardized test scores (Vazou & Smiley-Oyen, 2014), increase enjoyment (Donnelly et al., 2009; Howie et al., 2014; Vazou et al., 2012) and increase perceived competence in the classroom (Vazou et al., 2012). Small bouts of MI (i.e., 10 minutes or less) in the classroom have been found to increase students' PA to moderate intensity levels (Stewart, Dennison, Kohl, & Doyle, 2004). Moreover, students' overall step-counts increased during the school day as a result of teacher incorporated MI activities (Erwin, Beighle, Morgan, & Noland, 2011).

Webster et al., (2015) broadly conceptualize different MI approaches. One approach is to use existing resource guides and/or pre-packaged programs. Examples include books such as *No Gym? No Problem* (Sutherland, 2006), *Promoting physical activity & health in the classroom* (Pangrazi, Beighle, & Pangrazi, 2009), and *Active education: Lessons for integrating physical activity with language arts, math, science and social studies* (Reed, 2009), and "ready to use" materials that are often used in school-based interventions, such as Take10! (Kibble et al., 2011), Energizers (Mahar et al., 2006) and Move-to-Improve (Dunn, Venturanza, Walsh, & Nonas, 2012). Another approach is to use partnerships between schools and external sites (e.g., universities) to provide enhanced support and leverage CTs' resources for MI. a partnership approaches such as community-based participatory research, communities of practice, and service learning. Examples include using community-based participatory research, communities of practice, and service learning (SL). Partnerships focus less on having teachers adopt pre-designed curricula or activities and more on helping teachers to integrate movement in ways that fit their preferences, needs, and unique classroom contexts.

Research has identified numerous variables associated with CTs' use of MI. For instance, the type of MI and its perceived outcomes appear to be important considerations for teachers. In one study, teachers preferred activity breaks with connections to academic content (McMullen, Kulinna, & Cothran, 2014). Additionally, the teachers used movement breaks as a reward for students' good behavior to increase control in the classroom. Teachers also favored activities that were easy to implement and led to student enjoyment. In another study, teachers who perceived a value in incorporating

activity for the benefit of overall student wellness are more likely to implement MI (Cothran, Kulinna, & Garn, 2010).

Teachers have also reported barriers to using MI. CTs reported limited use of MI due to the increased demand of standardized testing and accountability in schools (Parks, et al., 2007). Moreover, teachers were less likely to engage in MI when they perceived barriers time constraints related to having too many additional responsibilities (Cothran, et al., 2010). In other research, teachers expressed concerns that MI takes away from time dedicated to academic instruction (Goh et al., 2014) and can lead to difficulties maintaining classroom control (McMullen et al., 2014). Many teachers are not trained in incorporate MI strategies and are less likely to incorporate them in the classroom if they feel that it would lead to student misbehavior (McMullen et al., 2014).

At the preservice level, preservice classroom teachers (PCT) who had completed coursework related to PA promotion reported higher physical education teaching competence and recess/classroom competence than PCTs who had not taken such coursework (Webster, Monsma & Erwin, 2010). Webster et al. (2010) suggested "that educational experiences included in pre-service training might positively influence how PCTs view themselves in relation to PA activism" (p.372). Several studies seem to support this assertion. Webster (2011) found that PCT's had more favorable attitudes toward PA promotion and had higher perceived competence to promote PA during recess/classroom, extracurricular time, and physical education at the end of a one-semester university course than at the beginning. Webster, Erwin and Parks (2013) examined PCTs' efficacy beliefs about integrating movement in the academic classroom, willingness to integrate movement, and perceived barriers to MI. While efficacy beliefs

and willingness to integrate movement were not associated, perceived barriers was associated with willingness to integrate movement and the number of MI barriers PCTs perceived decreased from the beginning to the end of the course. Using a social-ecological framework, Goh et al. (2013) revealed that PCTs were concerned with barriers at the organizational (i.e., school) level, including lack of time, space constraints, classroom management, pressure from testing, and attitudes from colleagues and administrators toward MI.

Experiential Learning

Experiential learning is a term used to describe learning by students who are given the opportunity to acquire and apply knowledge and skills in an immediate and authentic setting (Cashman & Seifer, 2008). Education that is considered experiential learning integrates student experiences into the curriculum; experience involves any combination of senses, emotions, physical condition, and cognition (Carver, 1996). Theory and practice can be linked by experiential learning by placing students in situations where they directly participate in the event to be studied. Experiential learning differs from more traditional education by its process of actively engaging students in experiences that have both positive and negative outcomes (Cashman & Seifer, 2008). Carver (1996) cites four pedagogical principles that stand out as salient features of experiential education: (a) authenticity (i.e., relevant to the participants' lives), (b) active learning (i.e., physically and mentally engaged in the active process of learning), (c) drawing on student experience (i.e., participating and reflecting on what was experienced), and (d) providing mechanisms for connecting experience to future opportunity (i.e., skills useful for future endeavors).

Experiential learning places emphasis on the learning process rather than on behavioral outcomes and involves transactions between the person and the environment (Kolb, 2014). Kolb (2014) states that "learning is the process whereby knowledge is created through the transformation of experience (p.38)." The National Society for Experiential Education (NSEE) published the *Eight Principles of Good Practice for All Experiential Learning Activities* (1998). The eight principles include (a) intention, (b) preparedness and planning, (c) authenticity, (d) reflection, (e) orientation and training, (f) monitoring and continuous improvement, (g) assessment and evaluation, and (h) acknowledgement (NSEE, 1998). These were constructed with the idea that experience and learning are fundamental regardless of the experiential learning activity (NSEE, 1998).

SL

SL falls under the umbrella of experiential learning. There has been much discussion and some disagreement on the definition of SL, specifically when attempting to differentiate SL from other types of experiential learning (Billig, 2000). Furco (1996) distinguishes SL by its "intention to benefit equally the provider and the recipient" as well as its equal focus of "service and learning". SL offers a form of experiential learning that is unique due to its process of actively engaging students in real-world experiences (Cashman & Seifer, 2008). There is consensus that its major components include "active participation, thoughtfully organized experiences, focus on community needs and school/community coordination, academic curriculum integration, structured time for reflection, opportunities for application skills and knowledge, extended learning

opportunities, and development of a sense of caring for others" (Bhaerman, Cordell, & Gomez, 1988, p.4).

John Dewey (1938) provided the theoretical foundations for understanding quality instruction. Dewey specified four conditions that maximize the potential for inquiry-based learning to be instructive: (a) generate interest in the learner, (b) be intrinsically worthwhile to the learner, (c) present problems that awaken new curiosity and create demand for information, and (d) cover considerable timespan and be capable of fostering development over time (Giles & Eyler, 1994). Dewey's theory is a useful theory for SL research (Giles & Eyler, 1994). Dewey's principles provide a framework that link SL and constructivist thinking by providing a framework of creating a student-centered environment where the teacher acts as a facilitator for the construction of knowledge and provides the students with authentic learning opportunities in the form of SL. Three fundamental elements that should be included in any successful SL program, are referred to as the "3Rs" of SL: reality, reflection, and reciprocity (Godfrey, Illes, & Berry, 2005). SL is integrated into coursework and exists alongside it placing equal emphasis on student learning and meaningful community service (Cashman & Seifer, 2008). In order to achieve the necessary balance between learning and service, the partners negotiate the differences between their needs and their expectations (Cashman & Seifer, 2008).

Kaye (2010) presents four approaches to SL: (a) direct service where students' service directly affects and involves the recipients face-to-face (e.g., tutoring young children, working with elderly populations), (b) indirect service where service is provided not to an individual but to a community as a whole (e.g., donating food and supplies to relief efforts, or building park benches), (c) advocacy to create awareness of an issue

(e.g., writing letters to political parties), and (d) research to find, gather, and report information (e.g., developing surveys, and/or conducting interviews). In addition, SL has four interdependent stages: (a) preparation, (b) action, (c) reflection, and (d) demonstration (Kaye, 2010). In the preparation phase, the teacher and students work together to establish the stage for learning and action; this is where the students establish their need (e.g., increasing PA in the classroom). Action is a result of preparation, where the plan is carried out (e.g., implementing MI in the classroom). Reflection asks students to consider how their experiences, knowledge, and skills they have learned impacted their teaching and the lesson implemented. Demonstration is where students provide evidence of their accomplishments through their involvement in SL. A recurring theme in all forms of SL is the use of reflection.

Waterman (1997) describes myriad forms that SL can take with populations in which it has been implemented, including: (a) service within the school environment (e.g., on-campus tutoring), (b) service outside the school environment (e.g., community projects like park clean-up), (c) service as an element in academic courses (a single project or ongoing basis), (d) service as a separate course in the curriculum (e.g., students work at a single site for a specified number of hours during the school term), (e) service as a curricular requirement (e.g., students are required to complete service hours to fulfill a SL requirement) and (f) service as a curricular option (e.g., these are not required and students usually select SL on the basis of their personal values and interests).

In 2008, Billig and Weah (2008) introduced the *K-12 Service-Learning Standards for Quality Practice*. The document contains 8 standards:

1. Meaningful service. SL actively engages participants in meaningful and personally relevant service activities.

2. Link to Curriculum. SL is intentionally used as an instructional strategy to meet learning goals and/or content standards.

3. Reflection. SL incorporates multiple challenging reflection activities that are ongoing and that prompt deep thinking and analysis about oneself and one's relationship to society.

4. Diversity. SL promotes understanding of diversity and mutual respect among all participants.

5. Student voice. SL provides students with a strong voice in planning, implementing, and evaluating service-learning experiences with guidance from the instructor and community partner.

6. Partnership. SL partnerships are collaborative, mutually beneficial, and address community needs.

7. Progress monitoring. SL engages participants in an ongoing process to assess the quality of implementation and progress toward meeting specified goals, and uses results for improvement and sustainability.

8. Duration and intensity. SL has sufficient duration and intensity to address community needs and meet specified outcomes.

Seven key recommendations for planning the implementation of a SL course are presented by Rosenkranz (2012), based on work of Honnet and Poulson (1989): (a) the

student should provide meaningful service to the community, (b) student service should meet a need or goal of the community, (c) members of the community should help define the need, (d) the service provided should stem from course objectives, (e) service should lead to an academic assignment that requires reflection, (f) the reflective assignment should be assessed and evaluated for course credit, and (g) course credit should be based on demonstrated learning, not demonstrated service (Honnet & Poulson, 1989; Rosenkranz, 2012).

Many colleges and universities report the availability of SL programs and an institutional commitment to SL curriculum (Bringle & Hatcher, 1997). Research on SL has demonstrated areas where SL has an impact, including (a) personal and social development, (b) civic responsibility, (c) academic learning, (d) career exploration and aspirations, (e) schools, and (f) communities (Billig, 2000). SL also has a positive effect on student personal growth and development, especially related to a sense of personal efficacy (Eyler, Giles, & Braxton, 1997; Keen & Keen, 1998), personal identity (Eyler & Giles, 1999), spiritual growth (Soukup, 1999), and moral development (Boss, 1994; Gorman, 1994). Students and faculty report that SL improves students' ability to apply their learning to real-world settings (Eyler & Giles, 1999; Kendrick, 1996). Students in SL had higher scores on the state test of basic skills (Schumer, 1994). SL contributes to career development. SL results in greater mutual respect between teachers and students (Billig, 2000) and a more positive perception of schools and youth as valuable members of the community (Billig, 2000; Driscoll, Holland, Gelmon, & Kerrigan, 1996).

SL examples are apparent in many of the kinesiology disciplines, including athletic training, health education, recreation, rehabilitation therapy, and physical

education (Carson & Raguse, 2014). Carson and Raguse (2014) provide a systematic review of SL in youth PA settings. The specific focus was to focus on literature in kinesiology with an emphasis on youth PA. Butcher and Hall (1998) described a SL project called Team Lincoln that was designed to offer physically active games during recess; the program results indicated success in improving children's recess-related attitudes and enjoyment (Butcher & Hall, 1998). Williams and Kovacs (2001) examined a partnership between a nursing home and a university to promote PA in older adults. Undergraduate students from a motor development course provided the SL experiences with results indicating that the SL was mutually beneficial for both parties (Williams & Kovacs, 2001). Meaney and colleagues (2009) addressed PA promotion using physical education majors to foster motor skill development with children (Kindergarteners). Results showed that the physical education students improved their pedagogical content knowledge. A key recommendation is to explore the evaluation of SL and to expand the research to include additional stakeholders (i.e., students, teachers, pre-service teachers, family, community, and the university).

Distance Education

Taylor (2001) summarizes the history of distance education and describes five generations of distance education largely defined by the media and the instructional options available. The first generation is characterized by the correspondence model (i.e., print and post office), the second generation is characterized by the multi-media model (i.e., broadcast radio and television), the third generation is characterized by the tele-learning model (i.e., audio teleconferencing and video conferencing), the fourth generation is characterized by the flexible learning model

(i.e., interactive multimedia online, internet-based access, and computer-mediated communication), and the fifth generation is characterized by the intelligent flexible learning model (i.e., computer-mediated communication using automated response system and Campus Portal access like Blackboard). Due to the availability and access to the internet, distance education is experiencing a boom in popularity and use (Berge & Collins, 1995; Gilbert & Moore, 1998). During the 2006- 2007 academic year, 66% of two-year and four-year institutions reported offering distance education courses (Parsad & Lewis, 2008). Additionally, as of 2008, Allen and Seaman (2007) reported that approximately 20% of all higher education students were enrolled in at least one online course.

The basic premise of distance education is that teachers and students do not share the same location. Because they are in different places they are dependent upon some form of communication technology. Cavanaugh (1999) states, "distance learning uses a group of systems to bring teaching and learning together by transmitting information or expertise from one place to another for learner benefits (Cavanaugh, 1999, p.4)." Moore and Kersley (2011) use the following definition: "distance education is teaching and planned learning in which teaching normally occurs in a different place from learning, requiring communication through technologies as well as special institutional organization" (p.2).

Distance education can be classified as synchronous or asynchronous. Synchronous distance education is based on time and is location dependent (Bernard et al., 2004). For example, in the mid-1980s with the popularity of video conferencing, a common application would have been two or more university classes in different

locations connected by telecommunication technology where a group of students would meet in a specific time and location and usually watch instructions via a closed circuit television (Bernard et al., 2004). The idea was to emulate traditional classroom instruction. The opposite of the "group-based" form of instruction is "individually-based" distance education. This is where students in remote locations work independently, usually with the support of the instructor. This is referred to as asynchronous because students are not synchronized with peers and communication is largely by email or through computer-mediated classroom software (Bernard et al., 2004). Asynchronous distance education has its roots in correspondence education where the students were independent and were connected to the instructor by the form of communication used. According to Bates (1997), asynchronous distance education is more effective than synchronous distance education at promoting a learner-centered environment, specifically by supporting interpersonal interactions, both between teacher and students and between students and their peers.

Distance education suggests that online courses can support deep content learning as well as the flexibility to accommodate participants, co-construction of meaning through sharing of personal experiences, and a reflective and social environment online that supports interaction (Barab, Thomas, and Merrill, 2001). In asynchronous distance education, students engage in high levels of interactions with text-based communication (Johnson, Aragon, Shaik, & Palma-Rivas, 2000; McDonald & Gibson, 1998). It is suggested that this is because computer-mediated communication promotes critical thinking and reflective practice, and because it allows more time for reflection and revision it leads to more permanence when compared to verbal instructions (Boyd, 1990;

Dehler & Porras-Hernandez, 1998). The interactions of an asynchronous course can feel more personal due to a feeling of anonymity using computer-mediated communication (Mikulecky, 1998).

Opponents of distance education believe that distance education courses are unable to duplicate the social attributes of face-to-face instruction or the adaptive interaction with instructional content that teachers in a face-to-face setting can achieve. However, research has found cognitive achievement of distance education to be comparable to traditional education, and in some cases better (Barker & Platten, 1988; Barry & Runyan, 1995). A suggested reason for this is that computer-mediated communication tools create new opportunities for distance education courses that afford increased instructional and social interaction (Barab, Thomas, & Merrill, 2001).

Kerka (1996) outlines the benefits of distance education as (a) flexibility to meet specific needs, (b) providing equity of educational opportunity to students in varying localities, (c) low-cost alternatives, (d) new learning experiences, and (e) expanded resources. In order to take advantage of the benefits of distance education, proper implementation of quality distance education programs must exist. The Quality Matters (QM) rubric is a faculty-oriented, process-centered, peer-reviewed instrument based on instructional design principles (Quality Matters, 2005) designed to assure quality design in online and blended courses. The University of South Carolina uses the Distributed Learning Quality Assurance Standards for Faculty (A. Haynes, personal communication, July 25, 2016) that was adapted from the fifth edition, 2014 Quality Matters Rubric. The rubric consists of 49 items in eight categories describing the criteria to be met. The eight categories within the rubric are (a) course overview and introduction, (b) learning

outcomes/objectives, (c) assessment and measurement, (d) instructional materials, (e) course activity and learner interaction, (f) course technology, (g) learner support, (h) usability, and (i) accessibility. Of the 49 items, 26 of them are required and must be included within the course offered.

The use of SL in distance education is limited. Soria and Weiner (2013) investigated the effects of SL in a distance education course in technical writing. Quantitative data showed a positive relationship between participation in SL and technical writing outcomes. Also, qualitative data revealed that SL helped students to draw links to the "real world", connect with their audience, and develop a sense of purpose in their writing (Soria & Weiner, 2013).

Theoretical Frameworks

Constructivist learning theory. The main tenet of constructivism as a theory of learning is that knowledge is created from experience used to support new learning. In education, constructivism as a theoretical framework finds its strongest roots in the work of Jean Piaget and Lev Vygotsky. Piaget stressed biological/psychological mechanisms of learning, while Vygotsky focused on social factors that influenced learning (Phillips, 1995, p7). Yet, both scholars were fundamentally concerned with how individual learners construct knowledge. Rovegno and Dolly (2006) summarized the contributions of Piaget and Vygotsky as follows:

> In the application of both Piaget's and Vygotsky's theoretical models, the teacher is viewed as a facilitator who helps student learn new knowledge by creating

positive learning environments that take into account the child's prior knowledge, experience, developmental level, and culture. (p.244)

A key concept of constructivism is that understanding is in the learner's interactions with the environment; there is no way to separate what is learned from how it is learned (Savery & Duffy, 1995). Hein (1996) outlines nine guiding principles to consider for educators: (a) learning is an active process in which the learner uses sensory input and constructs meaning out of it, (b) learning consists of constructing meaning and constructing systems of meaning, (c) constructing meaning happens in the mind, (d) language influences learning, (e) learning is a social activity, (f) learning is contextual, (g) one needs knowledge to learn (e.g., prior knowledge), (h) learning takes time, and (i) motivation is essential for learning.

The constructivist knowledge outlined above suggests a set of instructional principles that can guide teaching and the design of learning environments (Savery & Duffy, 1995). Savery and Duffy (1995) present eight instructional principles: (a) anchor all learning activities to a larger problem, (b) support the learner in developing ownership for the overall problem or task, (c) design an authentic task, (d) design the task and the learning environment to reflect the complexity of the environment they should be able to function in at the end of learning, (e) give the learner ownership of the process used to develop a solution, (f) design the environment to support and challenge the learner's thinking, (g) encourage testing ideas against alternative views and alternative contexts, and (h) provide opportunity for and support reflection on both the content learned and the learning process.

Social-ecological perspectives. Social-ecological models (SEM) provide a framework to consider how different levels of a social-ecological system interact and influence MI. Bronfenbrenner (1977, 1979) proposed a social-ecological perspective to recognize interrelated variables that work at various levels to impact human behavior in a specific domain. In the health promotion field, McLeroy, Bibeau, Steckler, and Glanz's (1988) social ecological model, which is an adaptation of Bronfenbrenner's (1977, 1979) work, highlights the interwoven nature of multiple levels of influence on school-based PA promotion (Langille and Rodgers, 2010). McLeroy et al. (1988) suggested five levels of factors that reflect the range of strategies available for health promotion interventions: (a) intrapersonal factors, (b) interpersonal processes and primary groups, (c) institutional factors, (d) community factors, and (e) public policy. In the context of school-based PA promotion efforts, schools are influenced by internal and external social and physical factors, such as appropriate space, policy, administrative support, community partnerships, and parental support. Emmons's (2000) SEM is a meaningful framework to consider the social-contextual factors that influence how policy, community, and organizational levels interact and influence opportunities for health behaviors in a specific organizational setting (Langille & Rodgers, 2010).

When CTs implement MI as the target behavior, attitudes and beliefs about MI might be influenced by interactions with students or other teachers, the availability of resources, support of the administration, support of parents and the community, and/or district, state, or national policies related to MI. Research has examined contextual factors related to CTs' perceptions and beliefs regarding MI. Webster et al. (2013) found

that CTs' awareness of a state policy for school PA, as well as perceived school support for MI, was indirectly associated with the teachers' self-reported PA promotion.

CHAPTER 3

Viability of University Service Learning to Support Movement Integration in Elementary Classrooms: Perspectives of Teachers, University Students, and Course Instructors Across Three Semesters[1]

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Abstract

Little research has explored the potential of using service learning (SL) to support movement integration (MI) in elementary school classrooms, which is a key element of school-based physical activity programming. This study used a qualitative single case study design to examine the views of elementary classroom teachers (CT), PCT, and course instructors who were involved with a university course that drew upon principles of constructivism and SL to prepare PCT to use MI. Focus groups with 172 PCT and individual interviews with 7 CTs and 4 course instructors were thematically analyzed using constant comparison techniques to identify perceived successes and challenges of the course. Findings centered on three major themes, including real-world context (gaining entry but losing access, and placements and scheduling), learning embedded in a social context (e.g., peer support, reciprocal learning, real world outcomes, and social interactions.), and scaffolding (e.g., teacher as facilitator, and support structure.). This study adds to the emerging research base on school-university partnerships to support both preservice and inservice educational initiatives to generate and sustain physically active school communities.

Keywords: Teacher education, field experiences, comprehensive school physical activity program, physical activity promotion

Viability of University Service Learning to Support Movement Integration in Elementary Classrooms: Perspectives of Teachers, University Students, and Course Instructors Across Three Semesters

The U.S. Department of Health and Human Services (USDHHS, 2008) recommends that school-aged youth accumulate at least 60 minutes of moderate-to-vigorous physical activity (PA) daily. However, many children and adolescents are not meeting this guideline (Troiano, Berrigan, Dodd, Masse, Tilert, & McDowell, 2008). The Institute of Medicine (IOM) suggests that schools have an existing infrastructure that allows for virtually all youth to engage in PA (IOM, 2013; Pate et al., 2006) and recommends a whole-of-school approach to PA promotion that affords PA engagement in multiple contexts before, during, and after school. A leading example of a whole-of-school approach to PA promotion is the comprehensive school physical activity program (CSPAP) model, (Center for Disease Control [CDC], 2013), which consists of five components: (a) physical education, (b) PA during school, (c) PA before and after school, (d) staff involvement, and (e) family and community engagement.

Movement Integration

Movement integration (MI) in general education classrooms is a widely recommended strategy for increasing PA during school beyond physical education (CDC, 2013; IOM, 2013). MI is defined as incorporating PA, at any level of intensity, into general education classrooms during normal classroom time (Webster, Russ, Vazou, Goh, & Erwin, 2015). In the elementary school setting, the support of the classroom teacher (CT) is vital to helping children accumulate 30 minutes of PA during school hours each day. In the United States, for instance, only five states (Alabama, Florida, Louisiana,

New Jersey, and Oregon) and the District of Columbia require the nationally recommended 150 minutes per week of physical education (SHAPE America, 2016). In general, MI can occur during routine transitions, as part of academic lessons, or during breaks between lessons (Webster, et al., 2015). Russ et al. (2016) developed the System for Observing Student Movement in Academic Routines and Transitions (SOSMART) for observing and categorizing student movement in elementary general education classrooms. A few of the most frequently occurring examples of student movement were as a result of (a) non-teacher directed transitions (e.g., incidental movements occurred), (b) teacher-directed transitions, (c) non-academic teacher-directed movement breaks, (d) academic-infused teacher-directed movement breaks, and (e) technology-led teacher-infused transitions or movement breaks (e.g., Go Noodle or YouTube videos; Russ, et al., 2016).

In intervention studies, MI has been shown to increase moderate-to-vigorous PA (Bartholomew et al., 2011; Beighle et al., 2010; Erwin et al., 2011; Goh et al., 2014; Mahar et al., 2006), decrease sedentary time (Mantis, Vazou, Saint-Maurice, & Welk, 2014; Salmon et al., 2005), improve on-task behavior (Mahar et al., 2006; Mahar, 2011), enhance cognitive function (Donnelly & Lambourne, 2011; Howie, Newman-Norlund, & Pate, 2014), increase standardized test scores (Vazou & Smiley-Oyen, 2014), increase enjoyment (Donnelly et al., 2009; Howie et al., 2014; Vazou et al., 2012) and increase perceived competence in the classroom (Vazou et al., 2012). Small bouts of MI (i.e., 10 minutes or less) in the classroom have been found to increase students' PA to moderate intensity levels (Stewart, Dennison, Kohl, & Doyle, 2004). Moreover, students' overall

step-counts increased during the school day as a result of teacher incorporated MI activities (Erwin, Beighle, Morgan, & Noland, 2011).

Service Learning to Support Movement Integration

Despite the benefits of MI to children's PA and school performance, research has shown that elementary CTs perceive numerous barriers to using MI, especially limited time to plan/implement PA opportunities (Allison, et al., 2016; Brown & Elliott, 2015; Cothran, Kulinna, & Garn, 2010; Dinkel, Lee, & Schaffer, 2016; Gately, Curtis, & Hardaker, 2013; Huberty, et al., 2012; Langille & Rodgers, 2010; McMullen, Martin, Jones, & Murtagh, 2016; Naylor, Macdonald, Zebedee, Reed, & McKay, 2006; Patton, 2012; Stylianou, et al., 2016; Webster, Zarrett, Cook, Egan, Nesbitt, & Weaver, 2017). In certain cases, it may therefore be an unrealistic expectation for classroom teachers to use MI without assistance from external service providers. Service learning (SL) is a recommended strategy to aid classroom teachers and other school professionals in implementing PA opportunities within a CSPAP (Webster et al., 2015). University settings could offer a particularly useful platform to implement this strategy, as university programs, including teacher education programs, have increasingly incorporated SL over the past 20 years (Blodgett, 2016). SL in the context of university programming is defined as "[integrating] academic material, relevant community-based service activities, and critical reflection in a reciprocal partnership that engages students, faculty/staff, and community members to achieve academic, civic, and personal learning objectives as well as to achieve public purposes" (Bringle & Clayton, 2012, p. 105).

SL through university programming has been successfully implemented in various health promotion contexts (Butcher & Hall, 1998; Carson & Raguse, 2014;

Galvan & Parker, 2011; Rosencranz, 2012). Several such initiatives have focused on youth PA promotion and have resulted in a wide range of positive outcomes for those receiving the support of service learners, such as increased enjoyment among elementary children during school-based recess (Butcher & Hall, 1998) and increased motor learning, cooperation, teamwork, and positive adult relationships in underserved youth (Galvan & Parker, 2011). Additionally, preservice physical education students gained content knowledge, established protocol techniques, and experienced an enhanced awareness of cultural competence (Galvan & Parker, 2011). SL in undergraduate curricula has been shown to enhance students' understanding the relevance of course content, positively influence student and faculty attitudes, encourage support for community initiatives, and increase volunteerism (Eyler, Giles, Stenson, & Gray, 2001; Hesser, 1995; Wechsler & Fogel, 1995).

Constructivist Approach to University Service-Learning

The main tenet of constructivism as a theory of learning is that knowledge is created from experience used to support new learning. In education, constructivism as a theoretical framework finds its strongest roots in the work of Jean Piaget and Lev Vygotsky. Piaget stressed biological/psychological mechanisms of learning, while Vygotsky focused on social factors that influenced learning (Phillips, 1995,). Yet, both scholars were fundamentally concerned with how individual learners construct knowledge. Rovegno and Dolly (2006) summarized the contributions of Piaget and Vygotsky as follows:

> In the application of both Piaget's and Vygotsky's theoretical models, the teacher is viewed as a facilitator who helps students learn new knowledge by creating

positive learning environments that take into account the child's prior knowledge, experience, developmental level, and culture. (p.244)

Constructivist views of learning position the student as a central agent in the learning process (Bruner, 1960; Dewey, 1916; Piaget, 1970). From this perspective, students do not just acquire knowledge, but actively construct it by developing connections between new subject matter content and prior knowledge/experience. These connections allow students to make sense of new information in ways that are more personal to them and to develop academic content that is personally meaningful. Accordingly, constructivist-based teaching approaches attempt to develop links between what is taught and what is learned by providing reflection opportunities for students so they can develop content knowledge (Beck & Kosnik, 2006).

Previous research demonstrates that the application of constructivist-guided teaching and field experiences in teacher education can support the process of learning to teach (Beck & Kosnik, 2006). However, studies have not investigated constructivist-guided coursework and SL experiences as possible mechanisms to facilitate preservice classroom teachers' (PCT) learning about MI. Examining PCTs' constructivist-guided MI planning and implementation experiences applied to real world elementary classrooms can yield valuable insights about the processes involved with learning to use MI. For instance, while the goal of field experiences is usually to promote the educational philosophies, dispositions, and skills that the university program espouses, learning about teaching while situated in field placements can serve to reinforce dominant policies and practices within the school culture that oppose the program agenda (Feiman-Nemser & Buchmann, 1985; Moore, 2003; Zeichner & Tabachnick, 1981). Thus, while field

experiences offer a unique and powerful platform for learning to teach, it is vital to understand preservice teachers' learning experiences within, and in relation to, formal assignments conducted in schools so that teacher education programs can develop evidence-based approaches to preservice training. Constructivist-guided field experiences may be critical to helping PCT identify effective strategies to implement movement in actual elementary school classrooms, despite facing possible challenges related to the learning process and the existing school culture.

Purpose of the Study

According to the U.S. National Physical Activity Plan, requiring preservice and continuing education in MI for elementary classroom teachers is a key strategy for providing youth with access to high quality, CSPAP programming (www.nationalphysicalactivityplan.org). Preservice teacher training presents an especially important setting for change, as teachers' thoughts about educating and learning, and their instructional practices, might be more flexible early in their career versus later (Cothran, Kulinna, & Garn, 2010; Kennedy, 1999). Preparing PCTs with knowledge and skills for MI might help to establish dispositions and behavioral patterns that help to develop MI as part of routine classroom practices in schools.

Previous studies with PCTs support the value of MI in preservice teacher education. PCTs who had taken university coursework in school-based PA promotion reported higher perceived competence for MI than their counterparts who had not taken such coursework (Webster, Monsma, & Erwin, 2010). Also, when PCTs were trained to use MI, positive changes were found in participants' attitudes and perceived competence related to MI (Webster, 2011), feelings of empowerment to implement MI (Goh et al.,

2013), as well as efficacy beliefs related to MI, perceived barriers to MI, and willingness to integrate MI (Webster, Erwin, & Parks, 2013). While these results are encouraging, further investigation into various delivery platforms and instructional approaches for preservice training related to MI is needed to inform best practice recommendations for teacher education. The purpose of this study, therefore, was to examine stakeholders' (PCTs', CTs', and university course instructors') views of constructivist-guided, SL-based MI based on their experiences participating in a university course on school PA promotion for PCTs. The specific research questions examined were:

1. What successes do stakeholders perceive with respect to constructivist-guided SL to implement MI?

2. What challenges do stakeholders perceive with respect to constructivist-guided SL to implement MI?

Methods

Study Design

A qualitative single case study design was utilized in this study, in view of proposals by Yin (2014), who declares that case study examination is fitting in various conditions, including when (a) the exploration questions concentrate on the "how" and "why" behind social experiences, (b) the researchers look for top to bottom data about the event being studied, and (c) the examination concentrates on a real-world context. Qualitative inquiry allows for a deep understanding of an issue (Tracy, 2013). Given that this study focused on the challenges and successes of implementing SL-based MI in general education classrooms with a constructivist-guided course design, a single case

study permitted the research team to deeply probe the participants' perceptions of their SL experiences with MI.

Participants and Setting

Participant demographics can be found in Table 1. Participants were PCTs (n = 172; females = 167), CTs (n = 7; females = 6), and course instructors (n = 4; females = 3) from seven sections of a university course on school wide PA promotion across three 16-week academic semesters (Spring 2015, Fall 2015, and Spring 2016). As part of the course, the PCTs completed SL that focused on providing MI in elementary schools. The course is required for all preservice teachers majoring in early childhood education (leading to certification for teaching Pre-Kindergarten to Grade 3) and elementary education (leading to certification for teaching Grades 2-6) at the first author's university. Undergraduate PCT in their sophomore, junior, and senior years, and graduate PCT in their first and second years of a two-year master's degree program are eligible to enroll in the course. Participants included 97 early childhood education majors, seven elementary education majors, three students who identified their major as "other," and two students who did not indicate their major. All participants were undergraduate students with ages that ranged from 18 to 41 (M_{age} = 20.98), including one freshman, 95 sophomores, 29 juniors, and 48 seniors. The racial/ethnic makeup of these students was 61.7% White Caucasian, 23.4% African American, 1.7% Asian, 3.4% Hispanic, 12.1%

The role of CTs in the SL component of the course was to host PCT. The CTs who participated in this study were part of a larger study, which was a two-year pilot intervention aimed in part at increasing MI through school-university partnerships (Author, in review). CTs ranged in age from 24 to 54 ($M_{age} = 33.8$), and years of

teaching experience from 2 to 33 years (M_{years} = 12.8). The breakdown for CT race/ethnicity ranged from was 12.5% African American, and 87.5% White Caucasian. Three participants held Bachelor's degrees and four held Master's degrees. One teacher had no previous professional preparation related to MI, three teachers had undergraduate level training in MI, one teacher had graduate level training in MI, one teacher had inservice level training in MI, and one teacher had both undergraduate-level and inservice-level training in MI. Two teachers were awarded Teacher of the Year (TOTY) and one was nominated as TOTY. One teacher was a two-time TOTY, and the other was also named district TOTY. All seven teachers had experience related to SL via their participation in the pilot intervention study. Additionally, teachers reported having SL experience from elementary practicum courses at the university, and had previously hosted student teaching interns.

CTs were from three schools purposively selected from a mid-sized city in the southeastern United States for the larger pilot study described above. Two of the schools were charter schools (Schools A & B) from one school district and the other school was a regular public school (School C) from another school district. Schools A and B served a combined total of 376 students across grades K-3. Data on eligibility for free and reduced lunch were not available for these schools at the time of the study. School C served a total of 646 students in grades K-5 with 65% of the students eligible for free and reduced lunch.

School enrollments for schools A, B, and C ranged from 176 to 646, and the percentage of students receiving free and reduced lunch ranged from 9.0% to 48.6%. The breakdown for student race/ethnicity ranged from 18.5% to 64.35% African American,

21.4% to 63.0% White Caucasian, and 12.4% to 18.5% classified as "other." SL visits were completed in a total of eleven classrooms from Spring 2015 to Spring 2016. There were 115 students that ranged from 6 years old to 9 years old (M = 7.33). The racial/ethnic makeup of these students was 61.7% White Caucasian, 23.4% African American, 1.7% Asian, 3.4% Hispanic, 12.1% "Other," and 0.8% not listed.

Course instructors were graduate students enrolled in a Ph.D. program in physical education at the authors' university. Three of the instructors self-identified as White Caucasian and one instructor self-identified as Asian. Instructors ranged in age from 25 to 44 years old (M_{age} = 32.75). The course instructors' teaching experience ranged from 2 to 18 years (M_{years} = 8.25) at the K-12 level and from 1-5 years (M_{years} = 2.65) at the university level. One of the course instructors had experience with SL prior to teaching the course in this study (the instructor had participated in SL as an inservice teacher for one year while hosting a student teacher).

Description of the University Course

Participants were enrolled in a university course designed using constructivist principles for elementary and early childhood education majors to promote PA in schools with emphasis on the general education classroom environment. The course had a university-based component and a field-based SL component. The university-based component involved class meetings at the university campus, where the instructor acted more as a facilitator to help PCT learn about PA promotion during the school day as part of a CSPAP, including strategies for MI, such as implementing movement breaks and teaching active academic lessons. The main instructional modalities used were readings, Power Points, instructor demonstrations, and student presentations (e.g., peer teaching).

Throughout the semester, PCT created portfolios of their work so they would have a take-away resource from the course. Additionally, group work and collaboration were used to create student interaction where responsibility is shared and democratic (Gray, 1997). PCT engaged in opportunities for further social interactions and reflections by participating in an online learning community of practice called Move for Thought (moveforthought.ning) and contributing to a series of blogs and other information exchange platforms with community members, including PCT from another university and inservice CTs who were participating in the pilot intervention study.

The field-based SL component consisted of 6-10 field experiences in which PCT were asked to apply content learned in the university classroom setting to real-world contexts (e.g., elementary school classrooms). SL field experiences consisted of conducting classroom observations and implementing classroom-based movement breaks and active lessons. PCT were given ownership of the planning and implementation process for the SL assignments and collaborated with the hosting CTs to select lesson content and coordinate the school visits. However, the number of SL visits and the extent of ownership varied across PCT due to extreme weather that resulted in the university cancelling a week of school in Spring 2015 and a reduction in required SL visits (from 10 to 6) for students in the following two semesters based on the course instructors' evolving understanding of what should be considered realistic expectations for the course. The PCT were given a release day once a week from regularly scheduled class meetings to conduct school visits (e.g., a Tuesday/Thursday class would meet on Tuesday and students would then conduct their school visits on Thursday). While practicum experiences offer direct service in face-to-face interactions as with SL (Kaye, 2010, they

differ in their primary outcomes. SL experiences required a mutual benefit and learning from both the provider and the recipient (Furco, 1996). PCT who had already established a relationship with a CT or school from previous practicum experiences were able to take ownership and arranged their own placements to conduct the SL visits, while CTs who did not have a previously established relationship with any CTs or schools were assigned to conduct SL in classrooms that were participating in the larger pilot study. Therefore, some PCT already had experience and familiarity with the schools/classrooms they went to for SL, while others did not.

Course Calendar

Day one. Day one consisted of a course introduction and overview of the course syllabus, as well as icebreakers designed to promote social interaction between PCTs and between PCT and the CI (Fosnot, 1996; Yilmaz, 2008). *Win Forever* chapter 2 was assigned as a reading for the next class meeting discussion. *Win Forever* discusses the importance of developing a philosophy.

Day two. PCT worked in small groups to discuss their views and thoughts about the assigned reading. After small group discussions, a sharing out of ideas and thoughts took place. A teacher-directed lecture related to principles of promoting PA and the elements of effective elementary physical education were presented, with opportunities for partner work (think, pair, and share strategies) and small group discussions. Research regarding PA is presented to challenge students existing beliefs and understandings relevant to the instructional tasks (Cunningham, Duffy, & Knuth, 1993; Knuth & Cunningham, 1993). *Schoolwide PA* chapter 1 was assigned as reading for the next class meeting. A one page teaching philosophy paper was assigned.

Day three. The philosophy paper was due and turned in via an online submission portal. The lecture and activities in class were designed around tips and strategies for classroom management. Students were asked to think and reflect on prior experiences in schools and to think about teachers they had in the past with good classroom management and bad management and to make a list. The lists were discussed in small groups and shared out to the class as a whole.

Day four. The LET US play principles (e.g., eliminating lines, elimination games, team size, staff involvement) are suggested as ways to increase MVPA during scheduled PA opportunities (Brazendale et al., 2015). Students discussed popular playground games as recess (e.g., kickball) and how they could be adapted to me the LET US play principles. PCTs were assigned to bring to class a short 3-5 minute movement break to present to class, and to use the LET US play principles to guide their movement breaks.

Day five. PCTs brought a 3-5 minutes movement break to present to class. Each PCT brought enough copies for everyone to have. After each presentation, the class and instructor offered feedback and suggestions for improvement. The class was to act like the grade level being taught to create an active teaching environment that simulated future context (Cunningham, Duffy, & Knuth, 1993; Knuth & Cunningham, 1993) as well provides a social interaction (Hein, 1996; Savery & Duffy, 1995).

Day six. Same as day five.

Day seven. Promoting PA at recess and developing lesson plans were covered by the CI. PCTs worked in groups to complete recess activity design lesson to design the physical environment of a recess facility that would maximize student participation. This

allowed the PCTs to evaluate alternative solutions as a way to increase understanding (Cunningham, Duffy, & Knuth, 1993; Knuth & Cunningham, 1993).

Day eight. PCTs continue to work on developing a lesson plan for an active lesson and it was due by the end of the period. PCTS worked in groups and the CI circulated and offered support and acted as a facilitator to better serve the students.

Day nine. PCTs brought an active lesson that focused on academic content infused with movement to present to class. Each PCT brought enough copies for everyone to have a copy. After each presentation, the class and instructor offered feedback and suggestions for improvement. The class was to act like the grade level being taught to create an active teaching environment that simulated future context (Cunningham, Duffy, & Knuth, 1993; Knuth & Cunningham, 1993) as well provides a social interaction (Hein, 1996; Savery & Duffy, 1995).

Day ten. Same as day nine.

Day eleven. This was a course release day where PCTs went into elementary classrooms and observed the elementary classroom they were going to be working in. The students were to observe and take notes on the class environment, space, resources and observable rules and routines.

Day twelve. The CI provides a lecture on classroom environment, space, and resources with the focus of creating learning environments that reflect the complexity of the classroom they encountered in their observations. Small group and partner discussion regarding their observation experiences too place.

Day thirteen. This was a course release day where PCTs went into elementary classrooms and implemented movement integration assignments that included short 3-5

minutes movement breaks, movement breaks that transitioned between academic lessons, and active lessons.

Day fourteen. This was a SL debrief day where the PCT got into small groups to discuss how their implementations were going, and to discuss their individual experiences. After small group discussion, key points were shared with the entire class. The conversation and topics covered were determined by the PCT.

Day fifteen. This was a course release day where PCTs went into elementary classrooms and implemented movement integration assignments that included short 3-5 minutes movement breaks, movement breaks that transitioned between academic lessons, and active lessons.

Day sixteen. The CI provided a demonstration of an active lesson. Students independently observed and evaluated the CI based on a provided rubric. After the demonstration, PCTs discussed in small groups what they observed and provided group feedback to the instructor on the quality of the lesson. The rest of class time was dedicated to the development of student lesson plans for an active lesson.

Day seventeen. PCTs developed an active lesson to be presented and videotaped during class time. The lesson was to last fifteen minutes and be an academic lesson that integrated movement. The student videotaped the lesson so that they could complete a self-evaluation and reflection of their teaching assignment.

Day eighteen. This was a course release day where PCTs went into elementary classrooms and implemented movement integration assignments that included short 3-5 minutes movement breaks, movement breaks that transitioned between academic lessons, and active lessons.

Day nineteen. PCTs developed an active lesson to be presented and videotaped during class time. The lesson was to last fifteen minutes and be an academic lesson that integrated movement. The student videotaped the lesson so that they could complete a self-evaluation and reflection of their teaching assignment.

Day twenty. This was a course release day where PCTs went into elementary classrooms and implemented movement integration assignments that included short 3-5 minutes movement breaks, movement breaks that transitioned between academic lessons, and active lessons.

Day twenty-one. PCTs developed an active lesson to be presented and videotaped during class time. The lesson was to last fifteen minutes and be an academic lesson that integrated movement. The student videotaped the lesson so that they could complete a self-evaluation and reflection of their teaching assignment.

Day twenty-two. This was a course release day where PCTs went into elementary classrooms and implemented movement integration assignments that included short 3-5 minutes movement breaks, movement breaks that transitioned between academic lessons, and active lessons.

Day twenty-three. No class.

Day twenty-four. PCTs developed an active lesson to be presented and videotaped during class time. The lesson was to last fifteen minutes and be an academic lesson that integrated movement. The student videotaped the lesson so that they could complete a self-evaluation and reflection of their teaching assignment.

Day twenty-five. This was a SL debrief day where the PCT got into small groups to discuss how their implementations were going, and to discuss their individual

experiences. After small group discussion, key points were shared with the entire class. The conversation and topics covered were determined by the PCT.

Day twenty-six. This was a course release day where PCTs went into elementary classrooms and implemented movement integration assignments that included short 3-5 minutes movement breaks, movement breaks that transitioned between academic lessons, and active lessons.

Day twenty-seven. The discussion was a content review based on PCT feedback where classroom management was discussed in relation to their implementation experiences in the elementary classrooms.

Day twenty-eight. This was a SL debrief day where the PCT got into small groups to discuss how their implementations were going, and to discuss their individual experiences. After small group discussion, key points were shared with the entire class. The conversation and topics covered were determined by the PCT.

Day twenty-nine. This was a course release day where PCTs went into elementary classrooms and implemented movement integration assignments that included short 3-5 minutes movement breaks, movement breaks that transitioned between academic lessons, and active lessons.

Data Sources

Focus group interviews and individual interviews were conducted at the end of each academic semester and were used as data sources for this study. In-depth interviewing is a way to explore and understand the lived experience and meaning that is made by the participants (Seidman, 2013).

Focus group interviews. PCT participated in focus group interviews (*n* = 24*)*, which lasted between 19 and 59 minutes (*M* = 38:49). The interviews allowed the PCT to share thoughts, feelings, and opinions in a context designed to promote a sense of community and stimulate thinking and responses (Bader & Rossi, 1998; Krueger & Casey, 2014). Focus groups encourage self-disclosure and allow the researchers to obtain both individual and interactive viewpoints (Krueger & Casey, 2014). PCT were told their responses would be confidential and would not influence their grade in the course. The interview protocols followed a semi-structured format (Rubin & Rubin, 2011; Thomas et al., 2015). Specifically, the interviewers asked predesigned questions, followed by planned and unplanned prompts to direct participants to provide more in-depth responses. A moderator and an assistant moderator conducted the interviews (Krueger & Casey, 2014). Interview questions were used to understand the PCT' experiences within the course specific to planning and implementing MI in elementary school general education classrooms. Questions focused on PCT' perceptions of successes, challenges, and major take home messages. For example, a question pertaining to successes and challenges was "What do you believe were the causes of, or barriers to success during planning and implementation of the classroom MI activities," while a question pertaining to take home messages was, "If you had the chance to do everything again, what, if anything, would you change about your approach to planning and implementing these assignments?"

Individual interviews. CTs and university course instructors participated in individual interviews. Interviews with CTs ranged from 13 to 56 minutes (*M* = 24:53) and interviews for course instructors ranged from 18 to 35 minutes (*M* = 24:53). An individual interview format was used with CTs because the intervention team for the

larger pilot study was working with each teacher on an individual basis. This format was used with course instructors because the number of instructors each semester (2-3) was not enough for the recommended size (6-8 participants) for a focus group interview (Kruger and Casey, 2014). The interview protocol for CTs focused on their SL experiences related to MI during the academic semester. Specifically, questions focused on experiences related to setting MI goals, the use of the online community of practice for MI, experiences with SL, likes, dislikes, successes, challenges, major take home messages, and areas for future improvement. The interview protocol for course instructors focused on experiences and reactions related to using SL as a method to implement MI in elementary classrooms. Questions were utilized to comprehend the instructors' experiences coordinating MI via SL as a component of the university course. Specifically, questions concentrated on the instructors' impressions of accomplishments, difficulties, and significant take-home messages in connection with the execution of SL assignments related to MI. As with the focus group interviews, a semi-structured interview protocol was used for all individual interviews.

Data Analysis

All interviews were audio recorded and transcribed verbatim for analysis. Data analysis was guided by constant comparison methods (Dey, 1993; Goetz and LeCompte, 1981) and included an iterative procedure of reducing and triangulating the data to pull out themes gathered (Patton, 2014). Sources of data were uniformly separated and dispersed across four researchers. Every researcher read through his/her assigned transcripts several times to identify and code content (words, phrases, or other excerpts) that appeared to be helpful in answering the research questions (Table 3.1). Constructivist

principles of learning and teaching were used as lenses during data coding. For example, a quote that was consistent with the constructivist principle of teacher as facilitator was "he [instructor] did a good job with facilitating discussions [and] helped everyone who was not as comfortable." An example of a coding spreadsheet table can be found in Table 1. The researchers independently accumulated a list of codes paired with lines of text, and afterward met as a group to crosscheck each other's work, discuss any disagreements, and reach agreement regarding codes that should be used, updated, or disposed of. The next step was to arrange and blend the codes by research question, which served to conceptualize and categorize important chunks of data for further analysis. The categories were then searched for consistencies and commonalities to identify overarching themes.

Trustworthiness was accomplished in several ways, based on established recommendations (Lincoln and Guba, 1985; Patton, 2014; Shenton, 2004). First, the utilization of various data sources permitted the researchers to triangulate the information as an approach to bolster the validity of the findings. Second, the information was gathered at multiple points across the academic semester, thus guaranteeing that the findings thoroughly and accurately reflected the participants' views about challenges and successes involved with planning and implementing MI. Third, analyst triangulation was used to strengthen the confirmability of the findings. Fourth, in-depth information was provided about the participants, the course, and the school contexts to allow readers to decide whether the findings have transferability to other settings. Finally, the data collection procedures and protocols are reported in detail to allow for replication of the study, thus increasing its dependability.

Findings

Stakeholder responses produced three themes: (a) real world context, (b) learning embedded in a social context, and (c) scaffolding. These themes were apparent in the data across all stakeholder groups (PCT, CTs, and course instructors). Several subthemes were also identified. The themes and subthemes are discussed below using quotes from the interview transcripts as evidence. Pseudonyms are used in place of participants' actual names.

Real World Context

Real-world context refers to the SL concept of authenticity, where the experience must have a real-world context and/or be useful and meaningful in relation to an applied setting or situation (Carver, 1996; National Society for Experiential Education, 1998). Two subthemes were identified within this theme, including (a) gaining entry but losing access, and (b) placements and scheduling.

Gaining entry but losing access. Stakeholders agreed that the opportunity to go to schools and implement the SL assignments in real world elementary classrooms was, overall, a successful part of the course design. For some students in the course, it was their first experience in real classrooms. For example, Beth said,

> I love the part about actually going in the school. I've been in the Child Development Center [an early childhood center on the university campus] but this is the first time that I have been in a school teaching like actual lessons at all. So I definitely think gaining experience from this course has helped a lot.

Additionally, Katie said, "Because I'm a sophomore, I haven't had any teaching experience yet and I liked how this class gave me a chance to go into the schools."

Course instructors echoed this sentiment, as well. Susan said, “What I heard from my students was that they are really grateful that we provide them the opportunity to go to schools. So I think, really, the best part of this course was giving them [that] opportunity.”

Gaining entry into schools and doing the SL assignments in real world elementary classrooms helped the PCT to develop their understanding of the skills needed for successful MI. Lisa said, “We learned the importance about how solid your management system has to be and [how] your classroom has to be organized for movement but not get out of hand. I think [the instructor] helped us develop those types of skills.” Further, Samantha identified what she thought was the key to a successful SL experience: “I think just overall flexibility and just being able to adapt to your situation, based on what is going on.”

One challenge with having the PCT do SL in real world classrooms was that the course instructors were unable to conduct on-site observations of the SL implementations. Observing all PCT was not feasible given overlaps in SL scheduling and some placements that were a long distance from the university. Course instructors disliked not being able to observe the PCT implementing in the authentic classroom environment and felt they had lost access to PCT’ learning experiences. They were somewhat conflicted in that they wanted to provide students more time in the schools but also felt that not being able to conduct regular observations and provide on-site support was a limitation of the course design. Nikki said, “I didn't get to see them teach in the schools. So it was just hearing their stories when they got back in from the schools.”

David, another CI, stated, “One of the biggest challenges for me, I didn’t build in any time [for] myself to go out and observe my students in the classroom.”

Placements and scheduling. Placing the PCT in elementary classrooms was often a challenging aspect of trying to embed learning experiences in a real world context. The course instructors were sometimes responsible for securing SL placements for the PCT. As mentioned earlier, some PCT already had connections in schools, so the course instructors allowed these students to take advantage of these connections and organize their own placements. For these PCT, the opportunity to choose the placement was viewed as facilitative of a successful SL experience. Angela said, “I found my own placements – my mom’s a teacher and also I have [other] connections so I didn't have a problem with placements.” However, PCT who did not have any connections in schools relied on the course instructor to organize placements. Some of these PCT were assigned to classrooms participating in the larger pilot study, but additional placements were needed for other PCT. Despite the instructors’ efforts to secure enough placements for all students before the semester started, a number of schools declined the invitation to participate in SL. This process led to some scheduling issues during the semester. Janet said, “I ended up going to three different classrooms for six visits, so that was kind of frustrating but I mean it all worked out.” The course instructors also felt securing placements was a challenge. Nikki said,

> It was a little frustrating, especially in the beginning when we didn't have the placements
>
> sorted out before class started. Some of my students had their own teachers [found their own placement] all ready to go and had already started their observations

and movement breaks and active lessons, and others were behind and it caused this imbalance where I couldn't make something due on a certain date.

Another scheduling issue was the placement of the course in the university master schedule. Some sections of the course were scheduled after regular public school hours, so PCT in these sections were not able to use the class meeting time during the second class each week to do their SL assignments. Samantha said, "The class wasn't even offered during the school day time so the students were having to adjust [their] schedule." Despite this challenge, some PCT had more flexibility in their schedules and could find other times to do the SL assignments. Gail said, "I was doing my observations two hours away in my home district and so when [the instructor] cancelled that Thursday class for 7 or 8 weeks in a row, that gave me a chance to drive home and do [the SL]."

Learning Embedded in a Social Context

Constructivism promotes creating a learning environment where students interact with peers, and have opportunities to use prior knowledge and to construct new knowledge (Brady, 2004). Four subthemes were identified within this theme, including (a) peer support, (b) reciprocal learning, (c) real world outcomes, and (d) social interactions.

Peer support. As part of the university-based component of the course, PCT had opportunities to work in small groups to prepare and present practice movement breaks and active lessons to their classmates. Following these presentations, the preservice PCTs received feedback and critiques from their peers and the course instructor. The PCT felt the chance to have a trial run with their breaks and lessons prior to implementing them in real elementary classrooms facilitated successful SL experiences. Alison said, "I liked

that some of our classmates actually made us pretend to be five [years old] so when they did the lesson, we actually had to speak like five year olds and we misbehaved and stuff…so that made it good." The practice experiences were also helpful because the PCT learned from each other and often adopted each other's ideas. Bailey said,

> In the classroom, probably hearing other people's ideas, like my other classmates, that was really helpful. Like if someone did a cool movement break and I was like, oh yeah, I can do that, too, or like an active lesson, like I would never have thought I could use movement in that subject. So that was really helpful.

The course instructors also noted that the practice lessons seemed to benefit the PCT. Nikki said, "I really think the whole in-class experience, hands-on kind of learning, everybody demonstrating their movement breaks and everybody demonstrating their active lessons before implementing them in the schools really helped my students."

Reciprocal learning. The CTs felt the SL experiences were important to the PCT' learning about MI. CTs remembered what is was like to be going through preservice teacher education and they wanted to give back and be supportive, much in the way their own cooperating teachers were supportive of them. Diane said, "I always like when I am able to give future teachers a platform to actually test out the things that they are learning about," and Nicole said, "I think that it is so important, just being here to let [the preservice CT] do that I think is meaningful to me as a teacher because I want to kind of give back."

The CTs also valued the SL experiences for their own learning, indicating they learned about MI from observing the PCT implement their SL assignments. William said, "It's just better to see it demonstrated with your kids in your classroom in your setting so

you can see how to use the space, you can see what the kids need more clarification on," while Frannie said the SL "just added a little bit more to my repertoire as far as how I can formatively assess the children on the objectives of a lesson." CTs felt the SL was most valuable to their own learning when the activities that were implemented were relevant to what they were teaching in their classrooms. Kay said, "I really enjoyed it better when it was practical and I could use it in my classroom." Overall, CTs felt that participating in the SL experiences allowed them to reflect on their own teaching. Many of the CTs said they used or adapted ideas the PCT brought in. This was reflected in comments such as, "Professionally, it gave me a different perspective than what I am used to having in here," (Kay) "It just gave me some time to reflect on my own personal ways of doing things" (Lynn), and "A couple of the service learners gave me a few ideas" (Diane). Further, William said, "I think it is great to have new fresh ideas because you kind of get in your routine of your daily schedule and, yes, you add things here and there and you do change it up, but it is good to have fresh ideas."

Real world outcomes. The most important lesson learned from the perspective of the stakeholders was the value of PA and how important it is to integrate movement opportunities into the classroom. One of the PCT, Bernadette, said,

> I think it is important, and like Kate said, the kids need to be kids and movement is important, it stimulates your brain, it gets your heart moving. You can't expect a five-year-old to sit still for long; they need to move. It is important to implement in a positive way; you don't want to do movement as punishment.

The course instructors also commented on how important PA is, and for the PCT to formulate this belief based on real world experiences in elementary classrooms. Nikki

said, “I would say the major success story is hearing all of my students be so positive about incorporating physical activity in their classrooms and hearing all of their success stories.”

CTs also became more aware that PA is important. William said, “I think as time has gone on I’ve become more aware of the importance of brain breaks.”

Social interactions. Each group of stakeholders gained a lot from the social interactions the course provided. A major source of perceived success for the PCT was being able to work with elementary students. The PCT made comments, such as “I really like working with [the students]. It was fun watching them be excited and be social with their peers,” (Carol) and “Working with kids was most enjoyable” (Taylor). CTs noticed that their students enjoyed working with the PCT, too, and looked forward to the SL visits. Shelly said that when she mentioned the university student would be coming back for a visit, her students “would get more excited, they would get ready for it.” The course instructors continually identified their interactions with the PCT as their favorite part of teaching the course. Nikki said, “I love teaching that class” and David said, “I always enjoy this class. It is really a fun class for me to teach.” Course instructors particularly enjoyed seeing their students grow in their ability to develop classroom-based PA opportunities. Samantha said, “I just saw from the first time that we did a lesson to the last time the types and quality of lessons definitely improved throughout,” while Nikki said, “I love teaching that class because you get to see them develop their teaching abilities throughout the semester, practicing their movement breaks and active lessons. So that portion of [the course] I thought was a great success.”

Scaffolding

A key aspect of scaffolding in that is guided by others (Stone, 1998). Taken from construction, scaffolding is a structure that provides temporary support for learners that can be later removed (van de Pol, Volman, & Beishuizen, 2010).Scaffolding accounts for the levels of support provided. Two subthemes were identified within this theme, including (a) teacher as facilitator, and (b) support structure.

Teacher as facilitator. One way that the course was designed to allow for a more student-centered approach was to run the university-based component as a workshop and allow the students to guide the class content, based on their needs. This placed the instructor in the role of facilitator. One of the PCT, Rene, said, "I particularly like the way it didn't feel like a class. It felt more like a teacher workshop in which we work together to figure out how to implement these physical activities." The course instructors felt this approach was successful, too. David said,

> Nikki taught the other sections. [She] and I were on the same page as far as the set up and how we were going to work and what we did as far as the structure of setting up the idea and concept that our class time would be dedicated to like workshops to prepare for what we are expecting them to go out and do for the class. So I felt that the structure was definitely beneficial and helped.

Nikki described how the students worked together to refine their lesson plans before they went out into the school for implementation:

> We broke them up into groups with at least one person in each group that had done a lesson plan before and they all edited each other's [plans] and said "Okay,

> I read the lesson plan, I'm confused about what this means or what am I supposed to do here" and they were able to fine tune it.

Preservice CT Taylor reiterated this sentiment, saying, "Group feedback and watching others helped everyone."

Similarly, CTs wanted to support and facilitate the PCT by being flexible and open to lesson ideas. Nicole said, "I am open to them coming in if they need to teach something in particular. I am open to them coming and teaching something that we are not learning." However, the course instructors felt conflicted about how much time was spent in class on matters like classroom management and lesson planning and creating a balance between hands-on learning experiences for the PCT and covering the course content.

> I felt, I always felt like I didn't teach them enough even though it was a lot more hands-on and it may have been much more practical for them. I can't help but escape a feeling that as an instructor that maybe I didn't teach enough. (David)

The course instructors had a big impact on PCT' perceptions of the overall success or failure of the course as a whole. Preservice CT Erin said,

> I was going to drop [the instructor's] class right away because it didn't work out with my time and stuff and I was going to take it next semester but right when I came in here [he] made it so fun…so I dropped a different [class] even though I had to run to practice right away. I love that [he] made this like a community. I feel like I got a lot closer with this class than I did my other classes.

Not all PCT viewed the course instructor as a facilitator, though. In another section of the course Nicole described issues she had with her course instructor when she said,

> The majority of the time she just gave us a rubric of what she thought we were supposed to do and then from there we were supposed to go blindly into figuring out what she wanted, and like what a lot of people have said, we would try our hardest to be creative and she would be very negative.

Support structure. While the PCT could learn from each other and their course instructors, they felt the course structure could have provided more opportunities for them to learn through initial observations of the classrooms in which they implemented their SL assignments. Katie said,

> I think that, especially for people who aren't used to making lesson plans and going into classrooms, it would have been beneficial to have more observation hours for us to do before you actually go in and try to do a movement break so you can get to know the kids and kind of see what they are learning.

The CTs agreed that the PCT should come and observe first before they implement their SL assignments. They emphasized the importance of allowing the PCT to build rapport with the elementary students and gain knowledge of the classroom context, indicating they preferred "having the same service learner because [the service learner] developed relationships with the class and knew expectations" (Shelly). Shelly further explained that "I think [the children] built a better rapport with the [preservice CT] that was kind of coming in and they looked forward to her coming in." This feeling was also echoed by Nicole, who said,

> Of course, I assisted and kind of had [the preservice CT] focus but [the children] didn't have that relationship with her yet. I like when it is one student that is consistent week to week 'cause the kids have got to build that rapport with her.

PCT also preferred a consistent placement. Erin said, “Sticking with same teacher makes it easier,” while Katherine said,

> Well, I have been with the same teacher the whole entire time, which I thought was very beneficial because I could sort of learn what the kids like to do and what they don't like to do and what the teacher expected of me. Tomorrow I'm going into [a new school] for the first time and I am nervous because I haven’t been able to observe it.

The PCT felt many of the resources they accumulated from the course helped them to be successful and would be useful for them in the future. For instance, they found value in the portfolios they created. Wendy said,

> I like the idea of the portfolio because it's going to be helpful for us in the future when we have classrooms and we can use our portfolios and look at the active lessons because we have all of each other’s and it's a good resource.

Most of the stakeholders also found the Move for Thought community to be a valuable resource. Preservice CT Judy said,

> I really found the Move for Thought blog to be a successful tool more so than any other resource because I would feel lost trying to write a movement break or an active lesson out and then I would just go on Move for Thought, read through a number of the blog posts from other people, and even if my ideas were not exactly the same I could spin something off from one of their ideas and come up with something completely new.

The course instructors agreed that Move for Thought community was helpful to the PCT. Nikki said,

> I think one of the things that we haven't talked about is the Move for Thought component of [the course] and I think that it is a great resource for the students to understand that these types of blog areas exist. The teachers are literally just pooling information to draw from and add to.

CTs were also given the opportunity to participate in the online learning community along with the PCT. Some of the teachers mentioned the website was a useful resource. For example, Frannie said, "I did get some ideas from the website." However, in some cases, the PCT felt posting their ideas to the website was a waste of time. Hillary said,

> I felt like that was just another chore we were having to do. I don't even think [the instructor] was looking at what we were posting. I just felt like that was one more thing that I just having to throw out there that I was just getting graded on it being done.

Discussion

This study brought to light several successful and challenging aspects of using a constructivist-oriented university course with a SL component to prepare PCT for their future CSPAP roles. The major themes that emerged were (a) real-world context, (b) learning embedded in a social context, and (c) scaffolding.

The first theme, real world context, addresses the SL principle of authenticity (e.g., real world context (Carver, 1996). Savery and Duffy (2001) summarize constructivist instructional principles that can guide teaching and the design of learning environments. The learning principle associated with authenticity is to design an authentic task (Savery & Duffy, 2001), which places the learner in an environment where the cognitive demands (i.e., the thinking required) are consistent with those that exist in

the real world context (Honebein, Duffy, & Fishman, 1993). Such learning provides a mechanism for connecting experience to future opportunities (Carver, 1996). In the present study, SL conducted in elementary school classrooms allowed the PCT to realize the benefits of MI (e.g., student enjoyment).

Learning in a real world setting also presented challenges. Across all three semesters, stakeholders expressed frustration with placements. PCT felt like SL settings were disorganized and not solidified in a timely manner. Ensuring that PCT have a positive experience related to their placements is important as it can provide emotional and psychological support and lead to desired learning outcomes (e.g., collaboration and dialogue; Sorenson, 2014). A positive placement experience is based not only on having placements arranged at the beginning of the semester, but also on the appropriate selection and professional development of mentors (i.e. CTs) in schools to facilitate SL (Sorensen, 2014). To optimize field experiences, Zeichner (2006) recommends (a) building professional school partnerships in teacher education to address issues of quality in professional development schools, (b) situating instruction about teaching in relation to specific teaching contexts and using the expertise of P-12 teachers to inform instruction, planning, and evaluation in the teacher education program, (c) embracing communities as full partners in the education of teachers, and (d) supporting and closely monitoring clinical experiences. Another challenge with SL in real world contexts was that course instructors were not able to observe all PCT implementing their SL assignments. A suggestion to overcome this barrier would be to schedule the time for observations into the schedule. One method that was employed to help PCTs make time was to have a release day so the PCT could schedule their implementations, the CI could visit students

on each release day and rotate observation so each student gets observed as least one time.

The second theme, learning embedded in a social context, aligns with the constructivist perspective that learning occurs via interaction and the construction of knowledge in social settings (Cashman & Seifer, 2008). As part of the university component of the course, PCT were introduced to MI concepts and given the opportunities to develop and practice their lessons in microteaching situations with peers. This allowed the PCT to evaluate and provide feedback to each other, as well as to gain content ideas for future lessons. Peer support and the ability to have a trial run was a valuable learning tool. This finding is similar to a that reported in a previous study (Author, in review), in which group work enabled PCT to develop a shared understanding of MI as the basis for their construction of appropriate MI strategies and the application of these strategies into real world classrooms.

A key concept that arose from the data is that of reciprocal learning, demonstrated by the development of mutually beneficial relationships for preservice and inservice CTs. Sigmon (1979) defined SL as an experiential education approach that is premised on "reciprocal learning" (p. XX). Reciprocal learning emphasizes the SL principle of reciprocity (Furco, 1996). Specifically, SL should be designed to foster interactions and the construction of knowledge between the SL and the recipient, which ideally leads to a mutually beneficial relationship (Carver, 1996)). Reciprocity also finds footing in the constructivist literature (Kafai, Desai, Peppler, Chiu, & Moya, 2008), particularly in the assertion that knowledge is socially constructed (e.g., transactional and co-constructed knowledge, Luba & Guba, 2011). The partnership between the PCT and the CTs

provided the PCT opportunities to experience teaching in the classroom while simultaneously providing the CTs with new ideas for integrating MI in the classroom.

Social interactions also emerged as an important aspect of learning in a social context. All stakeholders felt the interactions they had through the SL experiences were mostly positive and rewarding. The PCT enjoyed engaging with elementary students and seeing the students enjoy the MI activities. The course instructors enjoyed their interactions with the PCT, and the CTs enjoyed seeing their students' excitement about having the PCT visit their classrooms. Constructivism believes that learning is a social activity and knowledge is constructed from the interactions with other human beings (Hein, 1991; Savery & Duffy, 1995).

Many of the perceived successes and challenges related to the course design had to do with the constructivist notion of scaffolding, which was the third major theme in this study. Scaffolding in providing a temporary support structure that can be removed later and is typically associated with the social constructivism of Vygotsky (van de Pol,Volman, & Beishuizen, 2010). Scaffolding is often presented as an effective instructional method (e.g., Cole 2006; Hogan & Pressley, 1997; Pawan, 2008). Student support should be considered and integrated into course design (Thorpe, 2002). Support for student learning is a key element in facilitating student learning experiences (Lee, Srinivasan, Trail, Lewis, & Lopez, 2011). Student support is needed to help students achieve learning goals and objectives successfully (Curley & Strage, 1996). PCT in the present study felt most successful when they felt supported by the course instructor, the SL placements, and each other.

A strength of this study is its examination and triangulation of multiple stakeholders' (PCT, CTs, and course instructors) perspectives of MI-related SL experiences. In addition, the data are robust given the themes were drawn from three consecutive semesters during which the course was implemented. This study also has limitations. The dual role of the instructors/researchers presents a possible conflict of interest. During the first semester of data collection, the course instructor conducted several of the focus group interviews. This protocol was changed after the initial semester so that an outside interviewer conducted the interviews to allow for the PCT to provide more authentic responses. While the initial interviews were included in the data analysis steps were taken to seek an optimal balance between researcher and teacher educator roles, by not including the interviews in the academic grade, the interviews were conducted at the end of the semester, and the PCT were encouraged to be honest in order to provide feedback to improve the course. An additional limitation was that it was not possible to verify the treatment. However, evidence collected suggests that even with differences between different CI, which the outcomes were the same, and by employing a constructivist framework meaning is unique to each individual's experiences. Furthermore, careful attention was given to employing multiple strategies to ensure trustworthiness of the data, which strengthens the study's potential to make an important contribution to the literature and inform the continued development and integration of SL in preservice programming related to school-based PA promotion.

In conclusion, this study adds to the developing line of research that examines the use of university SL as a method to both prepare preservice teachers for PA promotion roles as well as support school professionals in implementing PA programming. Overall,

the findings suggest that elementary classroom-based SL experiences guided by constructivist principles can facilitate learning to integrate movement and provide beneficial and positive experiences for all of the stakeholders. Providing opportunities for learner ownership, learning embedded in social contexts, access to authentic environments, and reflection, as well as promoting mutual benefits for stakeholders appear to be important elements of instructional design in university coursework aimed at preparing future elementary CTs for school-based PA promotion. Seeing the benefits of MI for elementary students firsthand and discovering that MI is easy to learn may be powerful motivators for both preservice and inservice CTs to want to adopt and continue using MI.

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Table 3.1 *Participant demographics*

(N = 183)	PCT (N = 172)	CT (N = 7)	Course Instructor (N = 4)
Age in years M(SD)	20.98(3.25)	33.8(11.32)	32.75(8.06)
Gender N(%)			
Female	167(97.11)	6(85.7)	3(75.0)
Male	5(2.9)	1(14.3)	1(25.0)
Ethnicity N(%)			
African-American	12(7.0)	1(14.3)	-
Asian	1(<1.0)	-	1(25.0)
Hispanic	3(1.7)	-	-
White Caucasian	156(91.0)	6(85.7)	3(75.0)
Education N(%)			
Freshman	1(<1.0)	-	-
Sophomore	95(55.2)	-	-
Junior	29(16.9)	-	-
Senior	48(27.9)	-	-
Bachelors	-	3(42.9)	-
Masters	-	4(57.1)	4(100)
K-12 years teaching N(%)			
0-5	-	2(28.6)	1(25.0)
5-10	-	2(28.6)	2(50.0)
11-15	-	1(14.3)	-
16-20	-	-	1(25.0)
21-25	-	1(14.3)	-
26-30	-	-	-
30+	-	1(14.3)	-

Note: PCT = Preservice Classroom Teacher; CT = Classroom Teacher.

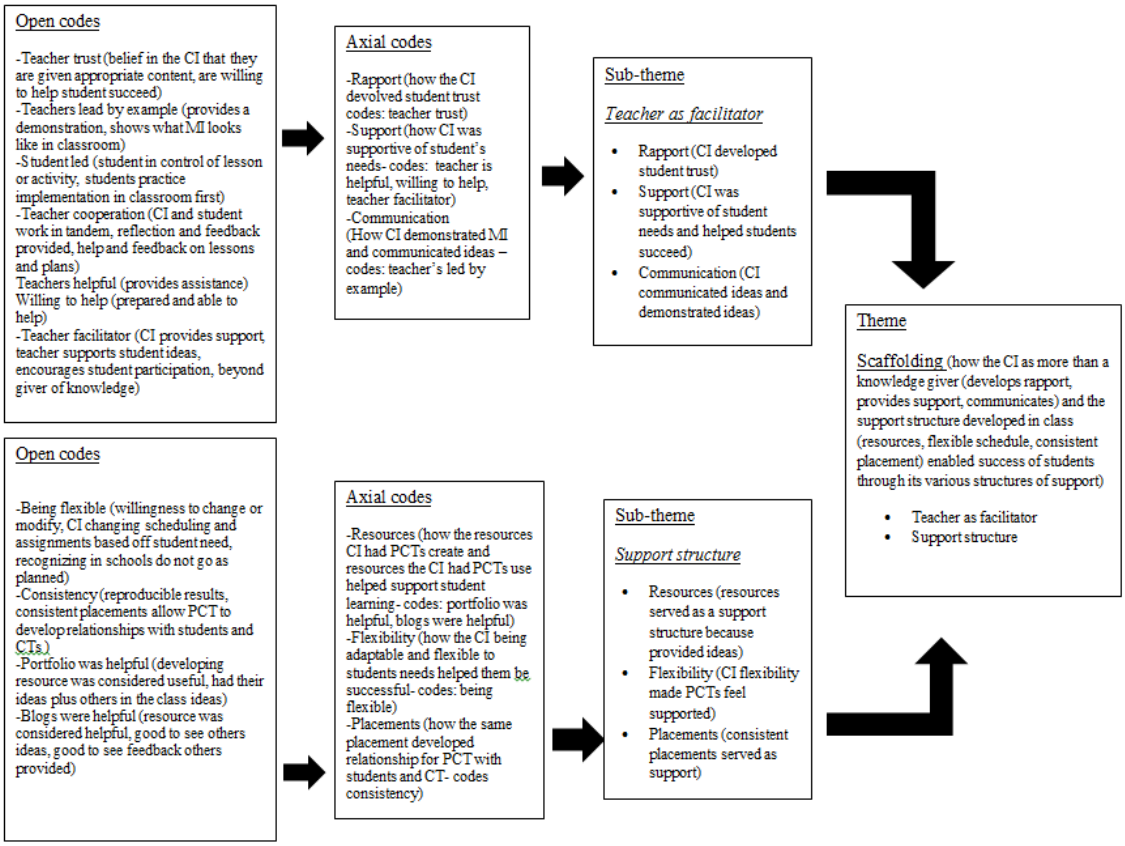

Figure 3.1 Data coding reduction example

CHAPTER 4

A constructivist-oriented distance education course with service-learning to prepare preservice classroom teachers as physical activity promoters[2]

[2] Michael, R., Webster, C. A., Nilges, L., Brian, A., Johnson, R., Carson, R. L., & Egan, C.A. To be submitted to American Journal of Distance Education.

Abstract

Previous research has not explored the potential of distance learning to prepare preservice classroom teachers (PCTs) for promoting children's physical activity. The purpose of this study was to (a) examine the perceptions and experiences of PCTs, inservice classroom teachers, university instructors, and elementary students who were involved in a semester-long distance delivery course that included a service-learning (SL) component with an emphasis on classroom movement integration (MI). The course was designed using a constructivist orientation and in accordance with recommended best practices for distance education, SL, and MI. Using a qualitative single case study design, interviews, observations, and artifacts (e.g., PCTs' reflections and academic work) were thematically analyzed. Findings produced three themes including student-centered approach (teacher as facilitator), benefit/importance of physical activity (future implementer, enjoyment of the real world, and I don't like to sit), and connect and reflect (sharing new ideas, and communication) that showed that participants' perceptions and experiences support constructivist-guided SL using a distance delivery design. This study adds to the emerging research base on school-university partnerships to support schools in the implementation of comprehensive school physical activity programming.

Keywords: Student teaching, practicum, online education, field experiences, comprehensive school physical activity program, movement integration

While regular participation in physical activity (PA) has many benefits for children (Janssen & LeBlanc, 2010); the majority of children in the United States do not meet PA guidelines (Troiano et al, 2008). The current national guidelines specify that children should be physically active at least 60 minutes each day (US Department of Health and Human Services, 2008). The Institute of Medicine (IOM, 2013) identifies schools as a key setting to help children achieve this goal. Although physical education continues to be an important part of school PA programming, limited curriculum time in physical education has created a need to embed PA opportunities in additional contexts before, during, and after school (IOM, 2013). The Centers for Disease Control and Prevention (CDC, 2013) and The Society of Health and Physical Educators (SHAPE) America (2015) recommend that schools implement comprehensive school PA programs (CSPAPs), which include (a) physical education, (b) PA during school (beyond physical education), (c) PA before and after school, (d) staff involvement, and (e) family and community engagement. A CSPAP is conceptualized as a coordinated effort among all school professionals, families, and community stakeholders (CDC, 2103; IOM, 2013).

As part of the National Physical Activity Plan (www.physicalactivityplan.org), teacher education programs are called upon to prepare future educators to deliver effective PA programs, such as CSPAPs. Such preparation must encompass training not only for future physical education teachers, but also for future classroom teachers so that the vision of a coordinated school wide PA program can be realized. Among school professionals, classroom teachers have unparalleled access and reach to influence children's behaviors, including their participation in daily PA. In elementary schools, the vast majority of staff is classroom teachers, whose job profile involves teaching children

math, English Language Arts, science, and social studies (and sometimes health, physical education, and other related arts subjects), communicating with parents, and often supervising recess and leading before and after school programs. The support of classroom teachers in a CSPAP is therefore considered critical to the success of the program (Hills, Dengel, & Lubans, 2015).

Research on preservice classroom teachers (PCTs) as potential PA promoters has shown that teacher education programs can provide an effective platform for fostering attributes that are important predictors of teachers' PA promotion (Goh, et al., 2013; Webster, 2011; Webster, Erwin, & Parks, 2013; Webster, Monsma, & Erwin, 2010). For instance, PCTs who had taken a semester long (16-week) course on school PA promotion for classroom teachers had higher perceived competence to teach physical education and to promote PA in the classroom setting, at recess, and in before and after school programs than PCTs who had not taken the course (Webster, et al., 2010). In a follow-up investigation, Webster (2011) found that PCTs who were enrolled in the above-mentioned PA promotion course demonstrated positive changes from the beginning to the end of the semester in their attitudes toward promoting PA and their perceived competence to teach physical education and promote PA. Attitudes and perceived competence play key roles in teachers' PA promotion behaviors. In a study with physical education teachers, attitude explained the most variance (compared to subjective norm, perceived behavioral control, and self-efficacy) in the teachers' intentions to teach physically active lessons (Martin, Kulinna, Eklund, & Reed, 2001). Additionally, perceived competence to promote classroom-based PA was the strongest contributor (compared to satisfaction with personal experiences in physical education, perceived PA

competence, and self-reported PA) to classroom teachers' self-reported PA promotion in the classroom setting.

Despite the documented benefits of teacher education coursework for PCTs' learning to take on school PA promotion responsibilities, continued research is needed to understand the potential of varied educational approaches for preparing PCTs as PA promoters. In the present study, we explored a constructivist-oriented distance education approach with a service-learning (SL) component as a possible way to simultaneously extend the reach of CSPAP-related professional preparation for PCTs and expand the support a university can provide to teachers who are called upon to implement school wide PA programming. Webster, Beets, Weaver, Vazou, and Russ (2015) emphasize the importance of external support systems, including university SL, in supporting the successful implementation and sustainability of CSPAPs. Thus, the present study was an effort to address the potentially mutual benefits of the course for PCTs as well as for the teachers and students who participated in the SL component.

Constructivist-oriented Distance Education

Constructivist learning places the student as the central focus in the learning process (Bruner, 1960; Dewey, 1916; Piaget, 1970). Constructivists believe that individuals create new understandings based on an interaction between what they already know and believe and knowledge from which they come into contact (Resnick, 1989). Key components of constructivist classrooms are (a) student-centered, (b) use a process approach, (c) interactive, (d) democratic (e) power and control are shared, and (f) involve negotiation (Gray, 1997).

Constructivist teaching principles include (a) giving the learner ownership over the process used to develop solutions to problems, (b) encouraging testing ideas against alternative views, (c) designing the task and learning environment to reflect the complexity of the actual environment that PCTs should be able to function in at the end of the structured learning experience, (d) providing opportunity and support for reflection on both the content learned and the learning process, and (e) providing opportunities for students to connect learning to their own knowledge (Hein, 1996; Savery & Duffy, 1995).

Moore and Kersley (2011) define distance education as "teaching and planned learning in which teaching normally occurs in a different place from learning, requiring communication through technologies as well as special institutional organization" (p.2). Distance education in higher education continues to grow with almost one third of students in higher education (approximately 6.7 million students) taking at least one online course (Allen & Seaman, 2012). Distance education can be classified as synchronous or asynchronous. Synchronous distance education is location and time dependent (Bernard et al., 2004). Video conferencing is a common example where participants are at a set location at a set time. The idea is to mirror traditional classroom instruction. In asynchronous distance education, students are not synchronized with peers or the instructor and communication is largely by email or other communication technology (e.g., Skype, Google Hangouts, discussion boards; Bernard, et al., 2004). Asynchronous distance education is effective at promoting a learner-centered environment by supporting interpersonal interactions, both between teacher and students and between students and their peers (Bates, 1997). Additionally, asynchronous distance education promotes high levels of student engagement with text-based communication

(Johnson, Aragon, Shaik, & Palma-Rivas, 2000; McDonald & Gibson, 1998). It is suggested that this is because the technology used to support asynchronous distance education can help to foster critical thinking and reflective practice, and because the asynchronous model allows time for reflection and revision, and leads to better understanding of course content (Boyd, 1990; Dehler & Porras-Hernandez, 1998).

Complaints about distance education are that courses are unable to replicate the social attributes of face-to-face instruction or the adaptive interaction with instructional content that teachers in a face-to-face setting can achieve (Barab, Thomas, & Merrill, 2001). However, research has found cognitive achievement in distance education to be comparable to traditional education, and in some cases better (Barker & Platten, 1988; Barry & Runyan, 1995). A suggested reason for this is that technology creates new opportunities for distance education courses that afford increased instructional and social interaction (Barab, Thomas, & Merrill, 2001).

Constructivist theories of learning have become a more prominent feature of distance learning. Herrington and Oliver (1999) state that important learning can be accomplished using computer technology when it is situated within the social, cultural, and physical context of the learner, and the activities are authentic and practical. Technology has moved away from traditional instructional practices in the classroom and from a distance (Turoff, 1995) and moved in a direction toward a more resource-based approach that deemphasizes the teacher as the main source of knowledge (Gunawardena, 1992). This view within distance education aligns itself with constructivism (Crotty, 1994). Jonassen, Davidson, Collins, Campbell and Haag (1995) emphasize that "constructivist environments engage learners in knowledge construction through

collaborative activities that embed learning in a meaningful context and through reflection on what has been learned through conversation with other learners" (p. 12). Asynchronous discussion centers around the development of knowledge-building communities where students share information and reflect on the knowledge that they have constructed, and the processes that they used (Jonassen, 2000). More recently, Toven-Lindsey, Rhoads, and Lozano (2015) found that most massive open online courses (MOOC) have a tendency to use an objectivist-individual approach with only small examples of constructivist and group approaches, which raises questions about how much technology is actually revolutionizing higher education. Their recommendations are to focus on incorporating more creative and empowering forms of online learning.

CSPAP-related SL for PCT

SL falls under the umbrella of experiential learning. Furco (1996) distinguishes SL by its "intention to benefit equally the provider and the recipient" as well as its equal focus of "service and learning". Bringle and Hatcher (1995) define SL as

> Course-based, credit-bearing educational experience in which students (a) participate in an organized service activity that meets identified community needs and (b) reflect on the service activity in such a way as to gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of civic responsibility (p. 112).

SL complements the goals of constructivism by emphasizing interaction in the acquisition of knowledge (Brady, 2004) and is consistent with a student-centered approach to learning (Savery & Duffy, 1995). Real world context is also an important component of both SL (Carver, 1999) and constructivist learning environments

(Cunningham, Duffy, & Knuth, 1993; Knuth & Cunningham, 1993). SL enhances distance learning by promoting a student-centered approach. A student-centered approach are found in both SL and constructivism and as a key component of distance learning principles by promoting the role of teacher as facilitator, and giving the learner control of pacing (Janicki & Liegle, 2001). Janicki and Liegle (2001) compiled a list of ten concepts that support web-based instruction: (a) teachers as facilitators, (b) use of a variety of presentation styles, (c) multiple exercises, (d) hands-on problems, (e) learner control of pacing, (f) frequent testing, (g) clear feedback, (h) consistent layout, (i) clear navigation and (j) available help screens. Many of these instructional strategies are structural in nature; however, the student-centered approach is at the center of SL and constructivism.

Based on a national survey, service-learning is introduced to preservice teachers in the majority of teacher education institutions (59%), while 37% prepare their teacher candidates to use service-learning as a teaching method (Anderson & Erickson, 2003). As of 2011, about one in three students in higher education have taken at least one online course (Allen & Seaman, 2012). SL has a positive effect on university students' personal growth and development, especially related to a sense of personal efficacy (Eyler, Giles, & Braxton, 1997; Keen & Keen, 1998), personal identity (Eyler & Giles, 1999), spiritual growth (Soukup, 1999), and moral development (Boss, 1994; Gorman, 1994). Students and faculty report that SL improves students' ability to apply their learning to real-world settings (Eyler & Giles, 1999; Kendrick, 1996). Students in SL had higher scores on the state test of basic skills (Schumer, 1994). In the context of teacher education, preservice teachers typically engage in SL with schools by developing and implementing SL

projects as part of university practicums and student teaching (National Service-Learning in Teacher Education Partnership, 1998). Glazier, Able, and Charpentier (2014) examined the impact of SL on PCT and found that PCTs (a) sought similarities between their school and home experiences and those of the diverse students with whom they worked, (b) held deficit views of participants, (i.e., an "us" and "them" mentality) and (c) developed a view of difference that overrode a deficit view in some cases. Furthermore, inservice teachers report satisfaction with pupil participation (Beck & Kosnik, 2000), schools report enhanced university relations (Driscoll, Holland, Gelmon, & Kerrigan, 1996), and university faculty using SL report satisfaction with the quality of university student learning (Ward, 2000).

Carson and Raguse (2014) provide a comprehensive systematic review of SL in youth PA settings. For PCTs and physical education teacher education, observation of models enhanced teaching, and organization and management improved (Baldwin et al., 2007; Culp et al., 2009; Galvan, 2010; Galvan & Parker, 2011; Hodge et al., 2003; Meaney et al., 2008). Two studies related to in-service teachers indicated that in-service teachers benefitted from SL through the observations of new teaching strategies and increased enthusiasm (LaMaster, 2001; Massey-Stokes & Meaney, 2006). In-service teachers were also supportive of SL due to the perceived benefits of student outcomes (e.g., increased motivation and individualized attention). Massey-Stokes and Meaney (2006) expressed the teacher's desire for increased communication between collaborating groups. However, little research has specifically examined SL as part of teacher education initiatives to prepare preservice teachers for CSPAP roles. Webster, Nesbitt, Lee, and Egan (in press) examined preservice physical education teachers' SL

experiences aligned with CSPAP recommendations. Participants' successes, challenges, and lessons learned revolved around outcomes with youth, parents, and staff (e.g., SL should be designed to all preservice physical education teachers to build rapport with those receiving the service), communication (e.g., CSPAP-related service learning should be designed to ensure effective communication is established and maintained between university and field site personnel), preparation and planning (e.g., contingency planning is an important part of successful SL implementations), and priorities and possibilities (e.g., CSPAP-related SL experiences should be strategically placed within the program of study to afford long-term engagement in the field).

Purpose of the Study

Investigation into the use of SL in distance education is limited. Soria and Weiner (2013) examined the effects of SL in a distance education course on technical writing. A positive association was found between participation in SL and desired technical writing outcomes. Also, qualitative data revealed that SL supported constructivist-aligned learning in that it helped students to draw links to the real world, connect with their audience, and develop a sense of purpose in their writing. However, no studies have explored the use of SL in the context of a constructivist-guided distance education course focused on preparing PCTs for CSPAP roles. The purpose of this study, therefore, was to examine stakeholders' (i.e., PCTs, the course instructor, elementary classroom teachers, and elementary students) perceptions and experiences with respect to participating in an asynchronous constructivist-oriented distance education course with a SL component. The specific research questions were:

1. What impact did the SL experiences implementing MI have on the various stakeholders?
2. What elements of the constructivist-guided course design and the distance delivery platform facilitated or hindered the SL experiences?

Methods

Study Design

A qualitative single case study design was used in this study, consistent with recommendations by Yin (2014), who states that this approach is fitting in several conditions, including when (a) the investigation questions focus on the "how" and "why" behind a social encounters (b) the researchers search for start to finish information about the occasion being considered, and (c) the examination focuses on genuine connection. This study focuses on the connection and experiences of various stakeholders regarding university SL, via a constructivist-guided distance delivery course, to support MI in elementary school classrooms.

Participants and Setting

Participants included (a) nine PCTs enrolled a distance delivery course at a large university in a mid-sized city in the southeastern US, (b) the course instructor, (c) four elementary classroom teachers who hosted the PCTs during SL assignments (see section on the university course below), and (d) 30 elementary students at the schools where the PCTs conducted their SL assignments. The PCTs included eight females and one male (1 African-American, and 8 Caucasian) whose ages ranged from 22 to 29 ($M_{age} = 24.4$). All of the PCTs were fourth year students completing their final student teaching internship semester. None of the PCTs reported any previous experience with CSPAP

implementation. The course instructor was a 41-year old Caucasian male who had designed the course, taught it both semesters it had been offered (Fall 2015 and Fall 2016), and taught the face-to-face version of the course 11 times since 2006. The classroom teachers included four females (1 African American and 3 Caucasian) whose ages ranged from 28 to 49 years old (M_{age} = 37.8). Of the four CTs interviewed, two reported having CSPAP-related training (1 from undergraduate teacher education and 1 from an inservice professional development workshop). The 30 elementary students (8 African-American, 4 Hispanic, and 18 Caucasian) included 13 females and 17 males whose ages ranged from 7 to 10 years old (*Mage* = 8.23).

The Distance Learning Course

The course was developed to meet best practice recommendations for distance learning, school-based PA promotion, and SL. The first author's university uses the Distributed Learning Quality Assurance Standards for Faculty (A. Haynes, personal communication, July 25, 2016) checklist, adapted from the fifth edition (2014) Quality Matters Rubric, to guide best practices in distance education. The checklist consists of 49 items in eight categories describing the criteria to be met. The eight categories within the rubric are (a) course overview and introduction, (b) learning outcomes/objectives, (c) assessment and measurement, (d) instructional materials, (e) course activity and learner interaction, (f) course technology, (g) learner support, (h) usability, and (i) accessibility. Of the 49 items, 26 of them are required and must be included within the course offered in order to meet the university requirement for being a distributed learning course.

The course lasts for half of the fall academic semester (eight weeks) and situates PCTs amid current policies, research, and recommendations related to the role of schools

in PA promotion. The major focus of the course is on the strategies classroom teachers can use to increase children's daily PA. Primary emphasis is placed on integrating movement opportunities in elementary general education classrooms, which is considered a key strategy within a CSPAP (Webster, Russ, Vazou, Goh, & Erwin, 2015). Movement integration (MI) is a strategy where PA, at any level of intensity, is incorporated into regular classroom time during routine transitions, as part of academic lessons, or by providing PA breaks (Parks, Solomon, & Lee, 2007; Webster, et al., 2015). MI can take many forms (Kohl & Cook, 2013). Russ et al., (2015) developed the System for Observing Student Movement in Academic Routines and Transitions (SOSMART) for observing and categorizing student movement in the academic classroom. Five of the most frequently occurring examples of student movement were as a result of (a) non-teacher directed transitions (e.g., incidental movements occurred) (b) teacher-directed transitions, (c) non-academic teacher-directed movement breaks, (d) academic-infused teacher-directed movement breaks, and (e) technology-led teacher-infused transitions or movement breaks (e.g., Go Noodle or YouTube videos) (Russ, et al., 2015). School-based research on MI has shown that it can have many benefits for children. For instance, MI has been shown to increase moderate-to-vigorous PA (Bartholomew et al., 2011; Beighle et al., 2010; Erwin et al., 2011; Goh et al., 2014; Mahar et al., 2006), improve on-task behavior (Mahar et al., 2006; Mahar, 2011), enhance cognitive function (Donnelly & Lambourne, 2011; Howie, Newman-Norlund, & Pate, 2014), increase standardized test scores (Vazou & Smiley-Oyen, 2014), increase enjoyment (Donnelly et al., 2009; Howie et al., 2014; Vazou et al., 2012), increase perceived competence in the classroom (Vazou

et al., 2012), and decrease sedentary time (Mantis, Vazou, Saint-Maurice, & Welk, 2014; Salmon et al., 2005).

The course is divided into two four-week modular phases. The first phase of the course focuses on the current landscape of policy, guidelines, research, and recommendations related to promoting children's PA, with an emphasis on the school setting and a primary focus on general education classrooms. PCTs watch PowerPoint presentations, read literature related to school PA promotion, take weekly quizzes, and respond to instructor-generated reflection questions by posting their responses to these questions, and to each other's posts, using the course discussion board on Blackboard. The second phase of the course focuses on preparing and implementing school-based PA promotion assignments for the SL component. The SL component is consistent with current standards of practice, which include placing students in authentic learning environments (e.g., community partnerships), curriculum integration, progress monitoring, and opportunities for reflection (K-12 Service-Learning Standards for Quality Practice, 2008). PCTs are given opportunities to apply evidence-based and nationally recommended school-based practices for helping children to meet PA guidelines. Specifically, PCTs prepare plans and implement strategies for (a) advocating for children's school-based PA with school professionals and (b) increasing children's school-based PA at recess and in general education classrooms. During this phase of the course, PCTs also participate in an online community of practice called Move for Thought (moveforthought.ning) designed for PCTs and inservice classroom teachers. Participation involves responding to instructor-generated reflection questions using the website forum and responding to forum posts by other community members on the

website. Furthermore, PCTs are assigned to small groups and participate in a group videoconference call with the course instructor during each module. At the end of the course, PCTs take a comprehensive exam on the course material.

Constructivist learning and teaching principles guide the delivery of the content and learning experiences in the course. An important feature of a constructivist learning environment is that it should give students ownership of the learning experience through opportunities for decision-making. Therefore, PCTs select academic content (with guidance form the course instructor and classroom teachers) and PA promotion strategies for their SL assignments. Constructivist pedagogy should also engage students in activities that enable them to evaluate alternative solutions as a means of testing their understanding of course material. The course accomplishes this by having the PCTs develop variations in their PA promotion strategies (e.g., classroom movement breaks) to allow for differentiation, as well as by having PCTs engage in written reflection and group discussion that focuses on considering alternative strategies for implementing PA promotion strategies. Another key aspect of constructivism is that learning should be embedded in realistic and relevant contexts. The SL experiences in which PCTs engage support this constructivist principle by situated PCTs' learning in real world elementary school settings. Furthermore, constructivism places substantial emphasis on the social context in which learning occurs. The online community of practice (Move for Thought), the online discussion threads, the weekly videoconference calls in the second modular phase of the course, and the in situ implementation of the SL assignments in elementary schools are all components of the course that promote learning through socialization and interaction with others. An additional feature of constructivist-oriented instructional

design is that it should encourage multiple modes of representation. The various assignments in which PCTs are asked to produce work (e.g., write reflective posts in the discussion threads, create written plans to implement the SL assignments all PCTs to express their understanding of course content using multiple modalities. Finally, a constructivist pedagogical approach should challenge students' existing beliefs and understandings through meaningful, stimulating, interesting, and relevant instructional tasks. In tandem with this approach, the instructor's reflection prompts in the discussion threads ask PCTs to reflect on current research trends, their own prior experiences and knowledge, and their observation and SL implementation experiences in the course to construct personal meaning about the value of school-based PA and they might promote PA in the future as a classroom teacher.

Course Calendar

Module 1. The topic of the week was PA guidelines, trends, and recommendation. A lecture was posted on the online delivery system and PCT were to complete the module one discussion thread that included "Based on your recess observations during this module, briefly discuss potential factors that might support or hinder children's physical activity participation at recess. Be sensitive to aspects of both the physical environment and the social environment in your response." An additional online discussion thread included "Content relevance is the idea that the subject matter you learn in a class relates in meaningful ways to your personal/professional experiences, interests, and goals. In what ways do the readings and the lecture for this module relate to your experiences as a student (elementary, secondary, and/or college) and/or as a teacher (preservice and/or inservice)?" PCTs were responsible for responding to three other

student reflection posts. PCT also conducted an observation of four scheduled recesses. An online quiz was submitted through an online learning portal.

Module 2. The topic of discussion was a whole-of-school approach to PA promotion. Online discussion prompts included "Considering how the Institute of Medicine (2013) defines quality physical education as part of a CSPAP, evaluate the 3 physical education lessons you observed for Module 2 of this course. Please provide specific examples of what you observed that met, or did not meet, characteristics/criteria of a quality physical education program." The second prompt was "Thinking about the school where you are currently placed, or another school where you were recently placed, what components of a CSPAP were strongly represented? What components needed additional support? Please provide specific examples of strengths and limitations of different components." PCTs were responsible for responding to three other student reflection posts. PCT also conducted an observation of three physical education lessons. An online quiz was submitted through an online learning portal.

Module 3. Helping classroom teachers learn to promote children's physical activity was the topic for the week. A lecture was posted on the online delivery system and PCT were to complete the module three discussion thread that included the prompt

> Given the information in the PowerPoint and your readings for this module, what do you believe would be the most effective strategies to help preservice classroom teachers learn to promote physical activity? What strategies do you believe would be ideal for helping inservice classroom teachers learn to promote physical activity? What possible barriers need to be considered in developing and implementing these strategies at both the preservice and inservice levels? How

can physical education teachers help in the preparation of classroom teachers for physical activity promotion?

PCTs were responsible for responding to three other student reflection posts. PCT also conducted an observation of three physical education lessons. An online quiz was submitted through an online learning portal.

Module 4. The topic for week four was promoting physical activity at recess and in the general education classroom. A lecture was posted on the online delivery system and PCT were to complete the module four discussion thread that included the prompt

> Given the information in the PowerPoint and your readings for this module, what do you believe would be the most effective strategies to help preservice classroom teachers learn to promote physical activity? What strategies do you believe would be ideal for helping inservice classroom teachers learn to promote physical activity? What possible barriers need to be considered in developing and implementing these strategies at both the preservice and inservice levels? How can physical education teachers help in the preparation of classroom teachers for physical activity promotion?

PCTs were responsible for responding to three hours of normal classroom time in a general education classroom. PCT also conducted an observation of three physical education lessons. An online quiz was submitted through an online learning portal.

Module 5. The topic for module five was advocating for children's school-based physical activity with school professionals and promoting children's physical activity during normal classroom time in a general education classroom at an elementary school. PCTs had to prepare plans for children's school-based physical activity with school

professionals and a plan for promoting children's physical activity during normal classroom time in a general education classroom at an elementary school. The PCT had to implement the designed plans and complete the signed evaluation form on the online learning portal. The online community of practice discussion thread was

> School recess can be an excellent venue for promoting children's physical activity. Often, classroom teachers supervise their classes during recess, which means that the role of classroom teachers in children's physical activity promotion can extend to the recess environment. Some of the ideas classroom teachers use to integrate physical activity in their classrooms may be adaptable to the playground context. Also, games and activities from physical education can be played and modified during recess. The purpose of this post is to see what others have done to increase children's physical activity at recess, and to garner suggestions/recommendations about how best to help kids make active choices during this scheduled break from academics. Please share your experiences working to stimulate physical activity participation at recess, particularly from the perspective of maintaining a child-directed environment (i.e., encouraging, but not requiring physical activity).

PCTs were responsible for responding to three additional online discussion posts. PCT also participated in an online small group videoconference session with CI.

Module 6. Promoting children's PA during 4 scheduled recesses and promoting children's physical activity during normal classroom time in a general education classroom at an elementary school was the topic for week 6. PCT prepared one plan for promoting PA in the general classroom and one for promoting PA during four recess

periods for implementation. A signed evaluation of the implementations was submitted online. The online reflection question was.

> Many teachers who integrate movement in their classrooms report that math is one of the easier subject areas in which to infuse physical activity. The purpose of this discussion thread is to identify the best integrated math lessons you have taught, observed, or read about online. Please provide as much detail as possible (e.g., grade level, academic focus, materials needed, management recommendations, and physical activities).

PCTs were responsible for responding to three additional online discussion posts. PCT also participated in an online small group videoconference session with CI.

Module 7. Week seven's topic was promoting children's physical activity during normal classroom time in an elementary general education classroom. PCT planned and implemented four plans for promoting children's physical activity during normal classroom time in a general education classroom. The online reflection question included

> This week, I want to solicit suggestions about innovative physically active lesson ideas for ELA, Science, and/or Social Studies in the elementary classroom. Please share your ideas, including what you have done to integrate physical activity into one or more of these subject areas or what you have observed/learned from others.

PCTs were responsible for responding to three additional online discussion posts. PCT also participated in an online small group videoconference session with CI.

Module 8. The topic for module eight was promoting children's physical activity during normal classroom time in an elementary general education classroom. PCT planned and implemented four plans for promoting children's physical activity during normal classroom time in a general education classroom. The online reflection question included

> In South Carolina, state curriculum guidelines state that elementary children should be taught health for 75 minutes per week. Either a health educator or classroom teachers should teach the health curriculum; however, most schools do not have a health educator, so classroom teachers are expected to assume this responsibility. The purpose of this post is to solicit ideas for integrating physical activity into classroom health lessons. Please share what you, or others you have observed, have done to increase children's physical activity when teaching health.

PCTs were responsible for responding to three additional online discussion posts. PCT also participated in an online small group videoconference session with CI.

Data Sources

Sources of data for the study included post-semester interviews and artifacts from the course.

Interviews. All interviews conducted for this study were held after the university semester and grading period had ended, were audiotaped and transcribed verbatim for analysis, and followed a semi-structured format (Rubin & Rubin, 2011; Thomas et al., 2015) in which interviewers asked predesigned questions, followed by planned and unplanned prompts to direct participants to provide more in-depth responses. PCTs, elementary classroom teachers, and the course instructor participated in individual

interviews (Rubin & Rubin, 2011; Thomas et al., 2015). Four of the nine PCTs volunteered to participate in interviews after the university semester and grading period ended. Interviews with PCTsranged from 16 to 29 minutes (*M* = 22:43) and were conducted by telephone. Questions were used to understand the PCTs' experiences in the course, especially related to the SL component. PCTs were asked about their perceptions of accomplishment, difficulties, and significant take home messages in connection to SL with emphasis on MI, as most SL assignments focused on classroom-based PA promotion. Example questions include: "Describe your feelings related to integrating movement opportunities for children in the general education classroom setting" and "Describe your experience as a whole this semester with the distance delivery method of learning to integrate movement for children in the general education classroom setting."

Four of the nine classroom teachers involved in the SL component of the course volunteered to participate in phone interviews. These interviews ranged from 11 minutes to 18 minutes (*M* = 13:00). The interview focused on the teachers' experiences related to the SL component of the course and included questions that focused on participants' likes, dislikes, successes, and challenges, major take home messages, and suggested areas for improvement. The interview with the course instructor lasted for 30 minutes. The interview focused on the experiences related to the SL component of the course and included questions that focused on successes, challenges, major take home messages, and suggested areas for improvement that related to using distance delivery and SL as approaches to preparing PCTs to implement MI. Example questions include "Describe your experience participating in service learning experiences related to movement

integration this semester?" and "What impact did the experience have on you in order to use classroom-based PA in the future in your class?

Elementary school students participated in focus group interviews to explore their perceptions of the MI opportunities led by the PCTs. Interview questions were adapted from the PCT and classroom teacher interview guides to include developmentally appropriate language for elementary children. Seven focus group interviews were conducted in three classrooms. Focus groups contained between 3 and 5 students and interviews ranged from 6 minutes to 13 minutes (M = 8:26). Questions examined the children's experiences about having a university student come to class and incorporate MI. Example questions include "tell me about what you thought of the activities that you did when (service learner) came to class" and "tell me about the kinds of activities that you do in class with (Classroom teacher)."

Artifacts. Artifacts collected included PCTs' MI implementation plans, online discussion threads, notes the first author took as a passive participant during the videoconference calls, and emails between the PCTs and the course instructor.

Fidelity of Course Delivery

The extent to which the course was delivered consistent with its design was measured using a fidelity checklist (Bond, Becker, & Drake, 1997). The checklist was developed and adapted using Saunders, Evans, and Joshi's (2005) elements of a process evaluation plan categories (i.e., quality, completeness, exposure, and satisfaction). The first author completed the checklist using the artifacts mentioned above and reviewing the PowerPoints, posted readings, quizzes, and exam.

Data Analysis

Data analysis was guided by constant comparison methods (Dey, 1993; Goetz and LeCompte, 1981) and included an iterative procedure of reducing and triangulating the data to pull out the themes (Patton, 2002). Constant comparison is important in developing a theory that is grounded in the data (Glaser & Strauss, 1967). The constant comparative method can be described in four stages: (a) comparing incidents applicable to each category, (b) integrating categories and their properties, (c) delimiting the theory, and (e) writing the theory (Glaser, 1965). Constant comparison is linked with theoretical sampling. For this study, data were analyzed using an iterative process that involved reviewing the data sources numerous times, coding them by topic and focus, comparing them and looking for patterns and themes (Saldana, 2009). Themes were an outcome of coding, categorization, and analytic reflection (Saldana, 2009, p. 13).

Trustworthiness was accomplished several ways, based on established recommendations (Glense, 2016; Lincoln and Guba, 1985; Patton, 2002; Prasad, 2005; Shenton, 2004). First, the use of multiple data sources permitted triangulation of the information as an approach to increase the credibility of the findings. Second, data were gathered at multiple time points to help ensure that the findings thoroughly and accurately reflect challenges and successes experienced by the participants. Third, researcher triangulation was utilized to expand the confirmability of the findings. Following his own analysis, the first author asked the last author to read the transcripts, review the coding procedure, and independently analyze the data. The two authors then discussed discrepancies in the narrative and coding process until reaching consensus. Fourth, detailed information was provided about the participants, the course, and the

school contexts to allow readers to decide whether or not the findings have transferability to other settings. Finally, the data collection procedures and protocols are reported to allow for replication of the study, thereby increasing its dependability. Pseudonyms were assigned to protect the privacy of the participants.

Findings

Fidelity of Course Delivery

Program fidelity was measured using a fidelity checklist (Figure 1) in order to monitor and document program implementation (Saunders et al., 2005). This study documented program quality, dose delivered (completeness), and dose received (satisfaction).

Program quality. Program quality is the extent to which a program is implemented as planned. The course syllabus was analyzed for program quality. The course syllabus thoroughly detailed the plan for course implementation. Each section of the course was divided into 8 learning modules, which contained all learning objectives and assignments that corresponded with the module objective. The following artifacts were used to verify completion of the stated objectives (a) the discussion threads (Blackboard and Move for Thought), (b) the signed implementation plans, and (c) the interview transcripts.

Dose delivered (completeness). Dose delivered (completeness) is the amount of intended units of each component provided. This is used to ensure that all components of the program are delivered (Saunders, et al., 2005). A document analysis of the course syllabus resulted in a schedule for course requirements and the due dates (see Table 1).

PCTs turned in implementation plans that were signed by their host CTs to provide evidence that observations and implementations were completed.

Dose received (satisfaction). Dose received describes participant satisfaction with the program and interactions with staff and/or investigators (Saunders et al., 2005). Satisfaction evidence was collected through the stakeholder interviews. PCTs were generally satisfied with the course. Liz said, "I liked the way that it was structured as far as the modules go where we, we had to learn everything before we actually implemented it that was great." However, a key recommendation that came out of the interviews was that the course would be better if it were moved from the last eight weeks of the student teaching internship to either the first eight weeks or to the semester before. Martin said,

> I guess I just felt like I was scrambling the last three weeks, basically just juggling knives and chainsaws the whole time, and it just seems really difficult. I didn't have any problems with the course, it was just the timing and how it just basically started right at the middle of the semester when everything is getting crazy.

Themes

Stakeholder responses produced three themes: (a) student-centered approach, (b) benefit/importance of PA, and (c) connect and reflect. Themes and subthemes are discussed below using quotes from data sources as evidence. Pseudonyms are used in place of participants' actual names.

Student-centeredness

Student-centeredness reflects principles of a student-centered approach to learning and the subtheme was teacher as facilitator. The course provided a student-centered

learning environment for PCTs. Carl indicated his role as the course instructor was primarily that of a facilitator:

> My experience with the service learning part was purely constructing the assignments that people had to complete, providing any input or feedback on people's service learning plans, and grading people on their completion of the implementation of those plans based on making sure that they had a teacher at their school sign off that they had done the implementation and then discussing the service learning experiences through Skype with all of the students in smaller groups.

An example of Carl's facilitation was his decision to change the due dates for assignments when it became apparent during the early Skype sessions that some of the PCTs were having difficulty getting all of the scheduled assignments completed on time due to their busy, and sometimes unpredictable, student teaching schedules. Carl offered PCTs the alternative of submitting all of their remaining assignments by the end of the semester, rather than at the end of each week as indicated on the course syllabus. In his interview, he said,

> All of the students in the class were doing some kind of a student teaching internship and so, I felt that if they weren't able to carry out an implementation they were asked to do in a given module by the due date that was stated on the syllabus that I would give them extra time to do that.

This alternative worked well for the PCTs who needed more flexibility. Sammy said,

> One of the things that [the professor] did was extend the requirement of when the implementation is done. For example, some of us, after two solid weeks for the internship class, we were then able to stack up all the requirements for the course in the following two weeks.

The decision to make the deadlines more flexible benefited the students and allowed them to control the pace of how the assignments were completed. However, this caused a little discontinuity for Carl in terms of grading all of the assignments turned in at the end of the semester. Also, some students were not able to contribute as fully or meaningfully during the Skype discussions if they had not completed the assignments that would have been due that week before the deadline was changed.

Another aspect of student-centeredness was the large degree control PCTs had over the content for their SL assignments. PCTs liked the ability to choose where they could implement assignments. Liz said,

> I thought that it was good that we were able to implement in our own classrooms what was required of us so we didn't have to go into different classrooms. We were able to, with the knowledge of our children, implement the lessons that we knew or the activities that they were capable of and things that would satisfy them and their needs.

The CI Carl stated. “Well, it is an asynchronous Distance Delivery Platform so, students can complete different assignments to some extent at their own pace…”

Benefits/importance of PA

Benefits/importance of PA was a common theme whereby stakeholders realized or reinforced the value and importance of classroom PA or experienced positive outcomes as a result of PA. The subthemes included (a) future implementer, (b) enjoyment of the real world, and (c) I don't like to sit.

Future implementer. Future implementers are PCTs and inservice classroom teachers who plan to use MI in their classrooms in the future. Carver (1996) suggests that providing mechanisms for connecting experiences to future opportunity allows students to develop skills and knowledge that will be useful in the future. PCT saw themselves implementing PA in their classrooms when they are inservice teachers. One of the PCTs, Hannah, said in a discussion board post,

> Before this class, I probably would not have incorporated physical activity as much because I thought it was more for the physical education teacher. I'm glad this course helped to change my views, and I now will make sure to incorporate physical activities in my classroom as much as possible.

PCTs also they believed their host CTs were likely to implement MI after participating in the SL experiences. In her interview, Missy mentioned she had told her host CT about the statewide policy that public elementary schools should be providing children with 90 minutes of PA beyond physical education each week. Missy said, "[My host CT] thought it was interesting that [PA] it is actually a requirement now and that the state wants the kids to be more physically active in a classroom so I believe she's going to

use it more." CTs' interview data confirmed that this was the case. For example, when Karen was asked whether she would be more likely to continue using classroom based physical activity in her class in the future, she responded, "Very likely."

Enjoyment of the real world context. Implementing MI in actual elementary school classrooms provided many successes related to elementary students' enjoyment. Children liked having PCTs visit the classroom to lead activities and lessons. Morgan said, "I pretty much liked everything because it was fun." Classroom teachers liked that the children were happy and engaged. Jessica said about the PCTs who visited her classroom, "They do great job. Kids love them when they come in, they love the movement." PCTs liked that the children were out of their seats, moving, and having a good time while learning at the same time. In her interview, Katie said, "The kids were so excited to have movement. They were always happy to be up out of their desks and moving around the classroom. That was the most enjoyable part about this course." The CI reported that the PCT responded positively to the course. Carl said "Overall they were positive I guess from the perspective of students seeming to be okay with everything they were asked to do and everything…people seemed to give me fairly positive feedback into finding the learning experiences valuable."

I don't like to sit. The idea of having to sit in a desk all day is not appealing to the elementary students. One student, Jason, mentioned, "I like the [activities] where you move around a lot because usually I'm really sore from sitting a lot." PCTs did not like to sit all day either. In her interview, Liz said, "I'm physically active myself…like to get up [when I'm teaching] and I'm not sitting down at a desk…I like to be up and walking

around and moving around." Students are not the only ones who do not like to sit all the time. CT Dee said

> I can't sit in a chair all day so they can't, I mean it's the same requirement I don't expect them to they are kids we can do the same thing lying on the floor as we do at our desk as long as it gets done.

Connect and Reflect

Connect and reflect emphasized the principles of connecting experiences through interaction and reflection. The subthemes included sharing new ideas and communication.

Sharing new ideas. Classroom teachers enjoyed having PCTs in the classroom because they brought fresh new ideas to the classroom. Christy said, "I love to get new ideas from others and I love to get new ideas for things to integrate in my classroom, as well as new lessons to use in my classroom."

The course had several formal methods for PCTs to engage in reflective practices. Carl said, "Part of my engagement with the service learning component was I had the opportunity to read people's reflections about and discussions related to the service learning that they were completing." The discussion threads were particularly helpful for PCTs. Martin said,

> Through the forum discussions, especially the Move for Thought, I really found those discussions really helpful not only for generating ideas but through hearing other people discuss their experiences and feelings and it really helped me to figure out what specifically I could do in the classroom to implement my plans.

Communication. Distance education requires course instructors and preservice teachers to use alternative forms of communication (e.g., email, videoconferencing, text messaging) Carl (the course instructor) described his methods of communication with the PCTs:

> I used our Blackboard email for group email messages to the whole class. I don't think I used the discussion board to provide any of my own perspectives or responses to the students' posts. I basically left that part up to them to be a student to student dialogue.

Videoconferencing was used in the second half of the course. Carl scheduled weekly Skype calls with PCTs. There were advantages and disadvantages to using Skype. Carl said an advantage was getting to know the PCTs as people and not just names on a computer: "You see what the students look like and hear them." However, technology issues were a challenge to effectively using Skype. Carl lamented, "I wasn't able to touch base with every student at least once for all the Skype sessions." PCTs also felt that instructor-to-student communication worked well in some cases, but not well in others. Katie said,

> He was very good at that about emailing back. [Regarding] Skype, I would recommend to him that he might want to try Google Hangouts because we have been using Google Hangout in our other classes and that would give us a better video and everyone's picture is up, everyone's sound is fine.

A group of the PCTs took the initiative to set up a Facebook group where they could communicate between each other outside of what was required as part of the class.

Missy said, “We all were interactive outside of school. We all have a group chat on Facebook where we keep in touch and help each other out but that's not part of class.”

Classroom teachers were happy with the communication with their PCTs. Christy said, “[Communication was] very good. We communicated, you know, even when she may not have been here that day, through text messaging mainly. It was open communication.”

Discussion

The current study has important implications for the field of K-12 teacher preparation and the development of online teacher education for providing virtual field experiences related to movement integration. McIntyre et al. (1996) suggests that constructivist teacher education programs should develop and create field experiences that preservice CT growth through experiences, reflection, and self-examination. The current study examined the perceptions and experiences of multiple stakeholders (i.e., elementary students, PCT, elementary CTs, and a university CI) constructivist-guided field experiences related to learning to integrate movement in actual elementary classrooms as part of a university SL course delivered in a distance delivery platform. The findings suggest that stakeholder’s experiences support constructivist-guided SL using a distance delivery design by using a student-centered approach to learning, providing mechanisms for connecting experience to future opportunity, having “hands-on” experience in authentic “real-world” context of elementary classrooms, having the opportunity to reflect on their experiences, and develop mutually beneficial interactions.

A student-center approach or where the teacher acts more as a facilitator is a distinguishing feature of models of both constructivism and distance delivery (Janicki &

Liegle, 2001; Savery & Duffy, 1995). The constructivist-guided university course encouraged learner ownership of the content by allowing the PCT control of the content for course assignments. Constructivist principles rely on the teacher as a facilitator that allows student to direct the course of knowledge (Savery & Duffy, 1995). Distance delivery also creates an independent learner that is usually very self-sufficient (Janicki & Liegle, 2001). Janicki and Liegle (2001) state that instructor as facilitator and learner controlling the pacing of content is part of quality design in distance learning courses. PCT were able to decide what MI strategies to utilize as well as any academic content incorporated. The CI through online communication and discussion discovered that the students were having trouble completing assignments based on the previously scheduled timeline and after collaboration with the students enrolled in the course the decision was made to extend all of the deadlines and allow the students to complete assignments at their own pace. Learner's control of pacing is believed to support effective design of web-based instruction (Janicki & Liegle, 2001; Swan, 2001). The instructor acted as a facilitator in that his primary role was to provide support as needed and to hold students accountable for the completion of the course requirements.

A major theme that reoccurred was the benefits/importance of PA, with subthemes of reflection, future implementer, and opportunity to move. Upon reflection after implementation of MI activities, CTs were reminded how valuable PA can be for students, and that sometimes they get so carried away with the academic content (Cothran et al., 2010; Goh et al., 2014) that they forget that kids need to move and that ultimately it can benefit their academic achievement (Donnelly & Lambourne, 2011; Howie, Newman-Norlund, & Pate, 2014). For many preservice teachers they came to realize that

MI can benefit students because it gives them an outlet to burn excess energy and can improve concentration and on-task behavior, and they genuinely enjoy the experience of MI and prefer not to be seated all the time and is consistent with student responses and previous literature (Donnelly et al., 2009; Howie et al., 2014; Mahar et al., 2006; Mahar, 2011; Vazou et al., 2012).

Another important revelation is that when preservice teachers were asked if they plan on using MI in their classrooms when they are a practicing teacher, they responded in the affirmative. This is consistent with the goals of SL to provide connections to future use (Carver, 1996). The CI expects that future research should further explore use of distance delivery as a way to expand teacher preparation and 'that the distance delivery does open a new channel for disseminating the kinds of education and development we want pre-service classroom teachers to receive with respect to movement integration and school physical activity promotion.'

Authenticity is when activities and consequences that are understood by participants are relevant to their lives (Carver, 1996). Placing PCT in authentic "real-world" environments such as elementary classrooms aligns with principles of distance learning (e.g., hands-on problems), SL, and constructivism (e.g., authenticity, and "real-world" context). The major theme associated with the placement in real-world context is fun for kids. Enjoyment associated with the being a part of students experiencing the implementation of classroom and elementary students enjoying participating in the activities and moving. Experiencing the benefits of MI for elementary students firsthand could have facilitated the desired learning outcomes for the PCT. Data from this study emphasized the positive stakeholder responses with MI experiences. In an MI

intervention with inservice classroom teachers, Cothran et al. (2010) and Kulinna (2012) reported findings that supported Guskey's (1986) Model of Teacher Change, which purports that adaptive changes in teachers' beliefs are based on the teachers first trying new educational practices (e.g., as part of a university course practicum) and then observing positive changes in their students' learning. In another intervention, classroom teachers identified positive student responses as one of the factors influencing the extent to which they used MI (Naylor, Macdonald, Zebedee, Reed, & McKay, 2006). Additionally, McMullen et al. (2014) reported findings that student reactions are a key component of classroom teachers using MI.

Students and teachers said they prefer to move rather than sit. The traditional model of students sitting in desks for long periods of time is becoming antiquated. Schools and classrooms are moving around the classroom (Russ et al., 2015), they are using stability balls as chairs (Fedewa & Erwin, 2011), and stand-up desks as alternatives to traditional sedentary desks and chairs (Hinckson et al., 2013). Student perspectives have been absent in much of the research on MI. Elementary students in this study like to engage in a variety of activities that range from active participation in sports and games in their free time and at recess, as well as an infinity for technology and sedentary activities, but the majority of students interview stated that they like classroom activities where they get to get up and move around. Elementary students do not like to sit for long periods of time. This can be explained by research that suggests that short PA breaks improve concentration and improves on-task behavior (Mahar et al., 2006; Mahar, 2011).

Providing mechanisms for connecting experience to future opportunity includes giving PCT the opportunity to develop habits, memories, skills, and knowledge that will

benefit them in the future (Carver, 1996). Students build understandings of phenomena, events, and human nature by thinking about what they have experienced and by drawing on their experiences and prior knowledge, this is reflection (Carver, 1996). An integral part of both SL and constructivism is reflection (Carver, 1996; Savery & Duffy, 2001). A major point of reflection that was introduced earlier was the benefits/importance of PA. A major vehicle for the PCT to reflect were from the reflective assignments that were assigned as part of the university course. PCT engaged in an online learning community (Move for Thought, www.moveforthought.ning) and interacted through discussion boards. The assignments allow the students the opportunity to reflect on their implementations and experiences related to classroom MI. PCT expressed challenges related to classroom space and management issues as well as successes related to student enjoyment and ease of implementation. This is consistent with literature on classroom MI (Cothran et al., 2010; McMullen et al., 2014; Webster et al., 2010). It is possible that the reflection assignments helped in meeting the intended outcomes for the PCT. Constructivist learning theories emphasize the importance of guided reflection in student learning (Beck & Kosnik, 2006). Moreover, the teacher education literature emphasizes the importance of reflection in successful field experiences (McIntyre et al., 1996).

Furco (1996) distinguishes SL from other forms of volunteerism and community service by emphasizing the importance of reciprocity. Reciprocity is defined as mutuality between the needs of the provider and recipient as a key feature to SL programs and to pedagogy that supports SL activities (Henry & Breyfogle, 2006). A theme across of this study is the mutual benefit that both the PCT and the elementary CTs experienced. CTs were inspired by the fresh and new ideas that the PCT brought to class. For veteran teachers, their own teacher training programs may or may not have included methods for

implementing MI into the classroom. While they understand the importance and value of PA, some have not made the connection to its value in the everyday classroom, while others use MI on a more regular basis. The exchange of information between preservice CT and CT provides each with mutual benefit in learning to integrate MI.

This study has several limitations. The study was conducted in the context of an academic course which preservice CT work was graded and this may have influenced their reflections, and classroom behaviors Elementary student interviews were conducted after the winter break and this may have affected the ability of early elementary students to recall specific events that happened. Although all stakeholders were encouraged to answer honestly and had no bearing on any type of assessment, the possibility exists that the data reflect social desirability. Additionally, the study was conducted with only one section of a university course with a small enrollment, which led to working with a small number of elementary classrooms and students. Future research should consider observation of the MI implementations to further supplement the data collected via interviews. The study strengths were that the case study design that used multiple data sources that allow for rich thick description and data triangulation. This optimizes the chance for analytic generalizability, where principles and lessons learned can be applied to a variety of situations (Yin, 2014),

In conclusion, the findings suggest a constructivist-guided approach to SL related MI can be successful in a distance delivery format. The intersection of perspectives and experiences of multiple stakeholders suggest benefits related to mutual benefits from good communication between stakeholders and the sharing of knowledge in the form of new ideas and methods of incorporating PA in to the classroom, reflection opportunities,

the benefit/importance of PA, the opportunity to interact in authentic "real-world" classrooms where MI is "Fun for Kids", and student-centered approach that allows students to control the content and control the pace of learning all provide mechanism for successful implementation of classroom PA. This study adds to the developing line of research that examines using distance delivery as a platform for providing SL related to MI experiences as part of preservice teacher preparation programs, based on evidence that MI is beneficial to children's health and learning cite and that distance learning and SL can be used successfully to implement MI cite. Overall, the findings suggest that elementary-based classroom field experiences can facilitate learning to integrate movement using a distance delivery method. Few studies have examined the elementary student perspective related to MI and to the authors knowledge no studies have explored distance learning as a method to implement SL related MI. Constructivist-guided distance delivery shows promise as a way to promote SL related MI in teacher education programs. Stakeholders experience benefits from collaboration and sharing knowledge, enjoyment from experiencing "real-world" teaching and seeing the benefit of MI firsthand and most importantly that MI is Fun for Kids.

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Table 4.1 *Dose delivered (completeness) schedule of assignments*

Module	Date	Discussion	Implementation
1	10/17 – 10/23	Blackboard post	Observation
2	10/24 – 10/30	Blackboard post	Observation
3	10/31 – 11/06	Blackboard post	Observation
4	11/07 – 11/13	Blackboard post	Observation
5	11/14 – 11/20	M4T Blog & Skype	Implementation
6	11/21 – 11/27	M4T Blog & Skype	Implementation
7	11/28 – 12/04	M4T Blog & Skype	Implementation
8	12/05 – 12/06	M4T Blog & Skype	Implementation

Note: M4T = Move for Thought

Components to be observed	Evidence collected	Yes	No
Fidelity (Quality)			
Extent to which intervention was implemented and planned	• Obtained syllabus	X	
	• Blackboard discussion posts	X	
	• M4T blog posts	X	
	• Signed implementation sheets	X	
	• Interview transcripts	X	
Dose Delivered (completeness)			
Amount or number of intended units of each intervention or component delivered or provided by interventionists.	• Course outline (syllabus)	X	
	• Researcher observation field notes	X	
	• Signed implementation sheets	X	
Dose Received (satisfaction)			
Participant (primary and secondary audiences) satisfaction with program, interactions with staff and/or investigators	• Stakeholder interviews transcripts	X	

Figure 4.1 Process Evaluation Fidelity Checklist

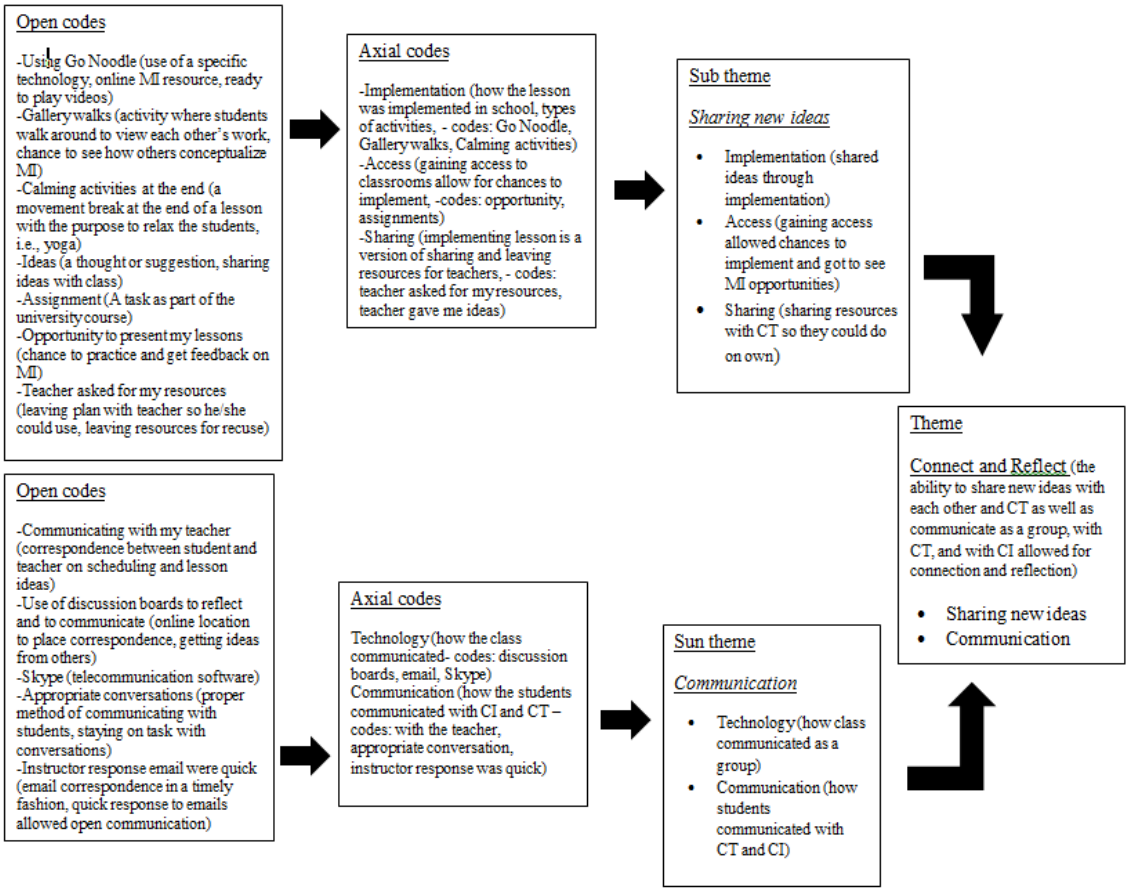

Figure 4.2 Code reduction example study two

CHAPTER 5

A Systematic Review of Facilitators and Barriers to Using Movement Integration and University-Based Service-Learning in Elementary Classrooms[3]

[3] Michael, R.D., Webster, C.A., Egan, C.A., Nilges, L., Brian, A., Johnson, R., and Carson, R. L. To be submitted

Abstract

Purpose: A systematic review was conducted to identify facilitators and barriers to (a) using movement integration (MI) in elementary school classrooms and (b) using university-based service-learning (SL) in elementary school classrooms. **Method:** Online databases (Educational Resources Information Center, Google Scholar, PsycINFO, and PubMed) served as data sources for the study. Following the PRISMA guidelines, relevant published research on MI and SL, respectively, was identified using two separate searches and screened for inclusion in qualitative syntheses. Content analyses of the included articles (31 for MI and 5 for SL) were used to identify 26 facilitators and 15 barriers associated with MI and 22 facilitators and 24 barriers associated with SL. Facilitators and barriers for each area of focus (MI and SL) were then categorized based on conceptual consistencies and commonalities and using a social-ecological perspective as a framework. **Results:** The categories for MI include institutional factors (e.g., presence of a school champion, resources, and scheduling of daily MI routines) and intrapersonal (e.g., teacher confidence, and ease of implementation)factors. The categories for SL included intrapersonal factors (e.g., being flexible, shared decision making, and positive student outcomes) and institutional factors (e.g., training, university support, and time demands). **Conclusion:** This review can inform research and practice aimed at harnessing university-based SL as a key partnership approach to support elementary classroom teachers' use of MI.

Keywords: physical activity promotion, classroom teachers, comprehensive school physical activity program, elementary schools, experiential learning, teacher education

A Systematic Review of Facilitators and Barriers to Using Movement Integration and University-Based Service-Learning in Elementary Classrooms

Participation in regular physical activity (PA) benefits children by reducing risk factors for diseases such as diabetes, cardiovascular disease and obesity (Center for Disease Control [CDC], 2013; USDHHS, 208), enhancing cognitive functioning (Donnelly & Lambourne, 2011; Howie, Newman-Norlund, & Pate, 2014), classroom behavior (Mahar et al., 2006; Mahar, 2011),, and academic achievement (Donnelly & Lambourne, 2011; Vazou & Smiley-Oyen, 2014),. United States guidelines state that children and adolescents should accumulate at least 60 minutes of moderate-to-vigorous physical activity (PA) daily (U.S. Department of Health and Human Services [USDHHS], 2008). However, only 42% of children and 8% of adolescents meet PA guidelines (Troiano et al., 2008). Furthermore, Turner, Johnson, Slater, and Chaloupka (2014) indicate that children spend as much as 90% of their day in sedentary time.

The Institute of Medicine (IOM, 2013) suggests that schools offer a natural setting for increasing youth daily PA because schools provide an existing infrastructure for providing PA before, during, and after school. Additionally, schools have access to virtually all children in a centralized location, and can provide multiple opportunities for all children to participate in PA each day (Pate et al., 2006). The IOM recommends that schools provide 30 minutes of PA (half of the recommended 60 minutes) during school hours, but evidence suggests that few schools are meeting this guideline. For example, only five states require the nationally recommended 150 minutes of physical education each week for elementary children (Society of Health and Physical Educators – SHAPE America, 2016) and only 16.0 percent (8 of 50 states) require elementary schools to

provide daily recess (SHAPE America, 2016). To increase children's daily PA, the IOM (2013) calls for a whole school approach involving a coordinated effort among school professionals, families, and the surrounding community. The widely advocated model for such an approach is the comprehensive school physical activity program (CSPAP; CDC, 2013; SHAPE America, 2016). A CSPAP has five components: (a) physical education, (b) PA during school (beyond physical education), (c) PA before and after school, (d) staff involvement, and (e) family and community engagement.

Movement integration

Within a CSPAP, one strategy to help children accumulate the recommended 30 minutes of PA during school hours is to provide classroom-based PA opportunities. This strategy has been referred to as movement integration (MI), which involves incorporating PA, at any level of intensity, into regular classroom time during routine transitions, as part of academic lessons, or by providing PA breaks (Parks, Solomon, & Lee, 2007; Webster, Russ, Vazou, Goh, & Erwin, 2015). Common terms include brain breaks (or boosts), activity breaks, active lessons, and movement lessons. Russ et al., (2016) developed the System for Observing Student Movement in Academic Routines and Transitions (SOSMART) for observing and categorizing MI in elementary general education classrooms. A few of the most frequently occurring examples of student movement were as a result of (a) non-teacher directed transitions (e.g., incidental movements occurred) (b) teacher-directed transitions, (c) non-academic teacher-directed movement breaks, (d) academic-infused teacher-directed movement breaks, and (e) technology-led teacher-infused transitions or movement breaks (e.g., Go Noodle or YouTube videos) (Russ, et al., 2016).

MI has been shown to increase MVPA (Bartholomew et al., 2011; Beighle et al., 2010; Erwin et al., 2011; Goh et al., 2014; Mahar et al., 2006), decrease sedentary time (Mantis, Vazou, Saint-Maurice, & Welk, 2014; Salmon et al., 2005), improve on-task behavior (Mahar et al., 2006; Mahar, 2011), enhance cognitive function (Donnelly & Lambourne, 2011; Howie, Newman-Norlund, & Pate, 2014), increase standardized test scores (Vazou & Smiley-Oyen, 2014), increase enjoyment (Donnelly et al., 2009; Howie et al., 2014; Vazou et al., 2012) and increase perceived competence in the classroom (Vazou et al., 2012). Small bouts of MI (i.e., 10 minutes or less) in the classroom have been found to increase students' PA to moderate intensity levels (Stewart, Dennison, Kohl, & Doyle, 2004). Moreover, students' overall step-counts increased during the school day as a result of teacher incorporated MI activities (Erwin et al., 2011).

In tandem with the research demonstrating the many benefits of MI for children, studies have also identified numerous factors that may either facilitate or hinder CT use MI, and therefore affect the extent to which teachers integrate movement opportunities in their classrooms. For instance, the type of MI and its perceived outcomes appear to be important considerations for teachers. In one study, teachers preferred activity breaks with connections to academic content (McMullen, Kulinna, & Cothran, 2014). Additionally, the teachers used movement breaks as a reward for students' good behavior to increase control in the classroom. CTs also favored activities that were easy to implement and led to student enjoyment. In another study, teachers who perceived a value in incorporating activity for the benefit of overall student wellness were more likely to implement MI (Cothran, Kulinna, & Garn, 2010). Some studies identified barriers to teachers' use of MI. Teachers reported limited use of MI due to the increased demand of

standardized testing and accountability in schools (Parks, et al., 2007). Moreover, teachers were less likely to engage in MI when they perceived time constraints related to having too many additional responsibilities (Cothran, et al., 2010). In other research, teachers expressed concerns that MI takes away from time dedicated to academic instruction (Goh et al., 2014) and can lead to difficulties maintaining classroom control (McMullen et al., 2014). Many teachers are not trained in incorporate MI strategies and are less likely to incorporate them in the classroom if they feel that it would lead to student misbehavior (McMullen et al., 2014).

Service-learning

Service-learning (SL) may provide a way to support elementary CTs in their use of MI. Webster, Beets, Weaver, Vazou, and Russ (2015) recommended SL as a key strategy to support school professionals in implementing and sustaining CSPAPs. SL falls under the umbrella of experiential learning. Furco (1996) distinguishes SL by its "intention to benefit equally the provider and the recipient" as well as its equal focus of "service and learning". SL offers a form of experiential learning that is unique due to its process of actively engaging students in real-world experiences (Cashman & Seifer, 2008).

SL is generally founded on six components: (a) high quality service to the community, (b) integrated learning between the service activity and the classroom, (c) reflection by the student to assist in integrating service experiences with academics, (d) student voice to enhance students' role in planning and implementing the learning activities, (e) collaboration to ensure benefits for all (i.e., students, community, and university), and (f) evaluation to effectively assess progress toward both the learning and

service goals (Anderson, Swick, & Yff, 2001). Three fundamental elements that should be included in any successful SL program are reality (i.e., real and rigorous academic content), reflection (i.e., thinking and writing about how the service experience has affected them), and reciprocity (i.e., both the service recipients and students gain from the exchange) (referred to as the "3Rs" of SL); however, Godfrey, Illes, and Berry (2005) added a fourth "R", responsibility i.e., obligation to contribute to a better community). SL is integrated into coursework and exists alongside it, placing equal emphasis on student learning and meaningful community service (Cashman & Seifer, 2008). To achieve the necessary balance between learning and service, the partners (service-learners and community members) negotiate the differences between their needs and their expectations (Cashman & Seifer, 2008).

University-based SL uses direct service where students' service directly affects and involves face-to-face interactions with the recipients (Kaye, 2010). In their systematic review of research on university teaching practicums, Lawson, Cakmak, Gunduz, and Busher (2015) noted that much of the practicum research was focused on preservice teachers; only 11 studies examined the role of the inservice (cooperating/coaching) teacher. In university field experiences, inservice teachers are generally expected to provide a place for PCT (PCT) to practice teaching but are usually not provided with adequate support and preparation for this role (Valencia, 2009). Facilitators associated with SL in the literature include a high degree of satisfaction as a CT (Beck & Kosnik, 2000), learning from the PCT (Beck & Kosnik, 2000), shared decision making and resources (Bosma et al., 2010), partner flexibility (Bosma et al., 2010), and the presence of a SL champion (Bosma et al., 2010). Barriers to

implementation include time demands (e.g., curricular demands, planning, and scheduling, Anderson & Pickeral, 1998; Beck & Kosnik, 2000), lack of student interest (Andeson & Pickeral, 1998), disruption to class routines (Beck & Kosnik, 2000), and situating the student as the sole learner rather than a collaboration between all participants (Grundoff & Williams, 2010).

Purpose of the study

There are multiple examples in the research literature of university-based SL applied to PA promotion initiatives (Butcher & Hall, 1998; Meaney, Griffin, & Bohler, 2009; Michael et al., in preparation; Webster et al., in review; Williams & Kovacs, 2001). As this trend continues, it is important to collate and synthesize the existing research on both university-based SL and school-based PA promotion strategies to generate evidence-based recommendations for using university-based SL to support school-based PA promotion efforts. To date, no efforts have been made to systematically review the research on MI or university-based SL to identify and synthesize the factors associated with their use by CTs. The purpose of this study was to conduct a systematic review of facilitators and barriers to elementary CTs' use of MI and university-based SL. The specific research questions explored were, "What factors enable or hinder elementary CTs' use of MI implementation?" and "What factors enable or hinder the elementary CTs' use of SL?" Overall, this study is intended to support all stakeholders (e.g., university researchers, interventionists, teacher educators, school professionals) in their ability to align their efforts with Webster et al.'s (2015) recommendations to use SL as a key partnership approach for increasing CSPAP implementation effectiveness and sustainability.

Methods

Approach to Systematic Review

A systemic review "attempts to collate all empirical evidence that fits pre-specified eligibility criteria to answer a specific research question" (Liberati et al., 2009, p.W-65). Systematic reviews are generally defined by four key characteristics: (a) clearly stated objectives with explicit and reproducible methodology, (b) a systematic search to identify all eligible literature for the review, (c) an assessment of the validity of research findings from individual studies, and (d) a systematic presentation and synthesis of the research findings (Liberati et al., 2009). This review adhered to Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines for conducting systematic reviews (Moher, Liberati, Tetzlaff, Altman, & The PRISMA Group, 2009) where appropriate. These guidelines were developed to increase transparency in reporting the protocols and procedures used when conducting systematic reviews.

Search Protocol and Identification

Two separate literature searches were conducted. The purpose of the first search was to identify all published research, in English, that reported facilitators and/or barriers to using MI in elementary classrooms. The purpose of the second search was to identify all published research, in English, that reported facilitators and/or barriers to using university-based SL in elementary classrooms. The searches were conducted using online databases, including Google Scholar, PubMed, Educational Resources Information Center (ERIC), and PsycINFO. For the search related to MI facilitators/barriers, multiple combinations of the following key words (with scaffolding) were used: "class*," "physical activity," "energizers," "exercise," "int*," "elementary" "perceptions," and

"behaviors". For the search related to SL facilitators/barriers, multiple combinations of the following key words (with scaffolding) were used: "school*," service-learning," "practicum," "exp*," "perceptions," "challenges," "facilitators," and "best practices". In total, 15,129 (MI =9,042 and SL = 6,087) records were identified for review. All duplicates were then removed, resulting in 8,946 records (MI = 5,902 and SL = 3,044) for screening.

Eligibility and Screening

The identified records for the MI review were included in the review if they (a) were published in English, (b) a peer reviewed research article, (c) focused on an elementary school setting, (d) included a focus on PA provided to children during scheduled classroom time, and (e) contained facilitators and/or barriers to using MI. MI exclusion criteria included (a) non-research articles, (b) not published in English, (c) did not take place during scheduled classroom time within regular school hours (e.g., before or after school programs, recess, and lunch periods), and (d) did not examine MI. The inclusion criteria for SL consisted of (a) must contain SL, defined as any educational experience attempting to link academic study with authentic community service, (b) the service must be linked to specific academic content through a university course, program, project, or department, (c) the service must be performed in the K-12 education setting, and (d) must be research articles from publications that are the result of a peer-review process. Exclusion criteria for SL were (a) non-research articles, (b) SL not linked through an academic platform at a university (e.g., volunteer service), and (c) studies that take place outside of the K-12 setting. Screening consisted of first reading the titles and/or abstracts of all records to determine if the records met all inclusion criteria. This

process led to 8,846 records (MI = 5,902 and SL = 3,044) being excluded from further review. Abstracts of the remaining 75 (MI = 51 and SL = 24) records did not contain enough information to determine whether all inclusion criteria were met. Therefore, full-text articles for these records were obtained and screened, resulting in 36 (MI = 31 and SL = 5 articles that were retained for analysis (see Tables 1 and 2).

Data Analysis

Two content analyses were used to qualitatively synthesize the factors identified in each pool of included articles. The first and third author independently searched for, distilled, and listed (by article) reported facilitators and barriers for MI and for SL and then crosschecked samples (50%) of each other's work, discussed and resolved discrepancies, and together finalized the lists. Next, the lists across articles were combined to create a comprehensive list of facilitators and barriers to using MI and a comprehensive list of facilitators and barriers to using SL. The first and third authors examined each list for redundancies and similarities and reduced the list to 25 facilitators and 15 barriers for MI, and 16 facilitators and 24 barriers for SL. Tables 3 and 4 display this final list of facilitators and barriers for MI and for SL, respectively, and identify the articles in which the facilitators/barriers were reported. All listed facilitators and barriers were then compared and categorized thematically into three major areas of focus for MI (see Table 3) and five areas of focus for SL (Table 4).

Social Ecological Framework

A social-ecological perspective was used to categorize facilitators and barriers to MI and SL in this review. The social ecological model (SEM) provides a framework to consider how different levels of factors (i.e., facilitators and barriers) interact to influence

behavior (Bronfenbrenner, 1977, 1979). McLeroy et al., (1988) suggested five levels of factors that relate to health promotion interventions: (a) intrapersonal factors, (b) interpersonal factors, (c) institutional factors, (d) community factors, and (e) public policy. Emmons (2000) expanded on McLeroy's model by elaborating on the social-structural conditions that influence health behaviors (Berkman & Glass, 2000). The SEM is a meaningful framework to consider the inter-related factors that work at multiple levels to shape human behavior in ways that support or resist targeted change efforts.

Findings

MI

Facilitators and barriers to MI were categorized into the two areas of focus: (a) institutional factors and (b) intrapersonal factors.

Institutional factors. Institutional factors included facilitators/barriers that occur at the school/district level and are often beyond the control of the CT (Jenkinson and Benson, 2010). Institutional facilitators were (a) availability of resources, (b) administrative support, and (c) access and attendance of professional development. Resource facilitators included having a variety of equipment options in the classroom (e.g., standing desks, plyo balls, and traditional desks, Aminian et al., 2015), the frequency of resource use (Allison et al., 2016), the availability of resources (Brown & Elliot, 2015; Masse, Naiman, & Naylor, 2013; Naylor et al., 2016; Webster et al., 2017), resources were provided by/available through the school board (Brown & Elliot, 2015), and easy access to activity ideas and equipment (Brown & Elliot, 2015; Delk et al., 2014). Facilitators of space were the availability of facilities and outdoor space (Brown & Elliot, 2015; Usher & Anderton, 2014), and a designated area for MI implementation

(Webster et al., 2017). Usher and Anderton (2014) provided an example of a teacher comment emphasizing how accessibility of equipment helped implement the Smart Moves curriculum:

> All participants described recreational facilities and equipment to be very accessible, well maintained and in good condition. Of the facilities, available at the school, teachers reported using the sports shed oval, track, hall, sandpit, fitness center and hall for Smart Moves sessions. (p. 11)

Administrative support was another institutional level enabler to implementing MI by having school board support (Brown & Elliot, 2015), school district administrator (e.g., superintendent, assistant superintendents, principles, and vice principals) support (Dinkel et al., 2017), school district support (Dinkel et al., 2017), providing resources and playground equipment from the district and/or school level (Graham et al.,, 2014; Webster at al., 2017), offering verbal encouragement from staff and administration (e.g., principal and vice principal) (Huberty et al., 2012), role modeling by teachers and paraprofessionals (Huberty et al., 2012), permission to devote time to PA from the principal (Naylor et al., 2006), the principal offered trainings during staff meetings (Sylianou, Kulinna, & Naiman, 2016), the principal sharing CBPA ideas (Sylianou, Kulinna, & Naiman, 2016), the principal providing supportive feedback (Sylianou, Kulinna, & Naiman, 2016), by administration (e.g., principal, and vice principals) offering schoolwide programs (Webster et al., 2017), and the principal for providing time for collaboration (Webster et al., 2017).

The third institutional facilitator was training and professional development, which included attending trainings (Brown & Elliot, 2015), trainings offered on-site and

during faculty meetings (Delk et al., 2014), and seeing examples demonstrated (e.g., by a service learner and/or research assistant, Gibson et al., 2008). Brown and Elliot (2015) reported that "attending training sessions for DPA was a perceived facilitator."

Institutional barriers included (a) competing curricular demands, (b) lack of time, (c) lack of space, (d) lack of resources, and (e) lack of administrative support. With respect to lack of time, a common barrier to implementation was having an overcrowded curriculum and/or competing curricular demands (Allison et al., 2016; Brown & Elliot, 2015; Cothran et al., 2010; Evenson et al., 2009; Gately et al., 2013; Graham et al., 2014; Langille & Rodgers, 2010; Masse, Naiman & Naylor, 2013; Naylor, 2016; Parks, Solomon & Lee, 2007; Perera et al., 2015; Usher, 2014; Webster et al., 2017). Time concerns were often related to pressures from standardized testing. Evenson et al. (2009) pointed out the academic concerns related to time: "…with increased emphasis on testing, schools are challenged to set aside time for physical activity" (p. 235). Time for MI was also a challenge for teachers due to frequent school disruptions (e.g., field trips, school assemblies, announcements; Allison et al., 2016; Brown & Elliot, 2015; Cothran et al., 2010; Dinkel, Lee, & Schaffer, 2016; Dinkel et al., 2017; Evenson et al., 2009; Gately et al., 2013; Gibson et al., 2008; Graham et al.,, 2014; Huberty et al., 2012; McMullen et at., 2016; Naylor, 2016; Perera et al., 2015; Sylianou, Kulinna, & Naiman, 2016; Webster et al., 2017). Brown and Elliot (2015) reported that "teachers highlighted disruptions such as school events that decrease the time they can devote to daily physical activity" (p. 77).

Space limitations were either focused on not having adequate space in the classroom environment to integrate movement or not having access to other facilities

(e.g., outdoor space) to promote PA during scheduled classroom time (Allison et al., 2016; Brown & Elliot, 2015; Delk et al., 2014; Dinkel, Lee, & Schaffer, 2016; Dinkel et al., 2017; Dunn, 2012; Evenson et al., 2009; Huberty et al., 2012; Masse et al., 2012; Masse, Naiman, & Naylor, 2013; McMullen et at., 2016; Naylor, 2016; Perera et al., 2015; Webster et al., 2017). Huberty et al., (2012) reported.

> Focus-group participants mentioned that the availability of space and equipment dedicated to PA was an additional barrier. Several participants mentioned that lack of space was due to the increasing amount of portable buildings that had been added to the school yard. (p. 991)

Lack of resources were barriers that included lack of facilities (Brown & Elliot, 2015; Gately et al., 2013), lack of equipment (Brown & Elliot, 2015; Huberty et al., 2012), lack of technology (Dinkel et al., 2017; Naylor et al., 2016), lack of funding (Brown & Elliot, 2015; Evenson et al., 2009), lack of activity/content ideas (Brown & Elliot, 2015; Dinkel et al., 2017), and lack of training opportunities (Brown & Elliot, 2015). Interview data from Brown and Elliot (2015) revealed that "resources also presented a barrier, including limited equipment, funding, activity ideas, and training opportunities" (p. 77). Also, Huberty et al. (2012) reported that a lack of available equipment or lack of quality equipment was cited as a barrier by many schools.

Lack of administrative support was a barrier that included lack of school board support (Allison et al., 2016), administrative buy-in (Graham et al., 2014), PA programming (Graham et al., 2014), guidance from the district (Masse et al., 2013), and lack of principal support (Perera et al., 2015). Graham et al., (2014) stated.

> Another related barrier described by multiple participants was the importance of administrative buy-in for PA initiatives. Several participants described that their participation in programing that included PA was directly related to the emphasis administration did (or did not) place on such activities. (p. 5)

Allison et al.'s (2016) survey revealed, "in addition, the pattern was replicated specifically for teachers in the case of: lack of equipment, lack of resources, lack of school board support, and lack of amenities" (p. 12).

Intrapersonal factors. Interpersonal and intrapersonal factors included facilitators/barriers that exist within the teacher. Intrapersonal facilitators were (a) teacher confidence, (b) perception of the value of PA, (c) perception of the contribution to overall student wellness, and (d) perceived ease of implementation. Teacher confidence was reported in numerous studies as an important facilitator of MI implementation (Allison et al., 2016; Delk et al., 2014; Dinkel et al., 2017; Naylor, 2016; Perera et al., 2015; Usher & Anderton, 2014; Webster et al., 2015). For example, Allison et al. (2016) conducted a survey and found that teachers expressing confidence in successfully planning and implementing MI were more likely to report implementation fidelity in their classroom than teachers expressing low or moderate confidence.

Teachers' perceptions of the value of MI was another facilitator of MI in many of the included studies (Allison et al., 2016; Brown & Elliot, 2015; Dinkel et al., 2017; Evenson et al., 2009; Gibson et al., 2008; Graham et al.,, 2014; Howie, Newman-Norlund, & Pate, 2014; Martin & Murtagh, 2015; Masse, Naiman, & Naylor, 2013; McMullen et al., 2011; McMullen et al., 2016; Parks, Solomon, & Lee, 2007; Perera et al., 2015; Sylianou, Kulinna, & Naiman, 2016; Webster et al., 2017). Such perceptions

encompassed feelings that MI is as important as other teacher functions (e.g., academic instruction), will lead to student benefits (e.g., improved academic achievement and on-task behavior) and, in turn, will promote staff and teacher buy-in. Masse et al., (2012) provided an example from an elementary teacher.

> Some of us have noticed positive impacts (mental alertness and focus, improved academic performance, improved classroom behaviors, student enjoy being active, attitudes shift toward physical activity, and increased positive student/teacher interactions) and I thought, I would be fighting up-against a wall to get this done; and the students love it…they crave it. I'm like 'okay, yup, yup, what are we doing for fitness today?' they want to be in shape and they know it's important…and there's no complaint, there's nothing. So it has me thinking during the school day. How can I get my kids more active? It's good to have that in the back of my mind knowing that … each day, I have to think of how I can get my kids moving. (p. 7)

Part of what teachers valued about MI was its contribution to the whole child. Teachers' perceptions that MI was important to students' wellness and enjoyment emerged as another teacher-level facilitator reported in numerous studies (Aminian et al., 2015; Cothran et al., 2010; Gately et al., 2013; Martin & Murtagh, 2015; McMullen, Kulinna, & Cothran, 2014; McMullen et at., 2016; Naylor, 2016; Sylianou, Kulinna, & Naiman, 2016; Vazou, Skrade, & Miriam, 2014; Webster et al., 2017). For example, Cothran et al. (2010) found that teachers in their study used MI more when they felt it benefited student wellness:

> Teachers who engaged in this voluntary program described a real commitment to their children beyond the classroom. The number one reason for teacher engagement in the classroom intervention was a desire to positively impact student wellness needs. They were concerned about their children's health and wanted to help students lead healthier lives. (p. 1384)

Ease of implementation was also a key factor in teachers deciding to implement MI into the classroom (Dinkel et al., 2017; Martin & Murtagh, 2015; McMullen, Kulinna, & Cothran, 2014; McMullen et al., 2011; McMullen et al., 2016; Vazou, Skrade, & Miriam, 2014). Teachers liked lessons that were quick, simple, and required minimal equipment. McMullen et al. (2016) reported that "teachers seemed to appreciate that the lessons could be done in a short period of time" and that "simple lessons that were easy to implement in a short time period appear to be important to this group of teachers when considering their existing time constraints" (p. 326).

Teacher-related factors that hindered MI implementation can be summarized as (a) lack of training, (b) trouble conceptualizing what PA in the classroom is, (c) lack of student and teacher motivation, (d) classroom management issues, (e) lack of teacher confidence, and (f) implementation challenges. Barriers due to lack of training were associated with lack of training opportunities (Brown & Elliot, 2015), trainings being optional (Brown & Elliot, 2015), location of trainings (e.g., locations that required travel, Delk et al., 2014), ineffective training (e.g., teachers feeling unprepared or unable to implement MI, Perera et al., 2015), lack of curricular guidelines and resources (e.g., teachers wanted new content ideas and suggestions), and lack of continuing professional development (e.g., ongoing support and resources, McMullen et al., 2016) One teacher

stated "…a website link showcasing a few lessons may be beneficial for teachers who don't have the great opportunity for CPD [continuing professional development]" (p. 326). Delk et al. (2014) reported in their study of the central Texas CATCH project that "roughly 6% of teachers reported receiving training at a district meeting and 6% received training at an 'other' location" (p. 725).

Some teachers had trouble conceptualizing what was supposed to count as PA or what PA looked like, or complained that there was insufficient curriculum or materials related to MI (Brown & Elliot, 2015; Dinkel et al., 2017; Masse, Naiman, & Naylor, 2013; McMullen et at., 2016; Perera et al., 2015). Mâsse, Naiman, and Naylor (2013) highlighted some of the issues related to conceptualizing PA: "Many of the complexity issues revolved around understanding of the guidelines…many [teachers] struggled with the lack of direction provided in the [Daily Physical Activity] guidelines; what counted toward [Daily Physical Activity] and how activities should be structured to count toward [Daily Physical Activity]" (p. 7).

Teachers' own lack of motivation to use MI, as well as perceptions some teachers had that students were not motivated to participate in MI activities, were additional barriers to MI (Brown & Elliot, 2015; Evenson et al., 2009; Dinkel, Lee, & Schaffer, 2016; Graham et al.,, 2014; Huberty et al., 2012; Perera et al., 2015; Vazou & Vlachopoulos, 2014; Vazou, Skrade, & Miriam, 2014; Webster et al., 2013; Webster et al., 2017). Some teachers feel like PA promotion is not their responsibility (Perera et al., 2015). In Perera's (2015) survey a small portion of teachers (5%) of 116 elementary teachers responded that "it's [PA] not my responsibility."

Classroom management barriers included off-task student behavior (Evenson et al., 2009), chaos (e.g., students being rowdy during MI, McMullen et al., 2014), safety issues (McMullen et al., 2014; Webster et al., 2017), transition challenges including moving classroom to classroom (Naylor et al, 2006) and transitioning from a movement opportunity back to class work (Sylianou, et al., 2016), management inconsistencies (e.g., practicing and reinforcing routines, and clarity of instructions, Sylianou et al., 2016), disruptions to teachers' schedules (Webster et al., 2017). McMullen et al., (2014) reported that getting back on task was an issue. "Another teacher pattern of behavior considerations emerged relative to students' ability to get back on task after an activity break" (p. 517). An example related to chaos was "when describing weaknesses of activity breaks or reasons for necessary modifications to activity breaks the teachers used words like rowdy, chaos (or chaotic), silly, squirrely and rough, among others, in reflective journals and interviews" (p. 516).

Teachers often did not feel comfortable or motivated promoting PA. (Allison et al., 2016; Brown & Elliot, 2015; Delk et al., 2014; Perera et al., 2015; Webster et al., 2015). Brown and Elliot (2015) reported that "similarly, participants (n=10, n=3) discussed teacher-specific characteristics, including that some teachers are not comfortable teaching PA and others are unmotivated to implement [Daily Physical Activity]." Evenson et al., (2009) offered ''some teachers do not have the desire or physically ability to lead in these types of activities." McMullen, et al., (2016) stated that a teacher had "not tried to incorporate movement into [her] academic lessons due to a lack of knowledge as to how to implement it effectively."

Implementation challenges included implementing PA in older grades (Brown & Elliot, 2015), incorporating PA with academic subjects (Dinkel, Lee, & Schaffer, 2016), differentiating PA opportunities for students with disabilities and different developmental levels (Evenson et al., 2009), and planning MI activities for substitute teachers (Gibson et al., 2008). Brown and Elliot (2015) recalled,

> Participants discussed how [Daily Physical Activity] is more difficult to implement in the older grades, due to greater curricular demands, difficulty engaging older students, and rotary (i.e., a class in which the students move between classrooms and teachers for different subjects). (p. 77)

SL

Two areas of focus in the final list of factors were labeled for SL, (a) intrapersonal factors, and (b) institutional factors. Descriptions of each area of focus are provided in the following sections.

Intrapersonal factors. Intrapersonal factors are characteristics of the individual (e.g., knowledge, attitudes, behavior, and self-concept, McLeroy, 1988).

Intrapersonal facilitators included (a) training, (b) program design, (c) mutual benefit, (d) perception of positive student outcomes, and (e) prior experiences. Related to training, Beck and Kosnik (2000) explained that the associate teacher (i.e., CT assigned a SL student) experienced high degrees of satisfaction with the program:

> It should be emphasized that the relatively high satisfaction of the associate teachers was due in part to the support we gave them, as described earlier. Because we visited them often, communicated with them at other times and responded to their questions or concerns instantly, they felt we valued them and

did not take advantage of them by merely 'dumping' students in their classroom. This was one reason they were willing to spend time with us when we visited (p. 213).

Wade, Anderson, Yarbrough, Pickeral, and Erickson (1999) revealed that a few teachers stated that "they included service-learning in their teaching because they were trained to do it" and "eight teachers stated that the service-learning preparation they have had received in the teacher education program led to their involvement" (p. 676).

CT perceived that the design of the program being flexible and easy to integration was a facilitator of implementation. Flexibility was considered important to CTs (Beck & Kosnik, 2000; Bosma et al., 2010). Bosma et al., (2010) examined university partnerships through the Lead Peace Partnership. Lead Peace examines core elements of a community-school-university partnership engaged in implementing and evaluating Lead Peace, a SL program for urban middle school youth. Semi-structured interviews were used to identify themes that contributed to the success of the partnership. Interviews focused on identifying challenges, successes, and perceptions of program implementation. A major theme was partners are flexible.

> When a demonstration study comparison school closed, flexibility on the part of all partners was essential to accommodating newly transferred students into the program, recruiting a new comparison school, and adapting the study evaluation design to accommodate these changes. (p. 505)

CTs in the study by Beck and Kosnik (2000) viewed themselves as flexible and supportive of the PCTs and this being an important part of being an associate teacher.

> Remarkably, three-quarters of the interviewees, without prompting of any kind, stressed the importance of being supportive of the student teachers: friendly, positive, 'helping them relax.' Many referred to painful memories of their own practice teaching, commenting that they wished to spare their student teachers such negative experiences. (p. 215)

Wade et al., (1999) stated that "service-learning was "easy to integrate" or fit well with their school curriculum or district goals" (676).

Mutual benefit is a key component of SL (Furco, 1986) and was evident from CTs' perceptions of possible advantages of learning from the PCTs (Beck & Kosnik, 2000; Grudnoff & Williams, 2010), each partner bringing expertise and credibility to the partnership (Bosma et al., 2010), and partners sharing decision-making and resources (Bosma et al., 2010; Grudnoff & Williams, 2010). Beck and Kosnik (2000) provided interview excerpts that emphasize the benefits of SL to CTs. Almost all interviewees said they learned from the experience, especially form their student teachers. Tina said,

> I think it's been very enriching for me as a teacher … there are a lot of benefits, obviously, but one thing I like about being an associate teacher is that student teachers have really great, innovative ideas and interesting things they bring to the programme, and they're also in a position where they can take a lot of risks. (p. 212)

CTs' perception that SL led to positive student outcomes facilitated SL experiences. Wade et al. (1999) reported,

> Not surprisingly, most of the reasons teachers offered for why they engage their students in service-learning revolved around positive benefits for their students.

> Providing learning that is "real world", meaningful, relevant, active, interesting, or enjoyable to their students featured prominently" (p. 676).

Lastly, previous experience factored into SL facilitation, CTs reported in Wade et al., (1999) that "they had good experiences themselves with SL" and "the most prevalent factor cited, though, was early life experience." Sixteen teachers referred to service activities they had done as youth with their families, churches, or schools" (p. 676).

Interpersonal and intrapersonal barriers are divided into two subthemes including (a) lack of buy-in and (b) PCT concerns. Anderson and Pickeral (1998) conducted interviews and developed a survey to examine what experienced SL teacher educators, education deans, and SL coordinators see as the primary challenges to the effective use of SL in preservice teacher education. CTs expressed that lack of buy-in was a barrier to SL. Specifically, they were not interested in SL (Anderson & Pickeral, 1998), felt unprepared to use SL as a teaching method (Anderson & Pickeral, 1998), viewed SL as an add on instead of integrated into the curriculum (Anderson & Pickeral, 1998), and viewed SL as detrimental to K-12 teacher education (Anderson & Pickeral, 1998). Concerns related to working with PCTs were also a barrier to using SL for CTs. A major fear was getting a "weak" PCT (Beck & Kosnik, 2000).

> From informal conversations we knew that stories of the 'weak' student teacher who wrecked a class were as prevalent as tales of the 'wicked' associate teacher who ruined a practice teaching placement. There was some fear of getting a weak student teacher, even among those who had never had one. (p. 212)

CTs viewed themselves as being very supportive of the PCT but also revealed that at times they were rather inflexible. An example from Beck and Kosnik's (2000)

interviews revealed that "For example, while many [CTs] spoke of the need to allow student teachers 'freedom' and 'leeway', in practice they were sometimes rather inflexible, requiring the students to follow the curriculum closely instead of exploring new topics and approaches" (p. 217). This can also be a barrier related to time as described by Michelle:

> I expect them to follow the unit I have to follow in the curriculum. If there's something really exciting they want to do we'll find time for it in art or maybe in 1 or 2 days; you know, I'm open. But we also have to follow the curriculum. (p. 217)

CTs also expressed a perception that PCTs experience burnout and do not view SL as a role of the CT (Anderson & Pickeral. 1998).

Institutional factors. Institutional factors occur at the school and university level. The only identified organizational facilitator was a school champion. A school champion is someone who leads the charge and takes responsibility for implementing the SL program. Bosma et al. (2010) explained the role of a champion in the Lead Peace partnership. Both program schools had a lead facilitator who served as a ''champion'' for Lead Peace,

> With responsibility for moving the project forward, understanding school procedures and climate, and maintaining productive working relationships with school administration. At each school, the lead facilitator made sure that all program facilitators had what they needed to implement weekly Lead Peace sessions, took responsibility for scheduling and logistics, communicated regularly

with school administration, and was the main point of contact between UMN PRC, community, and school partners. (p. 505)

Organizational barriers fit into two main categories: (a) lack time and (b) lack of administrative support. Time demands related to implementing SL were a main concern of CTs (Anderson & Pickeral, 1998; Beck & Kosnik, 2000). Issues related to time demands include time helping PCTs plan for lessons, time related to implementation for the CT, disruptions to classroom routines, and too many SL projects going on at one time (Anderson & Pickeral, 1998; Beck & Kosnik, 2000). Beck and Kosnik (2000) reported,

> About two-thirds of the teachers interviewed spoke about the extra time and work involved; time demands were also the major shortcoming noted at a liaison meeting on the role of the associate teacher. Another set of concerns had to do with disruption, of classroom routines, curriculum coverage, and the teacher-class relationship. (p. 212)

Anderson and Pickeral's (1998) survey revealed the top three most critical challenges were (a) lack of time to implement SL, (b) lack of time in preservice curriculum, and (c) faculty lack of time to plan.

University-related support comes from the CT perception of support from the university providing the SL. Barriers to university-related support include subthemes of (a) lack of alignment and (c) lack of support. CTs felt that SL did not align with K-12 goals or with state and teacher education standards; they also felt like SL did not align with their school and department priorities (Anderson & Pickeral, 1998). Anderson and Pickeral (1998) reported survey results, which placed alignment complaints in the top 20 challenges, and alignment to school and department priorities was in the top ten (p. 21).

Overall lack of support from the university in providing funding, curriculum, monitoring, and access to SL were the most common barriers to implementation of SL (Anderson & Pickeral, 1998). Lack of curriculum differed between SL teacher educators (SLTES) and non-SL teacher educators (NSLTE):

> These groups' ratings differed significantly on one item. This was 2c, lack of service-learning curriculum, which the NSLTE (M=3.14, SD=1.46) rated as a much more critical challenge than did the SLTE (M=1.72, SD=1.51). The difference between these mean ratings was -1.42 ($p<.05$). (p. 22)

The SLTE from the survey identified 14 additional challenges that were not part of the survey and they included too many SL projects going on at one time, difficulty monitoring SL, lack of a SL coordinator on site, and difficulty clarifying SL and how it can be integrated throughout courses to address standards rather than being an add-on (Anderson & Pickeral, 1998).

Discussion

This study systematically reviewed the facilitators and barriers to implementation of elementary classroom MI and SL. CSPAP provides a model to harness the school environment for children's PA promotion. Due to reduced physical education opportunities (SHAPE America, 2016), the use of MI in the academic classroom has been targeted to help children accumulate the recommended 30 minutes of PA during school hours (IOM, 2013). Webster et al. (2015) suggested a partnership approach, including the use of SL, to help implement and sustain CSPAPs. University SL is well established in teacher education (Anderson, Swick, & Yff, 2001), but there is little research on factors

associated with implementing SL, and no research that explores facilitators and barriers to using SL to support MI in elementary classrooms.

It is important to examine the intersection of the factors for both MI and SL to develop an understanding of how the two might interact to successfully promote PA in elementary classrooms. The findings suggest four common factors across both MI and SL that can be either a barrier or a facilitator depending on their presence or absence. The four factors include (a) time, (b) resources, (c) buy-in, and (d) professional development. These factors often appear to be interconnected. For example, lack of teacher buy-in could be attributed to lack of training or limited time to collaborate with colleagues. Furthermore, if teachers are not allowed time within meetings to discuss strategies, this may demonstrate that integrating PA into the classroom is not a priority or on equal ground as other subjects or is not encouraged by the administration, which relates to lack of administrative support.

CTs biggest barrier to MI and SL is not having enough time. Efforts to increase teachers' use of MI and SL should therefore focus on helping teachers learn to view and take advantage of MI and SL as time saving strategies. Sharing research on the academic benefits of MI (e.g., improved on-task behavior, increased standardized test scores) may be an important step in convincing teachers that MI will reduce the time needed to gain students' attention (Mahar et al., 2006; Mahar, 2011), and establish/reinforce a classroom management system (Goffreda, 2010), which may accelerate student learning. Moreover, service learners can be given assignments that allow teachers to multi-task. Teachers should be encouraged to use SL as a strategy to foster team teaching, group work, and individual remedial work (Beck & Kosnik, 2000).

Teachers in this study also identified limited access to resources as a barrier to implementation of MI and SL (Anderson & Pickeral, 1998; Beck & Kosnik, 2000; Erwin et al., 2011; Evenson, et al., 2009; Howie et al., 2014; McMullen et al., 2014; Parks et al., 2007; Stylianou et al., 2015). Resources can be intertwined with administrative support. For example, in the study by Webster et al., (2017) The CTs discussed the role that resources played in their implementation of MI. Some CTs discussed already having some support with a principal that was always looking for cutting edge ideas, this is an example of the connection between resources and administrative support. Some suggestions to overcome lack of resources are to share resources between teachers and other schools if possible, use activities (e.g., MI) that require no additional equipment, and seek outside funding opportunities (e.g., grants).

Buy-in encompasses support from administrators, teachers, and university faculty. If CTs view their administration as supportive they are more likely to implement MI and SL (Anderson & Pickeral, 1998; Graham et al., et al., 2014; Huberty et al., 2012). Administrative support may be most facilitative of MI and SL when administrators provide resources (i.e., MI programs, technology, and professional development). Support from colleagues also has an impact on teacher buy-in. Teacher -level support may be best facilitated via the identification of a school champion, who can galvanize support for implementing MI and SL (Bosma et al., 2010; Brown & Elliot, 2015). A few ways to help facilitate buy-in is to start small and work one-on-one with teachers that show receptivity (Anderson & Pickeral, 1998), develop additional opportunities for training or conducting workshops at faculty staff meetings, and provide incentives such

as recognition (e.g., certificates, rewards, and administrative recognition, Anderson & Pickeral, 1998).

Training and professional development for MI and SL are related to CTs feeling confident in their ability to implement MI. Teachers who reported being confident were more likely to plan and implement MI (Allison, 2016). While teachers did not mention confidence related to SL they did mention that faculty felt unprepared to use SL as a teaching method (Anderson & Pickeral, 1998). Anderson and Pickeral (1998) recommended that faculty who are experienced with SL mentor new faculty in using SL and further suggested that SL knowledge and willingness to learn about SL be considered as hiring criteria for new faculty. These ideas could also be applied to increasing the number of elementary teachers who are both capable and receptive to using MI and SL.

This research synthesis identifies key factors that merit careful consideration in program planning for interventions and teacher education related to MI and SL. The return of only four articles related to factors associated with implementation of SL for elementary teachers and no articles that combine SL and MI indicate there is a need for research to examine the potential of SL to support MI. The findings suggest that teachers enjoy working with university service learners and they enjoy learning new ideas on how to integrate movement into the classroom, but there are critical factors related to time demands, resources, training and support that must be considered to optimize the value of school-university partnerships for all stakeholders and maximize the PA opportunities provided to elementary children.

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Table 5.1 *Included articles for MI*

1.	Allison, Vu-Nguyen, Ng, Schoueri-Mychasiw, Dwyer, Manson, Hobin, Manske, & Robertson (2016)
2.	Aminian, Hinckson, & Stewart (2015)
3.	Brown & Elliot (2015)
4.	Cothran, Kulinna, & Garn (2010)
5.	Delk, Springer, Kelder & Grayless (2014)
6.	Dinkel, Lee, & Schaffer (2016)
7.	Dinkel, Schaffer, Snyder, Min Lee (2017)
8.	Dunn, Venturanza, Walsh, & Nonas (2012)
9.	Evenson, Ballard, Lee & Ammerman (2009)
10.	Gately, Curtis & Hardaker (2013)
11.	Gibson, Smilt, DuBose, Greene, Bailey, …, & Mayo (2008)
12.	Graham et al.,, Luca-Thompson, & O'Donnell (2014)
13.	Howie, Newman-Norlund, & Pate (2014)
14.	Huberty, Dinkel, Coleman, Beighle & Apentang (2012)
15.	Langille & Rodgers (2010)
16.	Martin & Murtagh (2015)
17.	Masse, McKay, Valente, Brant, & Naylor (2013)
18.	Masse, Naiman & Naylor (2013)
19.	McMullen, Kulinna, & Cothran (2014)
20.	McMullen, Kulinna, Cothran, Darst, & van der Mars (2011)
21.	McMullen, Martin, Jones, & Murtagh (2016)
22.	Naylor, Macdonald, Zebedee, Reed, & McKay (2006)
23.	Parks, Solomon, & Lee (2007)
24.	Perera, Frei, Frei, & Bobe (2015)
25.	Stylianou, Kulinna, & Naiman (2016)
26.	Usher & Anderson (2014)
27.	Vazou, Skrade, Miriam (2014)
28.	Vazou & Vlachopoulos (2014)
29.	Webster, Buchan, Perreault, Doan, Doutis, & Weaver (2017)
30.	Webster, Caputi, Perreault, Doan, Doutis, & Weaver (2013)
31.	Webster, Zarrett, Cook, Egan, & Nesbitt (2016)

Note: Articles listed alphabetically.

Table 5.2 *Included articles for SL*

1.	Anderson & Pickeral (1998)
2.	Beck & Kosnik (2000)
3.	Bosma, Sieving, Ericson, Russ, Cavender, & Bonnie (2010)
4.	Grudnoff & Williams (2010)
5.	Wade, Anderson, Yarbrough, Pickeral, & Erickson (1999)

Note: Articles listed alphabetically

Table 5.3 Final list of factors related to implementation of MI and the thematic units (External, Institutional, and Teacher-related)

Factors	Source(s)	Thematic focus
Facilitators		
1. Use resources provided more likely to report implementation fidelity	Allison et al., (2016); Arminian et al., (2015); Brown & Elliot (2015); Delk et al., (2014); Masse, Naiman, & Naylor, (2013); Naylor, (2016); Usher & Anderton, (2014); Webster et al., (2017)	Institutional
2. Policy awareness and feasibility (aware of policy and if policy is viewed as realistic and achievable teachers are more likely to report implementation fidelity)	Allison et al., (2016); Graham et al., (2014); Webster et al., (2013)	Institutional
3. Active classrooms need multiple types of movement (standing desks, balance seats, normal desks) for student choice	Arminian (2015)	Institutional
4. Administrative support	Allison et al., (2016); Brown & Elliot (2015); Dinkel et al., (2017); Graham et al., (2014); Huberty et al., (2012); Naylor, (2016); Sylianou, Kulinna, & Naiman, (2016); Webster et al., (2013);	Institutional
5. Presence of a school champion	Brown & Elliot, (2015); Langille & Rodgers, (2010); Masse, Naiman, & Naylor, (2013)	Institutional
6. Access to resources	Allison et al., (2016); Arminian et al., (2015); Brown & Elliot (2015); Delk et al., (2014); Masse, Naiman, & Naylor, (2013); Naylor, (2016); Usher & Anderton,	Institutional

	(2014); Webster et al., (2017)	
7. Training and professional development (access to training, seeing examples worked out, and attendance)	Brown & Elliot (2015); Delk et al., (2014); Dunn, (2012); Masse et al., (2012);	Institutional
8. Availability of space and facilities	Brown & Elliot (2015); Delk et al., (2014); Usher & Anderton, (2014); Webster et al., (2017)	Institutional
9. Monitoring	Langille & Rodgers, (2010)	Institutional
10. Easier when PE is a priority	Mâsse, Naiman, & Naylor, (2013)	Institutional
11. Having PE teacher as resource	Mâsse, Naiman, & Naylor, (2013)	Institutional
12. Policy awareness	Webster et al., (2013)	Institutional
13. Daily routine of MI (makes it easier to implement)	Webster et al., (2107)	Institutional
14. Teacher confidence (more likely to implement)	Allison et al., (2016); Delk et al., (2014); Dinkel et al., (2017); Naylor, (2016); Perera et al., (2015); Usher & Anderton, (2014); Webster et al., (2015)	Intrapersonal
15. PA is valued (treated the same as other subjects, perceived benefits of student outcomes, teacher and	Allison et al., (2016); Brown & Elliot (2015); Dinkel et al., (2017); Evenson et al., 2009); Gibson et al., (2008); Graham et al., (2014); Howie, Newman-Norlund, & Pate (2014); Martin & Murtagh, (2015); Masse,	Intrapersonal

staff buy-in) served as enabler	Naiman, & Naylor, (2013); McMullen et al., (2011); McMullen et at., (2016); Parks, Solomon, & Lee, (2007); Perera et al., (2015); Sylianou, Kulinna, & Naiman, (2016); Webster et al., (2017)	
16. Student wellness (teaching the whole child, seeing student enjoyment)	Arminian et al., (2015); Cothran et al., 2010); Gately et al., (2013); Martin & Murtagh, (2015); McMullen, Kulinna, & Cothran, (2014); McMullen et at., (2016); Naylor, (2016); Sylianou, Kulinna, & Naiman, (2016); Vazou, Skrade, & Miriam, (2014); Webster et al., (2017)	Intrapersonal
17. Collaboration and sharing ideas with other teachers	Brown & Elliot (2015);	Intrapersonal
18. Teachers have a personal interest in wellness	Cothran et al., 2010); Parks, Solomon, & Lee, (2007); Webster et al., (2015)	Intrapersonal
19. Teachers say they would implement if the barriers are overcome (time, space, resources, training, etc.)	Dinkel, Lee, & Schaffer, (2016)	Intrapersonal
20. Ease of implementation (longer duration of lessons such as Reading, math, writing are easier to implement PA, activities can be short in duration)	Dinkel et al., (2017); Martin & Murtagh, (2015); McMullen, Kulinna, & Cothran, (2014); McMullen et al., (2011); McMullen et at., (2016); Vazou, Skrade, & Miriam, (2014)	Intrapersonal
21. Implementing on non-PE days	Dinkel et al., (2017)	Intrapersonal

22. Encourages teacher's creativity	Gibson et al., (2008)	Intrapersonal
23. Autonomy to make choice	Langille & Rodgers, (2010)	Intrapersonal
24. Linked to academic content	Martin & Murtagh (2015); McMullen, Kulinna, & Cothran, (2014)	Intrapersonal
25. Less than 20 years of experience more likely to implement	Masse et al., (2012); Vazou, Skrade, & Miriam, (2014)	Intrapersonal
26. Satisfaction with personal K-12 experiences	Webster et al., (2015)	Intrapersonal
Barriers		
27. Competing curricular demands	Allison et al., (2016); Brown & Elliot (2015); Cothran et al., 2010); Evenson et al., 2009); Gately et al., (2013); Graham et al., (2014); Langille & Rodgers, (2010); Masse, Naiman & Naylor, 2013); Naylor, (2016); Parks, Solomon & Lee, (2007); Perera et al., (2015); Usher (2014); Webster et al., (2017)	Institutional
28. Lack of time (e.g., planning, scheduling, school disruptions)	Allison et al., (2016); Brown & Elliot (2015); Cothran et al., 2010); Dinkel, Lee, & Schaffer, (2016); Dinkel et al., (2017); Evenson et al., 2009); Gately et al., (2013); Gibson et al., (2008); Graham et al., (2014); Huberty et al., (2012); McMullen et at., (2016); Naylor, (2016); Perera et al., (2015); Sylianou, Kulinna, & Naiman, (2016); Webster et al., (2017)	Institutional

29. Lack of space (classroom size, other facilities, outside areas)	Allison et al., (2016); Brown & Elliot (2015); Delk et al., (2014); Dinkel, Lee, & Schaffer, (2016); Dinkel et al., (2017); Dunn, (2012); Evenson et al., (2009); Masse et al., (2012); Masse, Naiman, & Naylor, (2013); McMullen et at., (2016); Naylor, (2016); Perera et al., (2015); Webster et al., (2017)	Institutional
30. Lack of resources (equipment, funding, technology, amenities, facilities over crowded, not kept up facilities and equipment, losing space to school disruptions, facilities for inclement weather)	Allison et al., (2016); Brown & Elliot (2015); Delk et al., (2014); Dinkel, Lee, & Schaffer, (2016); Dinkel et al., (2017); Evenson et al., (2009); Gately et al., (2013); Gibson et al., (2008); Huberty et al., (2012); Masse, Naiman, & Naylor, (2013); McMullen, Kulinna, & Cothran, (2014); McMullen et at., (2016); Naylor, (2016); Perera et al., (2015); Usher & Anderton, (2014); Webster et al., (2017)	Institutional
31. Lack of administration support (principal & school board)	Allison et al., (2016); Brown & Elliot (2015); Dinkel, Lee, & Schaffer, (2016); Graham et al., (2014); Huberty et al., (2012); Masse, Naiman, & Naylor, (2013); Naylor, (2016); Perera et al., (2015); Webster et al., (2013); Webster et al., (2017)	Institutional
32. PA lower priority compared to other subjects (additionally there is no grade so no importance placed on it, no consequence if time not met)	Brown & Elliot (2015); Cothran et al., 2010); Langille & Rodgers, 2010)	Institutional
33. Implementation not feasible in existing school	Brown & Elliot, (2015)	Institutional

34. Lack of training (access to PD, teacher readiness, lack of ability to implement)	Brown & Elliot, (2015); Delk et al., (2014); Dinkel et al., (2017); Masse, Naiman, & Naylor, (2013); McMullen et at., (2016); Perera et al., (2015)	Intrapersonal
35. Lack of activity ideas (conceptualizing how it looks or works, content ideas, curriculum is insufficient-not enough)	Brown & Elliot (2015); Dinkel et al., (2017); Masse, Naiman, & Naylor, (2013); McMullen et at., (2016); Perera et al., (2015);	Intrapersonal
36. Lack of student motivation (older kids moving is hard)	Brown & Elliot (2015); Dinkel, Lee, & Schaffer, (2016); Graham et al., (2014); Huberty et al., (2012); Vazou & Vlachopoulos, (2014); Vazou, Skrade, & Miriam, (2014); Webster et al., (2017)	Intrapersonal
37. Behavior management (not trained for PA behavioral)	Dinkel, Lee, & Schaffer, (2016); Evenson et al., 2009); Martin & Murtagh, (2015); McMullen, Kulinna, & Cothran, (2014); McMullen et al., (2011); Naylor, (2016); Sylianou, Kulinna, & Naiman, (2016); Vazou, Skrade, & Miriam, (2014); Webster et al., (2017)	Intrapersonal
38. Teachers not comfortable not teaching PA (lack of confidence, ties to lack of training)	Allison et al., (2016); Brown & Elliot (2015); Delk et al., (2014); Perera et al., (2015); Webster et al., (2015)	Intrapersonal
39. Teachers are not motivated to implement (it's not my responsibility, not the right person)	Brown & Elliot (2015); Evenson et al., 2009); Perera et al., (2015); Vazou & Vlachopoulos, (2014); Webster et al., (2013); Webster et al., (2017)	Intrapersonal
40. Implementation difficulty (hard to integrate with other subjects, safety concerns, differentiation, planning for substitute teachers,)	Brown & Elliot (2015); Cothran et al., 2010); Dinkel, Lee, & Schaffer, (2016); Dinkel et al., (2017); Evenson et al., 2009); Gately et al., (2013); Gibson et al., (2008); Masse, Naiman, & Naylor, (2013)	Intrapersonal

41. Decreased autonomy (if required to do certain ones)	Masse, Naiman, & Naylor, (2013)	Intrapersonal

Note:

Table 5.4

Factors related to SL implementation

Factors	Source(s)	Thematic unit
Facilitators		
1. CTs were more likely to attend training and implement SL when a benefit or high degree of satisfaction was perceived	Beck & Kosnik, (2000)	Intrapersonal
2. CTs perceived a possible advantage of learning from the PCT	Beck & Kosnik, (2000); Bosma et al., (2010)	Intrapersonal
3. More work can get done with an extra pair of hands	Beck & Kosnik, (2000)	Intrapersonal
4. Practical mentoring (could give SL a glimpse of the classrooms as opposed to theoretical)- in action	Beck & Kosnik, (2000)	Intrapersonal
5. Regular communication between PCT & University	Bosma et al., (2010); Grudnoff & Williams, (2010)	Intrapersonal
6. Shared decision making	Bosma et al., (2010); Grudnoff & Williams, (2010)	Intrapersonal
7. Shared resources (shared with each other)	Bosma et al., (2010	Intrapersonal
8. Partners bring expertise and credibility (mutual respect)	Bosma et al., (2010)	Intrapersonal

9. Need time to develop and maintain relationship	Bosma et al., (2010); Grudnoff & Williams, (2010)	Intrapersonal
10. Being flexible	Beck & Kosnik, (2000); Bosma et al., (2010)	Intrapersonal
11. Both (PCT and CT) value SL (shared orientation to the project)	Beck & Kosnik, (2000); Bosma et al., (2010);	Intrapersonal
12. Easy to implement	Wade et al., (1999)	Intrapersonal
13. Fit well with school curriculum	Wade et al., (1999)	Intrapersonal
14. Previous SL experience	Wade et al., (1999)	Intrapersonal
15. Positive student outcomes	Wade et al., (1999)	Intrapersonal
16. Need SL school champion	Bosma et al., (2010)	Institutional
17. Because they were trained in SL	Wade et al., (1999)	Institutional
18. Perceived support from the University	Beck & Kosnik, (2000); Bosma et al., (2010)	Institutional
19. SL prep in TE	Wade et al., (1999)	Institutional
20. University needs to be present, needs to be priority (everyone recognized priority- schools focus is on K-12 university works within	Bosma et al., (2010)	Institutional

that (not going during testing, recognizing that K-12 have academic focus)		
21. School practicum site not classroom (prioritize school goals)	Grudnoff & Williams, (2010)	Institutional
22. Emphasizes learning for all partners not just students (experiential learning) reciprocity	Grudnoff & Williams, (2010)	Institutional
Barriers		
23. CTs misconception of flexibility (CT thinking they are flexible but really are not)	Beck & Kosnik, (2000)	Intrapersonal
24. Fear of getting a week SL	Beck & Kosnik, (2000)	Intrapersonal
25. CT unprepared to use SL as a learning method (lack of training, PD)	Anderson & Pickeral, (1998)	Intrapersonal
26. CT not interested	Anderson & Pickeral, (1998)	Intrapersonal
27. CT unprepared to make long term partnerships	Anderson & Pickeral, (1998)	Intrapersonal
28. K-12 kids not interested in SL	Anderson & Pickeral, (1998)	Intrapersonal
29. CTs viewed SL as detrimental to K-12 teacher education partnerships	Anderson & Pickeral, (1998)	Intrapersonal

30. CT view that PST experience burnout of SL	Anderson & Pickeral, (1998)	Intrapersonal
31. CT view that PST don't think SL is the role of CT	Anderson & Pickeral, (1998)	Intrapersonal
32. CT view SL as add on instead of integrated (like SL can help students meet standards, but CT do not see that)	Anderson & Pickeral, (1998)	Intrapersonal
33. Time demands (helping them plan) (CT time) (SL curricular time at college)	Anderson & Pickeral, (1998); Beck & Kosnik, (2000)	Institutional
34. Disruption to classroom routines	Anderson & Pickeral, (1998); Beck & Kosnik, (2000);	Institutional
35. Transportation difficulties	Anderson & Pickeral, (1998)	Institutional
36. Safety concerns	Anderson & Pickeral, (1998)	Institutional
37. Too many SL projects going on at one time	Anderson & Pickeral, (1998)	Institutional
38. Lack of Admin support	Anderson & Pickeral, (1998)	Institutional
39. SL doesn't align with K-12 goals	Anderson & Pickeral, (1998)	Institutional
40. Lack of aligning SL with state and	Anderson & Pickeral, (1998)	Institutional

teacher ed. standards (linking SL to educational reform initiatives)		
41. Lack of alignment with institutional and faculty roles	Anderson & Pickeral, (1998)	Institutional
42. Lack of funding	Anderson & Pickeral, (1998)	Institutional
43. Lack of SL curriculum	Anderson & Pickeral, (1998)	Institutional
44. Lack of access to SL	Anderson & Pickeral, (1998)	Institutional
45. Lack of university monitoring (methods to assess SL outcomes, time consuming)	Anderson & Pickeral, (1998)	Institutional
46. Lack of support from University	Anderson & Pickeral, (1998)	Institutional

Note: CT = CT, and PCT = Preservice CT

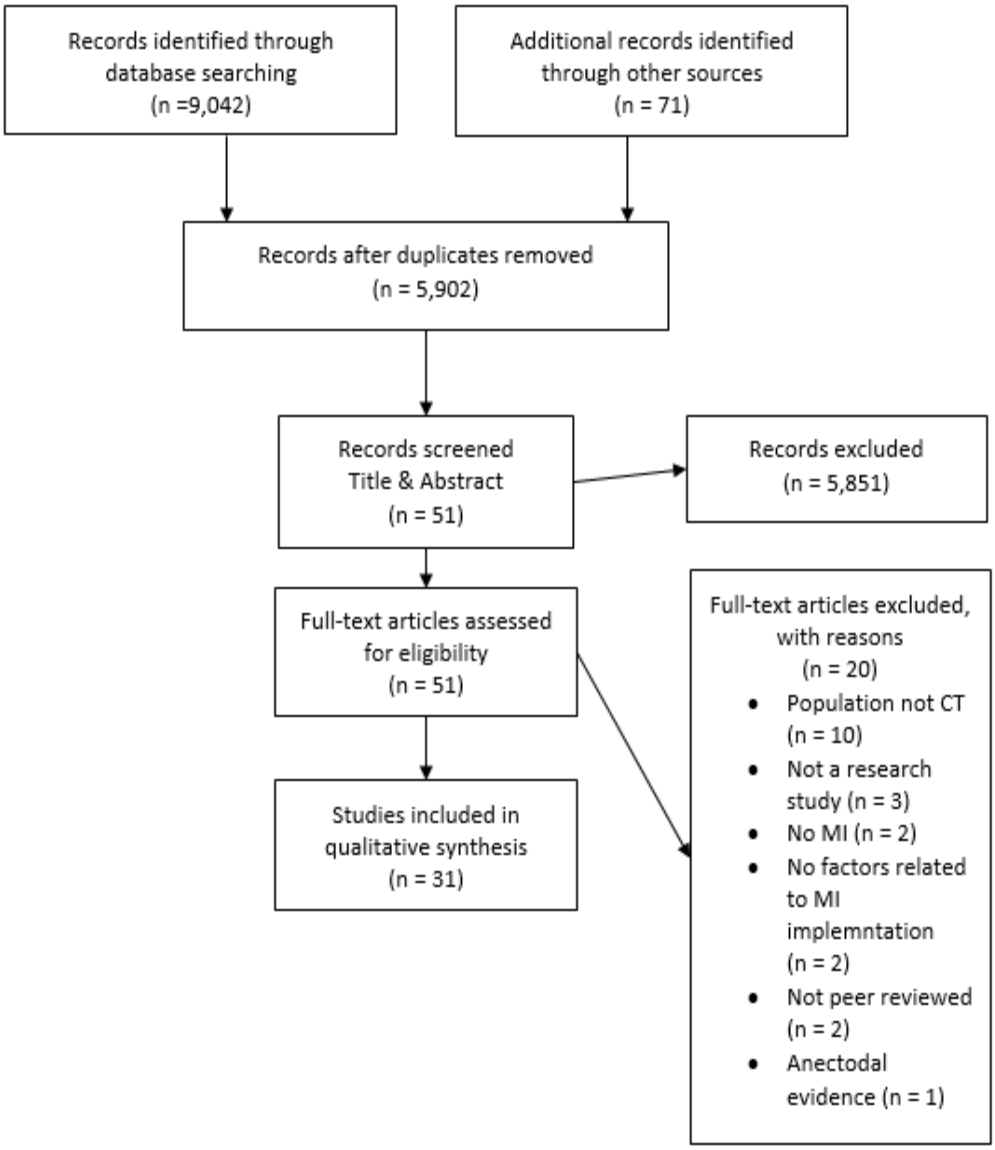

Figure 5.1 Flowchart of selection process for the MI review.

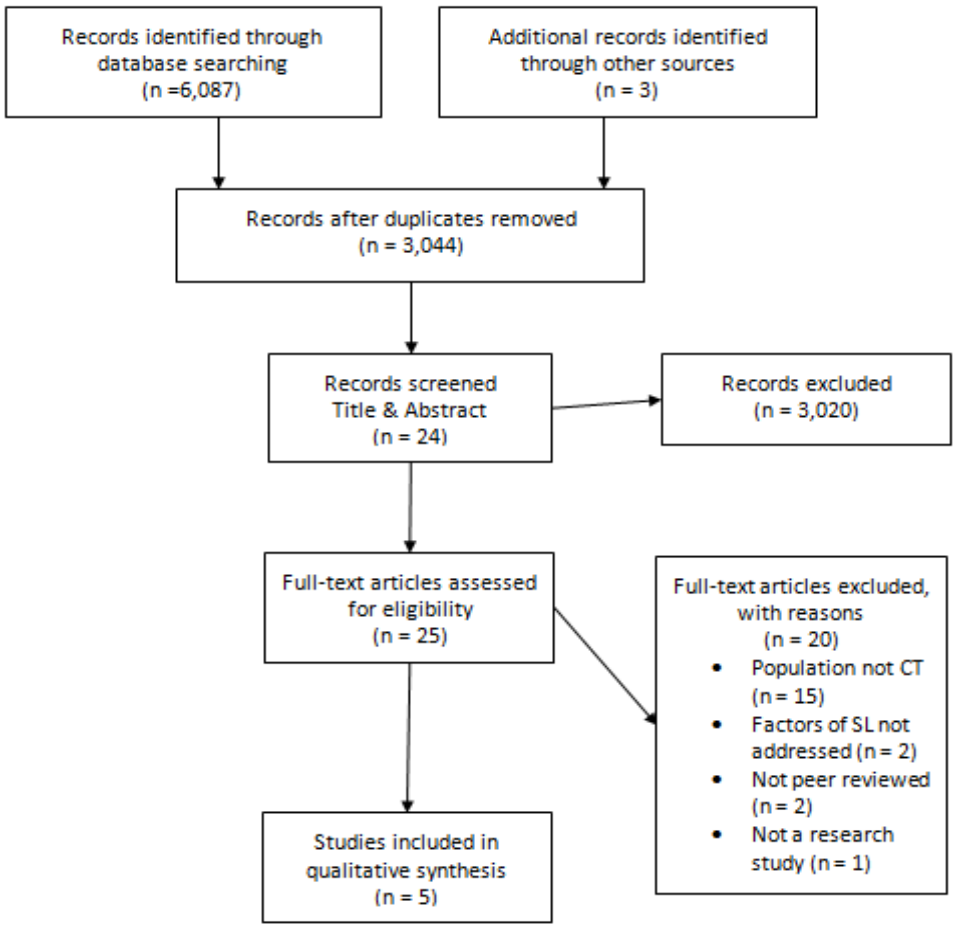

Figure 5.2 Flowchart of selection process for the SL.

CHAPTER 6

DISCUSSION

PA during the school day as part of a CSPAP, specifically in the academic classroom in the form of MI, has gained traction in research, and has shown positive outcomes (Bartholomew et al., 2011; Beighle et al., 2010; Erwin et al., 2011; Goh et al., 2014; Mahar et al., 2006; Mantis et al., 2014; Salmon et al., 2005). Webster et al. (2015) suggests a partnership approach where university SL is one component to consider for PA promotion in schools. The three studies in this dissertation examined SL as one partnership approach to integrating MI in elementary classrooms.

Major Findings from Each Study

Study 1 examined PCTs', CTs' and course instructors' perceptions across three university semesters in a constructivist-guided SL course that focused on MI. The main themes that emerged were successes and challenges related to implementing SL in a real world context (e.g., working in the authentic environment of actual elementary school classrooms), learning in a social context (e.g., interactions with peers, CTs and course instructors), and scaffolding (e.g., student support). Participants enjoyed the opportunities and experiences related to SL but viewed placements and scheduling as a barrier. Learning in a social context gave the PCTs a chance to experience real world values and benefits of MI (e.g., student enjoyment, student engagement, and improved classroom

behavior) and successes with peers. CTs valued the experience of being able to support the PCTs and "give back" to teacher education. The student-centered approach built into the course design, where the university-based component functioned like a workshop and the instructor acted as a facilitator, functioned to support the PCTs as learners in the course. However, participants perceived the lack of observation time as a limitation to the course design.

The second study examined stakeholders' (e.g., PCTs', CTs', the course instructor's, and elementary students') experiences of university SL to integrate MI using a university distance delivery format. Five main themes emerged: (a) benefit/importance of PA, (b) fun for kids, (c) interactions leading to mutual benefit, (d) student-centered approach, and (e) resources for drawing on student experiences and prior knowledge. Benefits of PA related to stakeholders seeing the value of MI in the classroom (e.g., improved on-task behavior, student engagement). Fun for kids related to the enjoyment working with elementary students and the students' enjoyment participating in the classroom MI activities. PCTs benefited from the experiences working in the elementary classrooms and the CTs valued the interactions with the PCTs and learned new ideas for their classrooms. The course design facilitated a student-centered approach that gave flexibility and choice regarding content decisions to the PCTs. Placement and scheduling of PCTs into elementary classrooms was a challenge as well as a received lack of observation in classrooms and for CIs. Lastly, resources for drawing on student experiences related to the reflective assignments that provided opportunities for PCTs to reflect on their experiences.

Study three was a systematic review to identify facilitators and barriers associated with implementation of MI and SL in elementary school classrooms. Four online databases (Educational Resources Information Center, Google Scholar, PsycINFO, and PubMed) were searched and qualitative syntheses were used to identify 26 facilitators and 15 barriers associated with MI and 22 facilitators and 24 barriers associated with SL. A social-ecological perspective guided the reduction of the barriers into two categories of MI facilitators/barriers (institutional factors and intrapersonal factors) and two categories of SL facilitators/barriers (interpersonal factors and institutional factors).

What do the Findings Mean Holistically?

The three studies highlight key considerations when using SL to integrate MI in elementary school classrooms. SL is an established part of teacher education (Anderson, Swick, & Yff, 2001), while MI can have positive outcomes for elementary children, such as increased MVPA (Bartholomew et al., 2011; Beighle et al., 2010; Erwin et al., 2011; Goh et al., 2014; Mahar et al., 2006), improved on-task behavior (Mahar et al., 2006; Mahar, 2011), and enhanced cognitive function (Donnelly & Lambourne, 2011; Howie, Newman-Norlund, & Pate, 2014). PCTs experience successes (e.g., experience their first authentic teaching experiences, realized the value and benefits of PA) and challenges (e.g., scheduling and placements, class size, and management issues) related to integrating MI in the classroom in both face-to-face and distance delivery courses. The literature suggests there are facilitators and/or barriers that either promote or hinder implementation in the elementary classroom for both MI (Allison et al., 2016; Brown & Elliot, 2015; Delk et al., 2014; Dinkel, Lee, & Schaffer, 2016; Dinkel et al., 2017; Dunn, 2012; Evenson et al., 2009; Masse et al., 2012; Masse, Naiman, & Naylor, 2013;

McMullen et at., 2016; Naylor, 2016; Perera et al., 2015; Webster et al., 2017) and SL (Anderson & Pickeral, 1998; Beck & Kosnik, 2000; Wade et al., 1999). The key factors are (a) time, (b) resources, (c) buy-in, and (d) professional development and these can be facilitators or barriers. Previous research revealed that PCTs were concerned with barriers at the organizational (i.e., school) level, including lack of time, space constraints, classroom management, pressure from testing, and attitudes from colleagues and administrators toward MI (Goh et al., 2013).

A major organizational (i.e., university) level issue experienced by the stakeholders was scheduling and placement of the PCTs for SL assignments. Zeichner (2006) suggests that university field experiences for PCTs need to be carefully planned and integrated. Positive placement results in emotional and psychological support for student teachers and supports learning (Sorenson, 2014). The biggest successes were related to being able to experience the real-world context of authentic elementary classrooms (Carver, 1996).

Take Home Messages

One take home message from this collection of studies is that using a constructivist-guided SL approach that situates PCTs in a student-centered learning environment and gives them the opportunity to experience teaching and learning in the authentic real-world setting of an elementary classroom allows them to interact with students and cooperating teachers and make connections to the importance and value of using MI. Another take home message is that there are barriers to using SL and MI, and many of these barriers are the same. Finding time to fit MI into busy schedules with

competing curricular demands (Allison et al., 2016; Anderson & Pickeral, 1998; Graham et al., 2014), planning demands (Anderson & Pickeral, 1998; Beck and Kosnik, 2000; and school disruptions (Brown & Elliot, 2015; Gately et al., 2013) makes implementation of SL and MI difficult. However, supportive administration facilitates MI (Huberty et al., 2012; Sylianou et al., 2016) and SL (Beck & Kosnik, 2000; Bosma et al., 2010). Webster et al., (2017) recommends building regularly scheduled MI into the daily routine. Naylor et al., (2006) discovered that a facilitator of implementation for MI was permission [from administration] to devote class time to PA.

Findings from these studies uncovered that scheduling and placements were a major issue at the university level that plagued stakeholders. Placements affect PCTs' perceptions of support (Sorenson, 2014). Zeichner (2006) states the importance in making sure preservice teachers' placements are carefully planned and implemented. Despite logistical challenges, classroom teachers want new content ideas and resources (Brown & Elliot, 2015; McMullen et al., 2016). This dissertation research shows that SL fostered CTs' learning and that CTs valued the interaction and sharing of new ideas with the PCTs.

Implications Moving Forward

Implications for moving forward are clear. SL has the capacity to be a valuable tool and method to integrate MI into the school day as part of a CSPAP program. Additionally, distance delivery needs to be explored further as way to implement MI as an alternative to face-to-face SL in teacher education. However, universities need to make scheduling and student placements a priority. CTs value the mutual benefit and

learning and sharing new content ideas that PCTs provide as part of the SL experience. Using SL-related MI helps to fill a gap where teacher training may have fallen short.

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APPENDIX A

BACKGROUND QUESTIONNAIRE (PCT)

Directions
Please complete all of the information requested below as best you can. If there is a question that does not apply to you, please leave it blank.

1. Name _____

2. Age ____

3. Sex (circle one) M / F

4. Race (circle one)
Asian
African American
Hispanic
White Caucasian
Other (please specify) _____

5. Year in school (circle one)
Freshman
Sophomore
Junior
Senior
Graduate

6. Academic Major (circle one)
Elementary Education
Early Childhood Education
Other (please specify) _____

7. About how many hours have you spent doing observations at schools as part of your teacher education program? (circle one)

0 hrs 1-10 hrs 11-20 hrs 21-30 hrs 31-40 hrs 41-50 hrs More than 50 hrs

8. About how many hours have your spent tutoring or teaching small groups of children as part of your teacher education program? (circle one)

0 hrs 1-10 hrs 11-20 hrs 21-30 hrs 31-40 hrs 41-50 hrs More than 50 hrs

9. About how many hours have you spent teaching whole classes of children as part of your teacher education program? (circle one)

0 hrs 1-10 hrs 11-20 hrs 21-30 hrs 31-40 hrs 41-50 hrs More than 50 hrs

10. What is your level of experience with lesson planning? (circle one)

No experience Very little experience A moderate amount of experience A lot of experience

11. Outside of PEDU 575, have you taken or are you currently taking any other educational courses related to children and physical activity? (circle one) Yes / No
If yes, please describe the course(s).

12. Have you ever taken or are you currently enrolled in any physical activity courses at the university (e.g., tennis, dance, jogging, karate, etc.)? (circle one) Yes / No

13. Have you ever taught/coached in a physical activity setting (e.g., physical education, interscholastic sports, recreational leagues, etc.)? (circle one) Yes / No
If yes, please explain.

14. Have you ever competed or do you currently compete in any organized sports (e.g., varsity teams, intramurals, road racing, etc.)? (circle one) Yes / No
If yes, please briefly describe your participation experience.

15. Please list any other physical activities you have participated in within the last month at least once a week. Also indicate how many times per week you participated in each activity and how much you typically exerted yourself when participating in each activity. (Light = Barely broke a sweat; Moderate = Pushed myself but still felt comfortable; Vigorous = Approached exhaustion)

Activity	How many times per week did you participate in the activity?	Typically, how intense was your level of exertion when participating in the activity?
1.	1 2 3 4 5 6 7	Light Moderate Vigorous
2.	1 2 3 4 5 6 7	Light Moderate Vigorous
3.	1 2 3 4 5 6 7	Light Moderate Vigorous
4.	1 2 3 4 5 6 7	Light Moderate Vigorous
5.	1 2 3 4 5 6 7	Light Moderate Vigorous

16. Please respond to each of statements below using the scale indicated.

(1 = *strongly disagree* - 4 = *strongly agree)*		***SD***	***D***	***A***	***SA***
16.1.	I like to exercise.	1	2	3	4
16.2.	I am physically active.	1	2	3	4
16.3.	I like being physically active.		1	2	3 4
16.4.	I was good at physical education.	1	2	3	4
16.5.	My elementary physical education experiences were positive.	1	2	3	4
16.6.	My middle school physical education experiences were positive.	1	2	3	4
16.7.	My high school physical education experiences were positive.	1	2	3	4
16.8.	I have a good level of muscular strength.	1	2	3	4
16.9.	I have a good level of endurance.	1	2	3	4

APPENDIX B

BACKGROUND QUESTIONNAIRE (CI)

Directions
Please complete all of the information requested below as best you can. If there is a question that does not apply to you, please leave it blank.

1. Name _____

2. Age ____

3. Sex (circle one) M / F

4. Race (circle one)
Asian
African American
Hispanic
White Caucasian
Other (please specify) _____

5. How many years K -12 teaching experience do you have? _____

6. How many years and at what levels are your K – 12 teaching experience? (Check all that apply)
____ Early Childhood (Pre-K) _____ years
____ Elementary (K-6) _____ years
____ Middle School (Grades 7-8) _____ years
____ High School (9-12) _____ years

7. How many years' experience teaching college level courses do you have? _____

8. Have you ever taught/coached in a physical activity setting (e.g., physical education, interscholastic sports, recreational leagues, etc.)? (circle one)
Yes / No
If yes, please explain.

9. Have you ever competed or do you currently compete in any organized sports (e.g., varsity teams, intramurals, road racing, etc.)? (circle one)
Yes / No
If yes, please briefly describe your participation experience.

10. Please list any other physical activities you have participated in within the last month at least once a week. Also indicate how many times per week you participated in each activity and how much you typically exerted yourself when participating in each activity. (Light = Barely broke a sweat; Moderate = Pushed myself but still felt comfortable; Vigorous = Approached exhaustion)

Activity	**How many times per week did you participate in the activity?**	**Typically, how intense was your level of exertion when participating in the activity?**
1.	1 2 3 4 5 6 7	Light Moderate Vigorous
2.	1 2 3 4 5 6 7	Light Moderate Vigorous
3.	1 2 3 4 5 6 7	Light Moderate Vigorous
4.	1 2 3 4 5 6 7	Light Moderate Vigorous
5.	1 2 3 4 5 6 7	Light Moderate Vigorous

11. Please respond to each of statements below using the scale indicated.

(1 = *strongly disagree* - 4 = *strongly agree)*		***SD***	***D***	***A***	***SA***
11.1.	I like to exercise.	1	2	3	4
11.2.	I am physically active.	1	2	3	4
11.3.	I like being physically active.	1	2	3	4
11.4.	I was good at physical education.	1	2	3	4
11.5.	My elementary physical education experiences were positive.	1	2	3	4
11.6.	My middle school physical education experiences were positive.	1	2	3	4
11.7.	My high school physical education experiences were positive.	1	2	3	4
11.8.	I have a good level of muscular strength.	1	2	3	4
11.9.	I have a good level of endurance.	1	2	3	4

APPENDIX C

BACKGROUND QUESTIONNAIRE (CT)

Directions

Please complete all of the information requested below as best you can. If there is a question that does not apply to you, please leave it blank.

1. Name _____

2. Age ____

3. Sex (circle one) M / F

4. Race (circle one) Asian
African American
Hispanic
White Caucasian
Other (please specify) _____

5. How many years K -12 teaching experience do you have? _____

6. How many years and at what levels are your K – 12 teaching experience? (Check all that apply)

____ Early Childhood (Pre-K)	**_____ years**
____ Elementary (K-6)	**_____ years**
____ Middle School (Grades 7-8)	**_____ years**
____ High School (9-12)	**_____ years**

7. How many years' experience teaching college level courses do you have?

_____

8. Have you ever taught/coached in a physical activity setting (e.g., physical education, interscholastic sports, recreational leagues, etc.)? (circle one) Yes / No

If yes, please explain

9. Have you ever competed or do you currently compete in any organized sports (e.g., varsity teams, intramurals, road racing, etc.)? (circle one) Yes / No
If yes, please briefly describe your participation experience.

10. Please list any other physical activities you have participated in within the last month at least once a week. Also indicate how many times per week you participated in each activity and how much you typically exerted yourself when participating in each activity. (Light = Barely broke a sweat; Moderate = Pushed myself but still felt comfortable; Vigorous = Approached exhaustion)

Activity	**How many times per week did you participate in the activity?**	**Typically, how intense was your level of exertion when participating in the activity?**
1.	1 2 3 4 5 6 7	Light Moderate Vigorous
2.	1 2 3 4 5 6 7	Light Moderate Vigorous
3.	1 2 3 4 5 6 7	Light Moderate Vigorous
4.	1 2 3 4 5 6 7	Light Moderate Vigorous
5.	1 2 3 4 5 6 7	Light Moderate Vigorous

11. Please respond to each of statements below using the scale indicated.

(1 = *strongly disagree* - 4 = *strongly agree)*		***SD***	***D***	***A***	***SA***
11.1.	I like to exercise.	1	2	3	4
11.2.	I am physically active.	1	2	3	4
11.3.	I like being physically active.	1	2	3	4
11.4.	I was good at physical education.	1	2	3	4
11.5.	My elementary physical education experiences were positive.	1	2	3	4
11.6.	My middle school physical education experiences were positive.	1	2	3	4
11.7.	My high school physical education experiences were positive.	1	2	3	4
11.8.	I have a good level of muscular strength.	1	2	3	4
11.9.	I have a good level of endurance.	1	2	3	4

APPENDIX D

FOCUS GROUP INTERVIEW PROTOCOL STUDY ONE

Directions

The purpose of this focus group interview is to understand your experiences related to integrating physical activity in elementary school classrooms this semester as part of the PEDU 575 course. The interview will focus on your experiences in terms of both planning and implementation. The interview is organized using a semi-structured format, which means I will ask pre-designed questions but will also leave room for expansion and probes to better explore your responses. The interview will last approximately 1-hour and will be audio recorded as part of a study being conducted.

When answering a question or making a comment, please say your name first each time. This will help us to transcribe the audio file with accuracy.

Questions

1. Describe your experience as a whole this semester planning and implementing the classroom physical activity assignments.
    a. What did you find particularly enjoyable?
    b. What, if anything, did you particularly dislike?

2. What are the major success stories from your perspective?
    a. What enabled you to be successful in these situations? (Provide examples as probes, if needed: school environment, team membership, available resources, etc.)

3. Which aspects or components of the course were most helpful in your preparation and learning related to integrating physical activity into elementary classrooms?
    a. How did our class meetings at USC help you to prepare?
    b. How did your school-based experiences help you to prepare?

4. What, if anything, stands out as particularly unsuccessful?
    a. What do you believe were the causes or barriers to more successful planning and implementation? (Provide examples as probes, if needed: school environment, team membership, available resources, etc.)

5. If you had the chance to do everything again, what, if anything, would you change about your approach to planning and implementing these assignments?
    a. Explain your reasoning.

6. Overall, what are the major "take home" messages for you based on your planning and implementation experiences this semester?

7. Would you be willing to implement classroom physical activity opportunities as a practicing teacher?
    a. What skills or other attributes do you feel you have for doing this?
    b. What other factors do you think would support your efforts?
    c. What barriers do you perceive in doing this?

8. At this point in your program of study, how do you feel about classroom teachers becoming involved with physical activity promotion?
    a. Should the classroom teacher focus exclusively on students' academics, or should this teacher also play a role in students' daily physical activity? Explain your reasoning.

APPENDIX E

INTERVIEW GUIDELINES FOR ELEMENTARY STUDENT

The interviews of inservice classroom teachers, and course instructors, are intended to obtain their observations and reactions from their participation as part of the service learning experiences related to movement integration. The specific course of the interview will be guided as indicated in the instructions to the participating teachers below.

A standardized format will be used for the interview schedule. Each participant will be asked the same questions in the same way, except from the follow-up probes that will be utilized in order to elaborate and clarify some responses. However, the sequence of some questions will vary according to the flow of the conversation. Thus, while the interview is structured and standardized, flexibility in relating the interview to the participants and the experiences will not be compromised. This allows rapport, depth and clarification of responses not anticipated.

The purpose of this interview is to get your professional opinions and attitudinal reactions to the participation and experiences in the service-learning portion, as part of the student teaching internship. It is most important from our perspective to talk about what you think is most important to talk about in order to get an accurate idea of your beliefs.

The information you provide will be coded only by an arbitrary code number assigned to you. Only summaries of what all the participating teachers say collectively will be used when data are disseminated. In any future reports, presentations or publications about this research, any quotes or paraphrases from participating teachers will be identified only by a pseudonym.

We will audio record these interviews and transcribe the recordings as part of our analyses. We can provide you with a copy of the recording and transcript of your interviews if you wish. We will share any reports generated as part of the research with you.

You may stop the interview at any time if you want to.

Before we start, can you tell me what you are studying? What experiences do you have related to teaching?

1. How was your experience on participating in service learning experiences related to movement integration?
   - What impact did it have on your training as a teacher?

2. What were your expectations about participating in the service learning experiences related to movement integration?

   - Were they realized?

3. What did you like about it? – WHY?

4. What didn't you like about it? – WHY?

5. What challenges did you face?

6. How did you overcome those challenges?

   -where those challenges evident only at the beginning or throughout your participation period?

7. What would you change about the experience?

8. How was your interaction with the preservice teacher?

9. What impact did the experience have on you in order to use classroom-based PA in the future in your class?

   - WHY? (what are the reasons?)

You have given me a lot of useful information about the service-learning experience and movement integration. Do you think there is something else you would like to add, something that we haven't been referred to?

APPENDIX F

INTERVIEW GUIDELINES FOR ELEMENTARY CLASSROOM TEACHERS

The interviews of inservice classroom teachers, and course instructors, are intended to obtain their observations and reactions from their participation as part of the service learning experiences related to movement integration. The specific course of the interview will be guided as indicated in the instructions to the participating teachers below.

A standardized format will be used for the interview schedule. Each participant will be asked the same questions in the same way, except from the follow-up probes that will be utilized in order to elaborate and clarify some responses. However, the sequence of some questions will vary according to the flow of the conversation. Thus, while the interview is structured and standardized, flexibility in relating the interview to the participants and the experiences will not be compromised. This allows rapport, depth and clarification of responses not anticipated.

The purpose of this interview is to get your professional opinions and attitudinal reactions to the participation and experiences in the service-learning portion, as part of the student teaching internship. It is most important from our perspective to talk about what you think is most important to talk about in order to get an accurate idea of your beliefs.

The information you provide will be coded only by an arbitrary code number assigned to you. Only summaries of what all the participating teachers say collectively will be used when data are disseminated. In any future reports, presentations or publications about this research, any quotes or paraphrases from participating teachers will be identified only by a pseudonym.

We will audio record these interviews and transcribe the recordings as part of our analyses. We can provide you with a copy of the recording and transcript of your interviews if you wish. We will share any reports generated as part of the research with you.

You may stop the interview at any time if you want to.

Before we start, can you tell me what you are studying? What experiences do you have related to teaching?

2. How was your experience on participating in service learning experiences related to movement integration?
   - What impact did it have on your training as a teacher?

2. What were your expectations about participating in the service learning experiences related to movement integration?

   - Were they realized?

3. What did you like about it? – WHY?

4. What didn't you like about it? – WHY?

5. What challenges did you face?

6. How did you overcome those challenges?

-where those challenges evident only at the beginning or throughout your participation period?

7. What would you change about the experience?

8. How was your interaction with the preservice teacher?

9. What impact did the experience have on you in order to use classroom-based PA in the future in your class?

   - WHY? (what are the reasons?)

You have given me a lot of useful information about the service-learning experience and movement integration. Do you think there is something else you would like to add, something that we haven't been referred to?

APPENDIX G

INTERVIEW GUIDELINES FOR COURSE INSTRUCTORS

Directions

The purpose of this interview is to understand your experiences related to teaching the PEDU 575 course this semester, particularly with respect to the service learning component of PACES. The interview is organized using a semi-structured format, which means I will ask pre-designed questions but will also leave room for expansion and probes to better explore your responses. The interview will last approximately 1-hour and will be audio recorded as part of the PACES research.

Questions

1. Describe your experience as a whole this semester teaching the PEDU 575 course.
    a. What did you find particularly enjoyable?
    b. What, if anything, did you particularly dislike?

2. Describe your experiences with respect to the service learning component of PACES.
    a. What are the major success stories from your perspective? (Examples include scheduling with the students/schools, feeling that the students were well prepared to conduct the service learning assignments, and feeling that the cooperating teachers had a positive experience with the collaboration.)
    b. What facilitated these successes? (Provide examples as probes, if needed: students in the class, teaching experience, available resources, etc.)
    c. What were the major challenges?

3. If you had the chance to do everything again, what, if anything, would you change about your approach to teaching the course?
    a. Explain your reasoning.
    b. What, if anything, would you change to improve the service learning component of the course?

4. Overall, what are the major "take home" messages for you based on your experience teaching PEDU 575 this semester?
    a. What do you believe are the most effective ways to prepare the students to promote classroom-based physical activity?

b. What do you believe are the most effective ways to facilitate the service learning component of the course?

APPENDIX H

FOCUS GROUP INTERVIEW PROTOCOL STUDY TWO

The focus group will be conducted online in real time using SKYPE. As part of the syllabus all students are required to have access to a computer, microphone, and have installed the program SKYPE. The end of semester interview is voluntary and is not included into calculation of the students overall grade in the course.

Directions

The purpose of this focus group interview is to understand your experiences related to service learning as an approach to integrating physical activity in elementary school classrooms this semester as part of the PEDU 575 course. The interview will focus on your experiences in terms of service learning components, as well as success and barriers to both planning and implementation of movement integration. The interview is organized using a semi-structured format, which means I will ask pre-designed questions but will also leave room for expansion and probes to better explore your responses. The interview will last approximately 1-hour and will be audio recorded as part of a study being conducted.

When answering a question or making a comment, please say your name first each time. This will help us to transcribe the audio file with accuracy.

Questions

9. Describe your feelings related to physical activity in general.
    a. What does physical activity mean to you?
    b. How has your understanding of physical activity changed as a result of taking this course?
    c. How have your feelings about physical changed as a result of taking this course?

10. Describe your feelings related to promoting physical activity for children.
    a. What does promoting children's physical activity mean to you?
    b. How has your understanding of children's physical activity promotion changed as a result of taking this course?
    c. How have your feelings about promoting children's physical activity changed as a result of taking this course?

11. Describe your feelings related to integrating movement opportunities for children in the general education classroom setting.

a. What does movement integration mean to you?
b. How has your understanding of movement integration changed as a result of taking this course?
c. How have your feelings about movement integration changed as a result of taking this course?

12. Describe your experience as a whole this semester with the distance delivery method of learning to integrate movement for children in the general education classroom setting.

    a. What made the distance delivery format favorable?
    b. What made the distance delivery format challenging?

13. Describe your experiences fulfilling the course requirements during the student teaching internship semester.

    a. What were the advantages of taking this course during student teaching?
    b. What were the disadvantages of taking this course during student teaching?

14. Describe your experiences interacting with classmates during the course.

    a. How did these experiences help you in learning to integrate movement in a general education classroom?
    b. What could be improved in the way student-to-student interaction opportunities were designed and approached in the course?

7. Describe your experiences interacting with the course instructor during the course.

    a. How did these experiences help you in learning to integrate movement in a general education classroom?
    b. What could be improved in the way instructor-student interaction opportunities were designed and approached in the course?

8. Describe your experiences interacting with your coaching teacher and other professionals at your school during the course.

    c. How did these experiences help you in learning to integrate movement in a general education classroom?
    d. What could be improved in the way student-school professional interaction opportunities were designed and approached in the course?

9. What were the most helpful aspects of the course with respect to your learning to integrate movement in a general education classroom?
    a. Readings?
    b. Lectures?
    c. Observation guide assignments?
    d. Reflections/discussion boards?
    e. Move for Thought community of practice?
    f. Videoconferences?
    g. Implementation plans?
    h. Quizzes?
    i. Exam?

10. Would you be willing to implement classroom physical activity opportunities as a practicing teacher?
    a. What skills or other attributes do you feel you have for doing this?
    b. What other factors do you think would support your efforts?
    c. What barriers do you still perceive in doing this?

APPENDIX I

EMAIL TO COOPERATING TEACHERS

Dear [Cooperating teacher's name],

My name is Dan Michael, and I am conducting research at the University of South Carolina and I am examining perspectives of using service-learning as a way to incorporate physical activity in the elementary classroom. Since you are the cooperating teacher for a service-learning student that is in enrolled in PEDU 575, I would like to know if you would be willing to participate in the study by participating in an end of semester interview. If you have any questions I can be reached at 619-803-9843 or by email at rmichael@email.sc.edu. Please respond by indicating that you are willing to participate or that you decline.

Thank you,

Dan Michael

APPENDIX J

EMAIL TO PRESERVICE TEACHERS

Dear [PCT's name],

My name is Dan Michael, and I am conducting research at the University of South Carolina and I am examining perspectives of using service-learning as a way to incorporate physical activity in the elementary classroom. Since you are a preservice classroom teacher that is enrolled in PEDU 575, I would like to know if you would be willing to participate in the study by participating in an end of semester interview as well as participate as participant observer during course correspondence and Skype sessions. If you have any questions I can be reached at 619-803-9843 or by email at rmichael@email.sc.edu. Please respond by indicating that you are willing to participate or that you decline.

Thank you,

Dan Michael

APPENDIX K

FIDELITY CHECKLIST

Components to be observed	Evidence collected	Yes	No
Fidelity (Quality)			
Extent to which intervention was implemented and planned	• Obtained syllabus	X	
	• Blackboard discussion posts	X	
	• M4T blog posts	X	
	• Signed implementation sheets	X	
	• Interview transcripts	X	
Dose Delivered (completeness)			
Amount or number of intended units of each intervention or component delivered or provided by interventionists.	• Course outline (syllabus)	X	
	• Researcher observation field notes	X	
	• Signed implementation sheets	X	
Participant (primary and secondary audiences) satisfaction with program, interactions with staff and/or investigators	• Stakeholder interviews transcripts	X	

APPENDIX L

COURSE CALENDAR STUDY ONE

Major Course Objectives:
As a result of successful participation in this course, students should be able to:

1. Rationalize the importance of physical activity for children in terms of public health and educational goals.
2. Explain the unique role of physical education in the total education of the child.
3. Describe the characteristics of a quality elementary physical education program.
4. Differentiate between appropriate and inappropriate physical education practices.
5. Discuss the various roles the early childhood/elementary classroom teacher can play in promoting children's physical activity at school.
6. Demonstrate competency in performing the following school-based physical activity promotion tasks:
    a. Use policy and research to advocate for physical activity
    b. Assess children's physical activity behavior
    c. Design a recess plan/environment that encourages physically active behavior
    d. Design and teach a classroom lesson with integrated physical activity
    e. Lead a physical activity break in a classroom environment
    f. Champion children's physically active accomplishments

Assessment of Learning:
Class Participation
Class participation will be assessed in two ways: (a) in-class work and (b) professionalism. *In-class work* will involve activities students must complete in class and submit for credit before leaving class. If students are absent on days where in-class assignments are given and due then the student will receive no credit. *Professionalism* constitutes numerous student behaviors, such as attending all scheduled class meetings, being on time to class, leaving class only when dismissed by the instructor, taking responsibility for personal conduct and course-related performance, actively engaging in class discussions and activities, refraining from the use of cell phones during class, and demonstrating open-mindedness and willingness to learn. Professionalism will not be graded per se,

but will be taken into account holistically when the instructor calculates the student's final course grade (e.g., 89.99 = B+ or A). Students repeatedly showing poor professionalism will be issued a warning followed by point deductions as the instructor sees fit.

Assignments*

Students will be given the opportunity to develop the necessary skills to promote school-based physical activity in line with the course objectives by successfully completing the following assignments:

1. *Philosophy Statement*: A personal teaching philosophy.
2. *Observations*: Observe in a physical activity setting.
3. *Active Lessons*: Plan and teach a short academic lessons with integrated physical activity to our class of children in an elementary/early childhood setting
4. *Movement Break Presentations:* Lead a physical activity break with a class of children in an elementary/early childhood setting.
5. *Move for Thought Blog:* Participate in the online learning community. Post 5 blog posts.
6. *Lesson plans:* Lesson plans developed for the movement breaks and active lessons.
7. *Portfolio:* Final project worked on continuously throughout the semester including development of personalized website.
8. *Reflections:* Complete reflections on your out of class experiences based on your implementations of the movement breaks and active classroom lessons.
9. *Class Readings:* read all class readings, be prepared to have class discussions, see quiz section below.

Day(s)	Lesson/PPT [course objectives]	Readings & PPT	Constructivist principles	Learning experiences, assignments, assessments
1	Course orientation, syllabus, and service learning.	Win Forever Ch2 *PPT: First Day*	Social interaction plays a role in learning.	
2	Teaching Philosophy/ Promoting PA [1,2,5]	Schoolwide PA Ch. 1 *PPT: What is*	Teachers challenge students' existing beliefs	Small group discussions Partner work

	Elementary physical education [3,4,5]	*Philosophy & Promoting PA*	and understandings through meaningful, stimulating, interesting, and relevant instructional tasks	(think-pair-share)
3	Classroom Management [6d]	*PPT: Classroom Management*	Learning is situated in the context in which it occurs	*Philosophy paper* Small group discussions
4	Lesson Plans & Movement Breaks LETUS Play & Resources [6a,b,e,f]	*PPT: LETUS Play & Mvt Breaks*	Students must engage in activities that enable them to evaluate alternative solutions as a means of testing and enriching their understanding	Small group discussions
5	Student taught Movement breaks [6a,e,f]	Linking PA to Academics Student presentations	Students must engage in activities that enable them to evaluate alternative solutions as a means of testing and enriching their understanding	*Movement break presentation due plus copies*
6	Student taught Movement breaks [6a,e,f]	Student presentations	Students must engage in activities that enable them to	*Movement break presentation due plus*

			evaluate alternative solutions as a means of testing and enriching their understanding	*copies*
7	Recess; Lesson Plans; Active Lessons [6b,c]	*PPT: Promoting PA at Recess* *PPT: Developing a Lesson Plan*	Learning is an adaptive activity. Students must engage in activities that enable them to evaluate alternative solutions as a means of testing and enriching their understanding	Small group discussions Partner work (think-pair-share)
8	Lesson Planning [6d]		Learning is an adaptive activity Learning is situated in the context in which it occurs	*Lesson plan due*
9	Student taught active lesson [6d,f]	Getting Kids Moving	Embed learning in realistic and relevant contexts Learning is a social activity Social interaction	*Active lessons*

			plays a role in learning. Provide opportunity for and support reflection on both the content learned and the learning process	
10	*Student Taught Active Lesson* [6d,f]		Embed learning in realistic and relevant contexts Learning is a social activity Social interaction plays a role in learning. Provide opportunity for and support reflection on both the content learned and the learning process	*Active lessons*
11	Observations [A1]	*Release day*	Embed learning in social experiences Dialogue	*Classroom observation*

			within a community engenders further thinking. The classroom should be a "community of discourse engaged in activity, reflection, and conversation."	
12	*Classroom Environment, Space [2,3]*	Promoting PA in Early Childhood	Design the task and the learning environment to reflect the complexity of the environment they should be able to function in at the end of learning	*Observation Assignment Due* Partner work (think-pair-share)
13	Service Learning Teaching [A3,4]	Release Day	Embed learning in realistic and relevant contexts Learning is a social activity Social interaction plays a role in learning. Provide	*SL field experience*

			opportunity for and support reflection on both the content learned and the learning process	
14	Debriefing Session		Students take responsibility for determining the topics or subtopics in a domain they pursue.	Small group discussions Partner work (think-pair-share) *Reflection Due*
15	Service Learning Teaching [A3,4]	Release Day	Embed learning in realistic and relevant contexts Learning is a social activity Social interaction plays a role in learning. Provide opportunity for and support reflection on both the content learned and the learning process	*SL field experience*
16	Active lessons	Active lessons	Provide	*Move for*

		Instructor demo	opportunity for and support reflection on both the content learned and the learning process	*thought Blog posts-1*
17	In class active movement lesson Video-taped assignment [6d,f]	Student presentations	Embed learning in realistic and relevant contexts Learning is a social activity Social interaction plays a role in learning. Provide opportunity for and support reflection on both the content learned and the learning process	*Active Lessons*
18	Service Learning teaching [A3,4]	*Release day*	Embed learning in realistic and relevant contexts Learning is a social activity Social	*SL field experience Move for thought Blog posts-2*

			interaction plays a role in learning. Provide opportunity for and support reflection on both the content learned and the learning process	
19	In class active movement lesson Video-taped assignment [6d,f]	Student presentations	Embed learning in realistic and relevant contexts Learning is a social activity Social interaction plays a role in learning. Provide opportunity for and support reflection on both the content learned and the learning process	*Active Lessons 1st group Midterm Due*
20	Service Learning teaching [A3,4]	*Release day*	Embed learning in realistic and relevant contexts	*SL field experience Move for thought Blog posts-3*

			Learning is a social activity Social interaction plays a role in learning. Provide opportunity for and support reflection on both the content learned and the learning process	
21	In class active movement lesson Video-taped assignment [6d,f]	Student presentations	Embed learning in realistic and relevant contexts Learning is a social activity Social interaction plays a role in learning. Provide opportunity for and support reflection on both the content learned and the learning process	*Active Lessons 2nd Group Midterm Due*

22	Service Learning teaching [A3,4]	*Release day*	Embed learning in realistic and relevant contexts Learning is a social activity Social interaction plays a role in learning. Provide opportunity for and support reflection on both the content learned and the learning process	*SL field experience Move for thought Blog posts-4*
23	***NO CLASS ELECTION DAY***			*3rd Group Midterm Due*
24	In class active movement lesson Video-taped assignment [6d,f]	Student presentations	Embed learning in realistic and relevant contexts Learning is a social activity Social interaction plays a role in learning. Provide	*Active Lessons*

			opportunity for and support reflection on both the content learned and the learning process	
25	SL debrief PCT concerns [1,2,3,4,5]	Student decided content	Students take responsibility for determining the topics or subtopics in a domain they pursue.	Small group discussions Partner work (think-pair-share)
26	Service Learning Teaching [A3,4]	*Release day*	Embed learning in realistic and relevant contexts Learning is a social activity Social interaction plays a role in learning. Provide opportunity for and support reflection on both the content learned and the learning process	*SL field experience Move for thought Blog posts-5*
27	Classroom management [6d]	Student decided content	Students take responsibility	Small group discussions

			for determining the topics or subtopics in a domain they pursue.	Partner work (think-pair-share)
28	SL debrief PCT concerns [1,2,3,4,5]	Student decided content	Students take responsibility for determining the topics or subtopics in a domain they pursue.	Small group discussions Partner work (think-pair-share)
29	Service Learning Teaching [A3,4]	*Release day*	Embed learning in realistic and relevant contexts Learning is a social activity Social interaction plays a role in learning. Provide opportunity for and support reflection on both the content learned and the learning process	*SL field experience* Final Exam Portfolio due

APPENDIX M

COURSE CALENDAR STUDY TWO

Learning Outcomes

The student who successfully completes PEDU 575 will be able to:

7. Rationalize the importance of physical activity for children in terms of public health and educational goals.
8. Conceptualize a whole-of-school approach to physical activity promotion.
9. Explain the unique role of each component in a comprehensive school physical activity program (CSPAP).
10. Describe the characteristics of a quality elementary physical education program.
11. Rationalize the importance of generalist classroom teachers in children's physical activity promotion.
12. Discuss the various roles generalist classroom teachers can play in promoting children's physical activity at school.
13. Demonstrate competency in performing the following school-based physical activity promotion tasks:
    a. Use policy and research to advocate for CSPAPs
    b. Design and implement a recess plan to stimulate physically active behavior
    c. Plan and lead classroom-based physical activity experiences

Modular Schedule

This course is divided into two modular phases. The first phase of the course (Modules 1-4) will focus on the current landscape of policy, guidelines, research, and recommendations related to promoting children's physical activity, with an emphasis on the school setting and a primary focus on general education classrooms. Students will complete assigned readings, watch the lectures, respond to reflection questions, respond to other students' posts on the discussion board, take the quizzes on Blackboard, and

conduct observations of scheduled recesses, normal classroom time, and physical education lessons at an elementary school. All materials for each module (readings, the lecture, the reflection questions, the quiz, and the observation guides) will be posted on Blackboard no later than the beginning of each week by Sunday at 11pm). All student work for the week (completing assigned readings, watching the lecture, responding to the reflection questions, responding to other students' posts, taking the quiz, and conducting observations) should be completed at the end of each week by Friday at 11pm.

The second phase of the course (Modules 5-8) will focus on preparing and implementing school-based physical activity promotion assignments. Students will prepare plans (plan templates can be found on Blackboard) and implement strategies for (a) advocating for children's school-based physical activity with school professionals and (b) increasing children's school-based physical activity at recess and in general education classrooms. By Sunday at 11pm each week, the plans for the scheduled implementations should be uploaded to Blackboard. By Friday at 11pm each week, evidence of having completed the implementations must be uploaded to Blackboard. This evidence will be in the form of a cooperating teacher's evaluation and signature (the evaluation form can be found on Blackboard). During this phase of the course, students will also participate in an online community of practice (Move for Thought) for preservice/inservice classroom teachers. Participation will involve responding to reflection questions using the website forum and responding to forum posts by other community members on the website. Responses to the reflection questions should be posted by Friday at 11pm each week. Responses to other people's blog posts should be posted by Sunday at 11pm each week. Finally, students will be assigned to small groups and will participate in a group

videoconference call (using Skype) with the course instructor during each module. Student groups should arrange to videoconference with the instructor at times that are convenient to their schedules and participate in the call by Friday at 5pm each week.

Further detail regarding the course assessments can be found in the sections below. Please note that instructions for posting to Blackboard and the Move for Thought website can be found on the Blackboard site. The course instructor will post the scoring guides used to evaluate students' work for all assessments on Blackboard in the Assignments folder (see the sections below for further detail). If you have any trouble, be sure to contact your instructor for help.

Responses to reflection questions on the Blackboard discussion board and Move for Thought website

Each week students will be required to post responses to reflection questions. Students will post their responses on the Blackboard discussion board during the first phase of the course (Modules 1-4) and on the Move for Thought forum during the second phase of the course (Modules 5-8). In the first phase of the course, the reflection questions will focus on the assigned readings, the lecture for that week, and the school-based observations. In the second phase of the course, reflection questions will focus on the students' experiences planning/implementing strategies to increase school-based physical activity promotion. The scoring guide used to evaluate students' responses to reflection questions can be found on Blackboard in the Assignments folder. For Modules 1-4, reflection questions will be posted to Blackboard discussion board. For Modules 5-8, reflection questions will be posted as a new discussion in the forum on the Move for Thought website. For each module (1-8), reflection questions will be posted at the

beginning of the week by Sunday at 11pm. Responses to the reflection questions should be posted by Friday at 11pm each week.

Responses to peers'/others' posts on the Blackboard discussion board and the Move for Thought website

In each module students will be required to post responses to 3 other people's Blackboard/Move for Thought posts. Students will post their responses on the Blackboard discussion board during the first phase of the course (Modules 1-4) and on the Move for Thought blog during the second phase of the course (Modules 5-8). Responses can focus on providing an alternative perspective, sharing stories of personal experiences, asking questions to further the discussion, providing additional resources, and/or discussing reasons for agreeing/disagreeing (courteously) with another person's post. The scoring guide used to evaluate students' responses to peers'/others' posts can be found on Blackboard in the Assignments folder. Responses to others' posts should be posted to Blackboard/Move for Thought by Sunday at 11pm each week.

Quizzes on Blackboard

In each module during the first phase of the course (Modules 1-4), students will be required to take a quiz posted on Blackboard. The quiz will focus on the content of the assigned readings and the lecture for that week. Students must submit the name and contact information of a person who can act as a proctor before taking quizzes. Appropriate proctors include employers, work supervisors, professors, or other professionals in authority roles. For each module, the quiz will be posted to Blackboard at the beginning of the week by Sunday at 11pm. Students should take the quiz under the supervision of the approved proctor by Friday at 11pm each week.

School-Based Observations

In each module during the first phase of the course (Modules 1-4), students will be required to conduct an observation in an elementary school. In Module 1, the observation will focus on 4 scheduled recesses. In Module 2, the observation will focus on 3 physical education lessons. In Modules 3 and 4, the observations will focus on 6 hours of normal classroom time in a general education classroom (two hours for each module). The observation guides can be found on Blackboard in the Assignments folder. For each module, the student must have a cooperating teacher at the school sign the completed observation guide and the student should post the completed and signed guide to Blackboard by Friday at 11pm.

Plans

In each module during the second phase of the course (Modules 5-8), students will be required to prepare plans for implementing strategies to promote school-based physical activity. In Module 5, the plans will focus on implementing strategies to advocate for children's school-based physical activity with school professionals and strategies to increase children's physical activity during normal classroom time in a general education classroom. In Module 6, the plans will focus on implementing strategies to increase children's school-based physical activity during a scheduled recess and during normal classroom time in a general education classroom. In Modules 7 and 8, the plan will focus on implementing strategies to increase children's physical activity in a general education classroom. The plan templates and scoring guide used to evaluate students' plans can be found on Blackboard in the Assignments folder. For each module the plans should be posted to Blackboard using SafeAssign by Sunday at 11pm.

Implementations

In each module during the second phase of the course (Modules 5-8), students will be required to implement their planned strategies to promote school-based physical activity. In Module 5, the implementation will focus on planned strategies to advocate for children's school-based physical activity with school professionals and increase children's physical activity during normal classroom time in a general education classroom. In Module 6, the implementation will focus on planned strategies to increase children's school-based physical activity during a scheduled recess and during normal classroom time in a general education classroom. In Modules 7 and 8, the implementations will focus on planned strategies to increase children's physical activity during normal classroom time in a general education classroom. In each module the student must have a cooperating teacher at the school complete and sign an evaluation form (this can be found on Blackboard in the Assignments folder) for each implementation and the student should post the completed and signed forms to Blackboard by Friday at 11pm (*except for Module 8, in which the student should post the completed and signed forms to Blackboard by Tuesday at 11pm*).

Video Conferences

In each module during the second phase of the course (Modules 5-8), students will be required to meet virtually with the course instructor and other students in the class as part of a small group through a 30-minute video conference call using Skype. The purpose of the videoconference will be to discuss the students' experiences planning/implementing physical activity promotion strategies, identify highlights and challenges, and develop initial strategies for the following week's implementations.

Students should arrange to videoconference with the instructor at times that are convenient to their schedules and participate in the call by Friday at 5pm each week (*except for Module 8, in which the student should participate in the call by Tuesday at 5pm*).

Exam

Students are required to take a comprehensive exam in the final module of the course (Module 8). The exam will be posted to Blackboard at the beginning of the week by Sunday at 11pm. Students must submit the name and contact information of a person who can act as a proctor before taking the exam. Appropriate proctors include employers, work supervisors, professors, or other professionals in authority roles. Students should complete the exam under the supervision of the approved proctor by the end of the week no later than Tuesday at 11pm.

Review of Research (Graduate Students Only)

Graduate students enrolled in the course will complete a review of research paper on a topic related to physical activity promotion through schools. The course professor/instructor will correspond with each graduate student via email, phone, and/or Skype to identify an acceptable review topic. The review should be submitted no later than the end of Module 8.

Course Schedule				
Module	**Topic and Learning Outcome(s)**	**Assignments**	**Constructivism principles**	**Quality matters principles**
1 (Oct. 17-23)	Topic: Physical activity and children: Guidelines, trends, and recommendations Learning Outcome 1: Rationalize the importance of physical activity for children in terms of public health and educational goals.	Readings: Read "Physical Activity Guidelines for Americans Midcourse Report: Strategies to Increase Physical Activity Among Youth (Executive Summary)", ""Policies to Increase Youth Physical Activity in School and Community Settings", and "Educating the Student Body" (Chapter 2)	Students must engage in activities that enable them to evaluate alternative solutions as a means of testing and enriching their understanding	Instructions make clear how to get started and where to find various course components. Students are introduced to the purpose and structure of the course. All learning outcomes/objectives are stated clearly and written from the students' perspective. The learning outcomes/objectives are suited for the level of the course.
		Module 1 Lecture: Watch the lecture for the module posted on Blackboard.	Teachers challenge students' existing beliefs and understandings through meaningful, stimulating, interesting, and relevant instructional tasks	The instructional materials contribute to the achievement of the stated course and module/unit learning objectives and reflect an appropriate combination of student-instructor, student content, and student-student interactions.
		Reflection Questions: Answer the questions in the Module 1 forum on the Blackboard discussion board.	Provide opportunity for and support reflection on both the content learned and the learning process	The learning activities promote the achievement of the stated learning objectives.

		Responses to Others' Posts: Respond to 3 other students' reflection posts in the Module 1 forum on the Blackboard discussion board.	All knowledge is socially constructed. Social interaction plays a role in learning. Dialogue within a community engenders further thinking. The classroom should be a "community of discourse engaged in activity, reflection, and conversation."	Learning activities provide opportunities for interaction that support active learning.
		Quiz: Take the quiz for Module 1 on Blackboard.	Provide opportunity for and support reflection on both the content learned and the learning process	The assessments measure the stated learning outcomes/objectives.
		Observation: Conduct an observation of 4 scheduled recesses at an elementary school and submit the completed and signed observation guide on Blackboard.	Embed learning in realistic and relevant contexts	The learning activities promote the achievement of the stated learning objectives.
2 (Oct. 24-30)	Topic: Whole-of-school approaches to physical activity promotion Learning Outcome 2: Conceptualize a whole-of-school approach to physical activity promotion. Learning Outcome 3: Explain the unique role of	Readings: "Comprehensive School Physical Activity Programs: A Guide for Schools" and "Educating the Student Body" (Report at a Glance materials)	Students must engage in activities that enable them to evaluate alternative solutions as a means of testing and enriching their understanding	Instructions make clear how to get started and where to find various course components. Students are introduced to the purpose and structure of the course. All learning outcomes/objectives are

	each component in a comprehensive school physical activity program (CSPAP). Learning Outcome 4: Describe the characteristics of a quality elementary physical education program.			stated clearly and written from the students' perspective. The learning outcomes/objectives are suited for the level of the course.
		Module 2 Lecture: Watch the lecture for the module posted on Blackboard.	Teachers challenge students' existing beliefs and understandings through meaningful, stimulating, interesting, and relevant instructional tasks	The instructional materials contribute to the achievement of the stated course and module/unit learning objectives and reflect an appropriate combination of student-instructor, student content, and student-student interactions.
		Reflection Questions: Answer the questions in the Module 2 forum on the Blackboard discussion board.	Provide opportunity for and support reflection on both the content learned and the learning process	The learning activities promote the achievement of the stated learning objectives.
		Responses to Others' Posts: Respond to 3 other students' reflection posts in the Module 2 forum on the Blackboard discussion board.	All knowledge is socially constructed. Social interaction plays a role in learning. Dialogue within a community engenders further thinking. The classroom should be a "community of discourse engaged in activity, reflection, and conversation."	Learning activities provide opportunities for interaction that support active learning.

		Quiz: Take the quiz for Module 2 on Blackboard.	Provide opportunity for and support reflection on both the content learned and the learning process	The assessments measure the stated learning outcomes/objectives.
		Observation: Conduct an observation of 3 physical education lessons at an elementary school and submit the completed and signed observation guide on Blackboard.	Embed learning in realistic and relevant contexts	The learning activities promote the achievement of the stated learning objectives.
3 (Oct. 31-Nov. 6)	Topic: Helping classroom teachers learn to promote children's physical activity Learning Outcome 5: Rationalize the importance of generalist classroom teachers in children's physical activity promotion. Learning Outcome 6: Discuss the various roles generalist classroom teachers can play in promoting children's physical activity at school.	Readings: Read "The Role of Physical Educators in Helping Classroom Teachers to Promote Physical Activity" and "Preparing Classroom Teachers to Meet Students' Physical Activity Needs"	Students must engage in activities that enable them to evaluate alternative solutions as a means of testing and enriching their understanding	Instructions make clear how to get started and where to find various course components. Students are introduced to the purpose and structure of the course. All learning outcomes/objectives are stated clearly and written from the students' perspective. The learning outcomes/objectives are suited for the level of the course.
		Module 3 Lecture: Watch the lecture for the module posted on Blackboard.	Teachers challenge students' existing beliefs and understandings through meaningful, stimulating, interesting, and relevant instructional	The instructional materials contribute to the achievement of the stated course and module/unit learning objectives and

			tasks	reflect an appropriate combination of student-instructor, student content, and student-student interactions.
		Reflection Questions: Answer the questions in the Module 3 forum on the Blackboard discussion board.	Provide opportunity for and support reflection on both the content learned and the learning process	The learning activities promote the achievement of the stated learning objectives.
		Responses to Others' Posts: Respond to 3 other students' reflection posts in the Module 3 forum on the Blackboard discussion board.	All knowledge is socially constructed. Social interaction plays a role in learning. Dialogue within a community engenders further thinking. The classroom should be a "community of discourse engaged in activity, reflection, and conversation."	Learning activities provide opportunities for interaction that support active learning.
		Quiz: Take the quiz for Module 3 on Blackboard.	Provide opportunity for and support reflection on both the content learned and the learning process	The assessments measure the stated learning outcomes/objectives.
		Observation: Conduct an observation of 3 hours of normal classroom time in a general education classroom at an elementary school and submit the completed and signed observation guide on Blackboard.	Embed learning in realistic and relevant contexts	The learning activities promote the achievement of the stated learning objectives.
4	Topic: Promoting physical	Readings: Read "Increasing	Students must engage in	Instructions make clear how

(Nov. 7-13)	activity at recess and in the general education classroom Learning Outcome 5: Rationalize the importance of generalist classroom teachers in children's physical activity promotion. Learning Outcome 6: Discuss the various roles generalist classroom teachers can play in promoting children's physical activity at school.	Physical Activity Through Recess"; "Classroom-based Physical Activity, Cognition, and Academic Achievement"; and "Integrating Movement in Academic Classrooms: Understanding, Applying, and Advancing the Knowledge Base"	activities that enable them to evaluate alternative solutions as a means of testing and enriching their understanding	to get started and where to find various course components. Students are introduced to the purpose and structure of the course. All learning outcomes/objectives are stated clearly and written from the students' perspective. The learning outcomes/objectives are suited for the level of the course.
		<u>Module 4 Lecture:</u> Watch the lecture for the module posted on Blackboard.	Teachers challenge students' existing beliefs and understandings through meaningful, stimulating, interesting, and relevant instructional tasks	The instructional materials contribute to the achievement of the stated course and module/unit learning objectives and reflect an appropriate combination of student-instructor, student content, and student-student interactions.
		<u>Reflection Questions:</u> Answer the questions in the Module 4 forum on the Blackboard discussion board.	Provide opportunity for and support reflection on both the content learned and the learning process	The learning activities promote the achievement of the stated learning objectives.
		<u>Responses to Others' Posts:</u> Respond to 3 other people's reflection posts in the Module 4 forum on the	All knowledge is socially constructed. Social interaction plays a	Learning activities provide opportunities for interaction that support active learning.

		Blackboard discussion board.	role in learning. Dialogue within a community engenders further thinking. The classroom should be a "community of discourse engaged in activity, reflection, and conversation."	
		Quiz: Take the quiz for Module 4 on Blackboard.	Provide opportunity for and support reflection on both the content learned and the learning process	The assessments measure the stated learning outcomes/objectives.
		Observation: Conduct an observation of 3 hours of normal classroom time in a general education classroom at an elementary school and submit the completed and signed observation guide on Blackboard.	Embed learning in realistic and relevant contexts	The learning activities promote the achievement of the stated learning objectives.
5 (Nov. 14-20)	Topic: Advocating for children's school-based physical activity with school professionals and promoting children's physical activity during normal classroom time in a general education classroom at an elementary school Learning Outcome 7: Demonstrate competency in performing school-based physical activity promotion	Plans: Prepare a plan for advocating for children's school-based physical activity with school professionals in an elementary school and a plan for promoting children's physical activity during normal classroom time in a general education classroom at an elementary school. Submit the completed plans on Blackboard.	Design the task and the learning environment to reflect the complexity of the environment they should be able to function in at the end of learning	Instructions make clear how to get started and where to find various course components. Students are introduced to the purpose and structure of the course. All learning outcomes/objectives are stated clearly and written from the students' perspective.

	tasks (use policy and research to advocate for CSPAPs)			The learning outcomes/objectives are suited for the level of the course.
		Implementation: Implement the plans and submit the completed and signed evaluation form(s) on Blackboard.	Hands on problems Embed learning in realistic and relevant contexts Give the learner ownership of the process used to develop a solution	The instructional materials contribute to the achievement of the stated course and module/unit learning objectives and reflect an appropriate combination of student-instructor, student content, and student-student interactions.
		Reflection Questions: Answer the Module 5 questions in the forum on the Move for Thought Website.	Provide opportunity for and support reflection on both the content learned and the learning process	The learning activities promote the achievement of the stated learning objectives.
		Responses to Others' Posts: Respond to 3 other people's posts to any discussion in the forum on the Move for Thought website.	All knowledge is socially constructed. Social interaction plays a role in learning.	Learning activities provide opportunities for interaction that support active learning.
		Debriefing: Participate in a small group videoconference with the instructor.	Use of various presentation styles Encourage multiple modes of representations.	The course technologies are current. The tools and media support the course learning outcomes/objectives.
				The learning activities promote the achievement of the stated learning objectives.
6	Topic: Promoting children's	Plans: Prepare 1 plan for	Design the task and the	Instructions make clear how

(Nov. 21-27)	physical activity during 4 scheduled recesses and promoting children's physical activity during normal classroom time in a general education classroom at an elementary school Learning Outcome 7: Demonstrate competency in performing school-based physical activity promotion tasks (design and implement a recess plan to stimulate physically active behavior; plan and lead classroom-based physical activity experiences)	promoting children's physical activity during 4 school recess periods and 1 plan for promoting children's physical activity during normal classroom time in a general education classroom at an elementary school. Submit the completed plans on Blackboard.	learning environment to reflect the complexity of the environment they should be able to function in at the end of learning	to get started and where to find various course components. Students are introduced to the purpose and structure of the course. All learning outcomes/objectives are stated clearly and written from the students' perspective. The learning outcomes/objectives are suited for the level of the course.
		<u>Implementation:</u> Implement the plans and submit the completed and signed evaluation form(s) on Blackboard.	Hands on problems Embed learning in realistic and relevant contexts Give the learner ownership of the process used to develop a solution	The instructional materials contribute to the achievement of the stated course and module/unit learning objectives and reflect an appropriate combination of student-instructor, student content, and student-student interactions.
		<u>Reflection Questions:</u> Answer the Module 6 questions in the forum in the Move for Thought website.	Provide opportunity for and support reflection on both the content learned and the learning process	The learning activities promote the achievement of the stated learning objectives.
		<u>Responses to Others' Posts:</u> Respond to 3 other people's posts to any discussion in the forum on the Move for	All knowledge is socially constructed. Social interaction plays a	Learning activities provide opportunities for interaction that support active learning.

		Thought website.	role in learning.	
		Debriefing: Participate in a small group videoconference with the instructor.	Use of various presentation styles Encourage multiple modes of representations.	The course technologies are current. The tools and media support the course learning outcomes/objectives.
		Review of Research (graduate students only): Begin to work on the review of research paper.		The learning activities promote the achievement of the stated learning objectives.
7 (Nov. 28-Dec. 4)	Topic: Promoting children's physical activity during normal classroom time in an elementary general education classroom Learning Outcome 7: Demonstrate competency in performing school-based physical activity promotion tasks (plan and lead classroom-based physical activity experiences)	Plans: Prepare 4 plans for promoting children's physical activity during normal classroom time in a general education classroom at an elementary school. Submit the completed plans on Blackboard.	Design the task and the learning environment to reflect the complexity of the environment they should be able to function in at the end of learning	Instructions make clear how to get started and where to find various course components. Students are introduced to the purpose and structure of the course. All learning outcomes/objectives are stated clearly and written from the students' perspective. The learning outcomes/objectives are suited for the level of the course.
		Implementation: Implement the plans and submit the completed and signed evaluation form(s) on Blackboard.	Hands on problems Embed learning in realistic and relevant contexts	The instructional materials contribute to the achievement of the stated course and module/unit

			Give the learner ownership of the process used to develop a solution	learning objectives and reflect an appropriate combination of student-instructor, student content, and student-student interactions.
		Reflection Questions: Answer the Module 7 questions in the forum on the Move for Thought website.	Provide opportunity for and support reflection on both the content learned and the learning process	The learning activities promote the achievement of the stated learning objectives.
		Responses to Others' Posts: Respond to 3 other people's posts to any discussion on the Move for Thought website.	All knowledge is socially constructed. Social interaction plays a role in learning.	Learning activities provide opportunities for interaction that support active learning.
		Debriefing: Participate in a small group video-conference with the instructor.	Use of various presentation styles Encourage multiple modes of representations.	The course technologies are current. The tools and media support the course learning outcomes/objectives.
		Review of Research (graduate students only): Continue to work on the review of research paper.	Give the learner ownership of the process used to develop a solution	The learning activities promote the achievement of the stated learning objectives.
8 (Dec. 5-6)	Topic: Promoting children's physical activity during normal classroom time in an elementary general education classroom Learning Outcome 7: Demonstrate competency in performing school-based	Plan: Prepare 4 plans for promoting children's physical activity during normal classroom time in a general education classroom at an elementary school. Submit the completed plans on Blackboard.	Design the task and the learning environment to reflect the complexity of the environment they should be able to function in at the end of learning	Instructions make clear how to get started and where to find various course components. Students are introduced to the purpose and structure of the course.

	physical activity promotion tasks (plan and lead classroom-based physical activity experiences)			All learning outcomes/objectives are stated clearly and written from the students' perspective. The learning outcomes/objectives are suited for the level of the course.
		Implementation: Implement the plans and submit the completed and signed evaluation form(s) on Blackboard.	Hands on problems Embed learning in realistic and relevant contexts	The instructional materials contribute to the achievement of the stated course and module/unit learning objectives and reflect an appropriate combination of student-instructor, student content, and student-student interactions.
		Reflection Questions: Answer the Module 8 questions in the forum on the Move for Thought website.	Provide opportunity for and support reflection on both the content learned and the learning process	The learning activities promote the achievement of the stated learning objectives.
		Responses to Others' Posts: Respond to 3 other people's posts to any discussion in the forum on the Move for Thought website.	All knowledge is socially constructed. Social interaction plays a role in learning.	Learning activities provide opportunities for interaction that support active learning.
		Debriefing: Participate in a small group videoconference with the instructor.	Use of various presentation styles Encourage multiple modes of representations.	The course technologies are current. The tools and media support the course learning outcomes/objectives.

		Exam: Prepare for and take a comprehensive exam on Blackboard.		The assessments measure the stated learning outcomes/objectives.
		Review of Research (graduate students only): Complete the review of research paper.	Give the learner ownership of the process used to develop a solution	The learning activities promote the achievement of the stated learning objectives.

APPENDIX N

DATA CODES STUDY ONE

PCT codes	CI codes	CT codes	Axial codes	Sub themes	Themes
teacher facilitator	access to kids	access to standards	placements	gaining entry but losing access	real world context
classroom management	allowed teachers to select types of MI service learners used	activities fit with content and was connected to teachers goals	scheduling	scheduling and placements	
relationship with teacher	appreciate PA for kids	activity improvement	communication		
observation before	Are single subject teachers getting anything out of this?	activity strategy	resources	peer support	learning embedded in a social context
no reflection	being able to see the teaches	age appropriate	course structure	reciprocal learning	
liked the class as a senior	being an advocate	Aha moment	student enjoyment	real world outcomes	
back to familiar classroom	beyond the scope	allowed for feedback	teacher enjoyment	social interactions	

reflections	Class is constantly evolving	appropriate activity	instructor enjoyment		
fun	Class structure and field experiences not set up for teacher observations	appropriate dress	PA is important	teacher as facilitator	scaffolding
freaking out to record myself	Class time was cut for practicum	as CT what needed/preferences	recommendations	support	
benefits to students	communication issues	barrier to PA implementation regarding service learners/Monday mornings	lessons learned		
it easier for kids to remember with movements	communication struggles	barriers to service learner	student growth		
intimidating at first	confidence	barriers to service learner as a resource for classroom PA implementation	experience		
fun for kids	Content was sacrificed	being flexible	rapport		
PA is a good break for students	course alignment	benefits	management		
building a community	Course structure changed from	benefits- easier	planning		

	original structure				
student growth	dependent on feedback	better rapport	implementation		
not a lot of teamwork beforehand	developing their own plans	blocked off scheduled time for service learners	advocacy		
consistency	developmentally appropriate content	classroom management didn't become a problem; just a struggle	content		
this class would be good before our internship	Did not focus on CSPAP but more on the classroom component	classroom management expectation	access		
preferred teacher led	Didn't feel students were receptive to feedback.	classroom management time	time demands		
administration barrier	differences in opinion about instructional strategies and ideas between 575 instructor and students	coaching teacher	student benefit		
scheduling	discussed service learning stories and lessons learned in class	communication	intimidating		
importance of PA	due dates revised/conflict	consistency in placements	teamwork		
more clear	Enjoy teaching	consistent PCT	collaboration		

expectations	this class. Able to provide ideas for future teachers who may be interested in early end not primary ed.				
practice in class first	Enjoyable experience	consistency good for students	classroom space		
just one classroom	enjoyed working with kids	consistent communication	expectations		
setting expectations	enrichment		accountability		
flexible	example	CT management	consistency		
teacher trust	Explained the concept of LET US PLAY		routines		
ease of implementation	Face to face time was once a week	CT routines and procedures	no learning		
resources	feedback from teachers and service learners was positive	Description	felt unwanted		
learning fun	Felt like he did not prepare students adequately enough.	didn't listen to feedback			
makes me happy	Field work was/is	don't rearrange furniture			

	great. Could more be added?				
accountability	fine tune in small groups	easy to implement			
didn't know what I was doing the first time	first experience of 575 students in authentic school environment	effects of PA			
based lessons on student interest	forget names and detail since we only meet once a week	efficiency			
confidence	Getting schools to commit to having students sooner	enhanced teacher's instructional abilities			
experience of doing movement	getting to know students better	enjoyed PCT			
better management now	goat rodeo	enjoyed the approach			
what we learned would have helped during internship	good engagement	enjoyed when activity was practical			
students excited about PCT coming to class	Good opportunity to influence future classroom teaches on PA.	example			

used teamwork		experience with integrating PA made teacher more confident and able to adapt ideas to fit her class			
perception of others	Got straight into PA in class with little background for why or how	experienced teachers can learn from beginning teachers about new trends or strategies			
variety of strategies presented	great class	Felt service learner activities were useful for assessments; did not feel they were teaching new content.			
beginning of course info	had a problem coordinating all 575 classes and service learners from different classes	Felt service learner's broth enthusiasm and excitement to the classroom through their "fresh" ideas.			
planning prep	had to adjust to the new structure	felt service learners could benefit from more planning/anticipation			
enjoyed teacher led	Had to change the content to the new structure	felt service learners needed to improve on specific directions and clarity of task			

rubrics	Have class early on in their course work.	felt the breaks were easily incorporate into her daily schedule/routine			
record in schools	Having experience of student teachers helped to facilitate and make points of what was happening.	firsthand experience			
difference in experience in class	Hopefully because we got to them early in they will implement PA	Gave teacher different ideas to choose from.			
space and time	I couldn't give my students the information that they needed	good communication			
adapted another students movement break	importance of placements	good experience			
exposed to variety of movement breaks	importance of teaching PA	good organization			

active myself	improved presentations	good rapport			
needs accountability	instructor feels that giving more examples would improve 575 course in the future	had all positive experiences with service learners			
built into routines	instructor felt the 575 students didn't take the course serious	had service learners for 3 semesters			
teacher with experience	instructor valued reflection papers as an assignment	helping			
lack of knowledge	Lecture changed significantly for more hands on	improvement			
experience in classes helped	Lectured about classroom management and getting attention	incorporating service learner ideas			
importance of management	Lesson plan detail	inexperienced PCT			
scheduling problems	lesson progression	interruptions are common			
kids learn through PA	lesson plan experience	kids enjoyed service learners; teacher got new ideas			
students need consistency	lesson progression	kids mirrored/fed off service learner			

		excitement and enthusiasm			
familiar classroom helpful	lessons good on paper implementation not so much	lack of rapport			
I was the fun person	Like the new approach but missed certain lecture points	learn from demonstrations from others			
routines established	Lots of experience levels in the class	learn something from service learner examples and activities			
diversity of lessons	love the class	learned from the students			
not good working as a team	m4T resource	less consistent issues			
fun for me	Make sure teachers aren't overloaded with too many students	lesson adaptation			
teaching movements	Management and organization was sacrificed for practical application	life is not perfect			
accountability	management of	like student routine			

	movement breaks				
differentiation of lessons	management structure	liked Service learner activity			
teachers lead by example	management structure improvement	liked SL best out of PACES			
communication improvement through PA	more classroom time	management			
reassured me that I can have fun	more labs	management-consistency helps			
teacher led differences	more time	management			
groups helpful	More time for working on lesson plans	meaningful content			
release time nice, scheduling problems	most activities implemented during the service learning portions were focused on reviewing content	meaningful for kids			
choice was good	natural disaster	more movement			
whole course helped	New approach gave more freedom to instructor	more student engagement			
differed from their normal routine	Nice to have placements	more students			

	established a head of time				
availability differs	no difference	movement academic lesson			
difference with movement	No real issues or complaints, good groups of students	movement integration in academic lessons			
not much movement in class normally	not organized	movement requires management			
trial run first	not seeing them teach in the past	mutual benefit			
peer mentoring	Not sure if a lesson plan template is necessary	need consistency in placements			
peer teaching in front of class	Offer class as often as possible will be good for PA	new idea example			
different management needed	One challenge was not being able to observe in the field	new ideas			
course content	One complaint is assignment structure.	new ideas and minimal time lost			
teacher	PA helps students	new perspective			

connections					
class confusing, lack of experience, nervous, not that big of a deal	peer feedback	new teacher novelty			
liked variations	peer feedback improved lessons overall	observation before			
management important	placement difficulty	open to be flexible			
grade level differences	placement issues	overcame reservations of SL			
course unorganized	placements better before	PA importance			
time management	positive feedback at the end	PA integration improved as a result of PACES.			
importance of movement cues (attention signals)	Practice what you preach	personal reflection			
small group choice	practicing before implementing	planning versus reality			
class environment bad]	practicum most value	practical application			
respect	Problems with due dates because	preferred service learners in the morning			

	placements weren't set.				
built confidence	program description	prepared			
good preparation	quality improvement over time	prepared-ready			
transportation issue	range of teaching experience	preplan movement			
peer teaching hard	readings at the beginning beneficial	previous experience			
placement issues	research and experience helps students to internalize	professional communication			
class drawn out	research based info	professional growth			
flood affected the schedule	resources	professionalism			
easy to develop	scheduling time constraints	provided a break			
class repetitive	scheduling challenges	rapport with kids			
Fun course	scheduling conflicts	reasons for service learner			
course expectations	scheduling was a challenge	reflection			
small group work	science was found to be a subject in which students struggled	resources			

	integrating PA				
it was easy and fun	service learners had to be flexible and adhere to teacher schedules	resources			
student led	service learners perceived they had the ability to complete their tasks	review content not new content			
no experience	service learners went to some teachers more than others	routines and procedures			
use of note cards	SL excellent with good organization	scheduling			
small group work good	some students did better than others regarding the service learning component of the course	scheduling time			
limited placements	spread out scheduling	service learner experience (lack of)			
teacher feedback during in class peer teaching	Structure of class beneficial	Service learner provided resources that teacher will use in the future.			
movement breaks easier	student dependent	service learner would contact teacher via email to confirm time			

movement knowledge	student growth	Service learners allow teachers to observe without worrying about other factors.			
poor attendance	student learning	service learners benefit from seeing "real world" classrooms			
waste of time	student nervous at beginning	service learners could potentially be distracting			
time for movement	students enjoyed the service learner component and interacting with the children	service learners ideas were a valued resource			
defining movement	students felt limited in activities with the responsibility of teaching due to small windows of time	service learners only incorporated movement breaks in her class			
Student behavior	students had a required number of service learner components	service learners struggled with classroom management			
teacher cooperation	students lack of experience in schools cause some	service learners used an activity the teacher already uses			

	problems				
learning styles	students learned a lot	Service learners where on-time and prepared.			
teacher cooperation	students starting to appreciate PA	SL important			
bring movement break to class	Take it early on more possibility of implementing PA	SL most helpful			
management and course position	Talk about lesson planning and PE standards	SL needs to clean up			
planning template	Talked and observed recess	SL takes pressure of teacher for MI			
planning success	teacher didn't directly observe service learning component in action	student consistency			
prior experience	teacher didn't feel movement integration was being represented in what they did	student didn't change lesson			
not realistic	Teacher didn't feel students incorporated or applied strategies learned during	student enjoyment			

	class during the service learning component.				
more observations	teacher expectations clearer	student experiences			
teaching methods	teacher feels service learners would benefit with teacher and student information before implementation	student impact			
variations	teacher felt a more authentic environment that was similar to the classrooms they would visit would be more effective at preparing service learners	Students believe/know service learners can be taken advantage of.			
organization	teacher felt preservice teacher are more open-minded to integrating PA	students consulted teacher for lesson content ideas/			
good experience	Teacher felt service learners would benefit from leading more active	Suggested changes the teacher would make in the future.			

	lessons and less movement breaks.				
management	teacher felt service learning would have been more effective if students went to same classes	suggests service learners only focusing on activity breaks or movement breaks			
behavior expectations	teacher felt that in-class practice improved students ability to perform service learning component	syllabus for planning			
environment	teacher felt the service learning component was beneficial	taking notes			
template helped LP	teacher organization	teacher benefited from seeing examples and then modifying to fit their own classroom			
increase PA	teacher perceived student enjoyment regarding the service learning component	teacher can always benefit from fresh ideas			
active lesson harder	teacher perceived students struggling with understanding	Teacher can relate to students wanting more experience in			

	the difference between adding physical activity to content and integrating activity into a content	the classroom.			
peer teaching	teacher rapport	teacher did not view scheduling service learners as a barrier or problem at all			
developmentally appropriate content	teacher recommends restructuring in class learning experiences to regarding preparing students for their service learning responsibilities	teacher enjoyed service learning component			
planning	teacher viewed service learning component as beneficial	teacher felt examples were a valuable resource they could build off			
sharing ideas	teacher would have liked to observe service learners more often	teacher felt she was able to build of service learner ideas			
expectations	teachers asked for service learners to	teacher felt the service learner			

	leave lesson plans as resource	component was beneficial			
needed more instruction	Teaching class in summer brings challenges for placements	teacher felt the students were motivated by the present of a different teacher/novelty			
planned based on student needs	teaching feedback	teacher found benefit observing service learner lesson			
liked going to schools	teaching improved	teacher found resources on her own			
no Simon says	teaching improvement	Teacher got satisfaction out of help future teachers gain experience.			
learned most in schools	They will get out what they put in or buy into	teacher had to assist service learners with classroom management			
class was a waste of time	this was a lot of service learners first experience with writing lesson plans	teacher had to assist with classroom management			
getting to know the students and their levels	too many lesson plans	teacher had to assist with classroom management occasionally			
lessons redundant	too much too fast	teacher had two service learners			

experience made it easier	trial run	teacher impact			
classroom set up a challenge	understanding MVPA	teacher overload			
did not teach active lessons	unique perspective	Teacher perceived a benefit from the service learner's mindset that focused on PA.			
excited when PCT arrived	value of video feedback	teacher took 575 as a student at USC			
felt unwanted by teachers	Workshop approach did not lend itself to a specific content map for class	teacher valued observing service learner/visual learner/examples			
no feedback	Would make first teaches group teaches not solo teaches	teacher was unsure how much support to give service learners regarding classroom management			
teachers ACTIVE makes a difference		teacher would have preferred the students come for longer period of time			
partnership		theory to practice			
getting to know the students		things teacher would change for next year			
being adaptable		thinking about management			
lessons based		time management			

on student needs					
teacher understanding		time scheduling			
created my own		time was a barrier			
not a lot of info		time/scheduling			
lesson appropriateness		understanding the service learner role			
wanted more class time		unfamiliar class and kids			
went over movement terminology		Us presence motivation			
Willing to incorporate PA		used PCT activity later			
lesson plans redundant		used their idea			
liked active mats		valued lines of communication with PACES team for support			
placements issues		valued research team expertise in selecting potential resources			
SKIP was distracting		valued service learners as a resource for new ideas			
no feedback; didn't like active lessons		Valued service learners as a resource; students in			

		her class enjoyed having them.			
teachers helpful		valued the addition of student learners			
lessons completed in advance; did not match classes taught		video recording student learners			
no changes		Videotaping of service learners could potentially be intimidating to teachers.			
lessons should be fun		want more SL students			
instructor favoritism		want to give back			
did not meet teacher expectations		wanted active lessons			
extra time in class		wanted more			
no idea		wasn't prepared			
I will incorporate PA		we used what the student brought in			
good placement due to connections		well prepared			
not approachable		willing to help			

unorganized		would like for service learners to differentiate between types of MI.			
material not difficult		Would prefer service learners to build off (intergrade PA) already in place structures and schedules.			
class discussion needed					
needed outside resources					
lack of communication					
student withdrawal					
first time planning and implementing					
did not meet teacher expectation					
no constructive feedback					
did not learn in class					
teacher not qualified					
language barrier					

had to be MVPA for teacher					
feeling wanted					
travel issues					
not prepared to implement					
teachers forced to receive students					
still unsure of content					
need a demo					
will use MB but not AL					
Facebook communication					
used material later					
had to teach ourselves					
kids excited					
not feeling welcomed					
no help					

APPENDIX O

DATA CODES STUDY TWO

CI codes	ES codes	CT codes	PCT codes	Axial codes	Sub themes	Themes
current research	active	appropriate conversations	a lot of work	research	teacher as facilitator	student-centered approach
experience	board game	benefits of PA	about the same	experience		
students seemed to like class	boring	calming them down after activity	active lessons	student enjoyment	future implementer	benefits/importance of PA
instructor challenges	buzz	cant sit myself	articles	challenges	enjoyment of the real world	
student work at their own pace	centers	Codes	assignments	pacing	I don't like to sit	
course design	class activity	communication	benefit for me	course design		
assignment flexibility	competitive	continuity	benefits of PA	flexibility	sharing new ideas	connect and reflect
flexibility created challenges	computers	experience	better before	distance benefits	communication	
distance had advantages	creative	feedback	blog	distance challenges		

access to students	did not like activity	focus on teaching	borrowed ideas	teacher as facilitator		
placements not an issue like face to face	did not like go noodle	give up control	bulk done with one class	skype calls		
teacher as facilitator	didn't like	go noodle	catch the ball	communication		
skype	didn't like because of skill	good relationship	change perspective	reflections		
online discussion portion of the class	don't get to move often	ideas	class activity	grading		
reading student reflections	don't like to sit	improves instruction	class at different times	technology		
grading	everybody wins	lesson plans.	class enviro	recommendations		
tech issues	explanation	likely to implement PA	class environ	student commitment		
skype/tech issues	Frisbee	MI training	class expanded	teacher enjoyment		
skype advantage	fun	movement before	class set up	opportunity		
tech issues/ other options	gallery walk	movement in my class	class size	control		
student recommendations	glad to catch it	new ideas	class was straight forward	instruction		
communication issues	go noodle	no drawbacks	classmate interactions	implementation		
student commitment issues	group work	no PA prep	communication	planning		

others forms of communications	inside recess	not much activity before	conflict	implications		
half semester class	lazy	PA benefits	convenience	movement		
different type of student in distance courses…more mature	liked	pe time	course design should be longer			
enjoyed teaching the class	liked all	perspective of parents	course timing	active play		
face to face enrollment	liked everything	planning	course timing a challenge	sedentary play		
more time more opportunities	liked moving	previous SL exp	course timing and placement	competition		
more SL opportunities	no go noodle in class	reminded me the importance of PA	cramming assignments in	cooperation		
example	no sitting	resources wanted	CT a resource	collaboration		
??	sedentary activity	rubric too involved	CT class movement	recess		
more flexibility	Simon says	SL easily distracted	CT did PA	benefits of PA		
not as much control	sports for fun	SL expectations	CT good relationship	resources		
led to change	spots for fun	SL experience	CT had good MI	calming activities		
future research	technology	SL made adjustments	CT helpful	feedback		
too early	toss the bear	space	CT PA	new ideas		

	game in class					
clarity of instructions	video games	stimulated ideas	CT relationship good	training		
reflection	witnessed during class	take initiative	CT used movt too	expectations		
change tech	I prefer to be active	teaching the teachers	CT very receptive	management		
smaller groups for skype	I don't like to sit	tech	CT was great	observations		
future planning	I like to run at recess	time management	declining movement	assignments		
future implications		too many other things to do	definitely continue	academic lessons		
guidelines and experiences		too much observation	different tests	student behaviors		
anyone else using DL for SL related MI?		too much writing	Discussion posts	future implementer		
content can be taught effectively online even with mvt		took initiative	DL are independent	independent learner		
starting to see more mvyt in classrooms		try ne things	DL experience	scheduling		
getting back to a pe centered model			end of the semester was hard due to workload			
CSPEPE model			example			
			Facebook group			

			flexible deadlines			
			fun for kids			
			future implementer			
			getting finished			
			go noodle			
			go outside more			
			good course			
			good to implement in own class			
			hard to fit it in to plan			
			hectic assignment schedule			
			am physically active			
			instructor availability			
			internship hard			
			kids don't get PA			
			kids need a break too			

			learned a lot			
			lesson plans			
			level appropriate activities			
			like ppt and lectures			
			like the PA aspect			
			liked course structure			
			liked M4T			
			liked resources (M4T)			
			longer class better			
			M4T +			
			math hard to implement			
			MI examples			
			more inclined			
			more lesson planning recommend ation			
			more likely			
			move to			

			earlier in the semester			
			multiple observations			
			no change			
			no complaints			
			no difficulties			
			no exp with MI			
			no previous PA			
			not a lot of PA			
			not afraid to be silly			
			not internship			
			noticed a difference			
			online protocols			
			other teachers don't like PA			
			outside activity			
			PA teacher			

			responsibility			
			PA was intimidating			
			PE was difficult			
			personal issues			
			planning a barrier			
			reading a challenge			
			reading tough			
			readings beneficial			
			readings beneficial but too long			
			readings good			
			readings too long			
			recess hard to implement			
			recess taken away for academics			
			scheduling difficulty			

			schedule flex			
			scheduling issues			
			set up differently than others			
			Skype beneficial			
			space issues			
			student injury			
			Student interaction			
			Skype benefit			
			tech issues			
			test too narrow			
			time managemen t			
			timing			
			too much work			
			used to DL			
			well laid out			
			when course offered			
			will			

			implement PA in future			
			wish it was at the beginning			
			workload			
			ADHD			
			openness of schools			