

PREVIEW

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PREVIEW

PHYSICAL EDUCATION TEACHER EDUCATOR'S ATTITUDES TOWARD
AND UNDERSTANDING OF ONLINE PHYSICAL EDUCATION

BY

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DISSERTATION

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ABSTRACT

K-12 online physical education (OLPE) is as an educational opportunity in at least 22 states in the US (NASPE, 2006; 2010). Clearly, teachers play important roles in these online educational experiences, so gaining a better understanding of these teachers is critical. The purpose of this study was to examine physical education teacher educators' attitudes toward and understanding of K-12 OLPE. Bandura's Social Cognitive Theory (1986), which is comprised of the interaction between behavior, personal factors, and environmental factors served as the theoretical framework for this study. Data were collected utilizing semi-structured open-ended interviews. Participants ($N=25$) were current physical education teacher education (PETE) faculty members at universities granting a bachelor's degree in physical education certification. Participants were randomly selected using a stratified sampling technique based on the Carnegie classification of their universities. Data were analyzed using the constant comparative method as well as inductive and deductive analysis. Deductive analysis was viewed through the lens of the Social Cognitive Theory. Results of this study indicate that PETE faculty are aware that online education is available K-12; however, they are generally not cognizant of K-12 OLPE. Participants believed that NASPE (2004) National Physical Education Standards could be met online, except for Standard 1, which relates to motor skill competency. Participants were almost unanimous in their belief that OLPE should not be available to elementary-aged children, but is a viable option at the high school level. This study provided initial insight into PETE faculty members' knowledge about and perceptions of K-12 OLPE, however additional research is warranted.

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When I am this close to degree completion, I cannot help but reflect on how I got here. I remember how I selected my college major, I remember my decision to enter graduate school, and I remember driving over two-thousand miles to an unknown place to start a doctoral program. It surprises me still that I chose to pursue a doctoral degree. Now that it is almost done, I would be remiss if I did not acknowledge all those who have assisted me along the way.

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CHAPTER 1

Introduction

Distance education has taken many forms over the past decades. It has included courses by mail, video-tape, and television and is currently taking form with online courses. The purpose of these courses was often to reach the underserved populations in the US, those individuals who were, for various reasons, unable to attend regular classes. Distance learning opportunities also provided different ways for states, districts, and schools to meet educational goals.

This chapter will (a) discuss the prevalence of online education, (b) describe the arguments for and against online education, (c) describe the purpose of physical education, (d) introduce online physical education, (e) discuss online physical education and teacher education programs, (f) introduce the purpose of the proposed research and the research questions, and (g) address the significance of the proposed research.

Prevalence of Online Education

Online education is rapidly growing in the US. Since 2004 the Evergreen Education Group has conducted an annual survey of K-12 online programs in the US, *Keeping Pace with K-12 Online Learning*. While earlier reports did not include the projected number of students enrolled in online programs, Picciano and Seaman (2007) estimated that during the 2004-2005 school year approximately 700,000 K-12 students were enrolled in online education courses. More recent estimations put K-12 online enrollment at 1.5 million students (Wicks, 2010). Among those 1.5 million students taking courses, about 450,000 K-12 students were enrolled in state-led online programs (Watson, Murin, Vashaw, Gemin, & Rapp, 2010), and approximately 200,000 students

are attending online school full time (Watson et al., 2010). It is increasingly difficult to quantify the number of K-12 students taking online courses due to the rapid growth of online education and the multiplicity of options available (magnet schools, state led schools, franchise schools, college course offerings, etc.).

There are a wide variety of choices for K-12 online learning in addition to those offered by state educational boards. Currently there are a total of 39 state-led online programs that are publically funded. State online programs such as the ones in North Carolina and Florida account for 64% of K-12 enrollment and 96% of the growth in K-12 online education. Other online education options include franchises such as Connections Academy, K-12, and Insight Schools, which are funded by fees much like private schools. There are district, magnet, contract, charter, private, home, and state level online programs. Due to the plethora of options of online schools, and few reporting requirements, the number of students actually enrolled in K-12 online education courses in the US is unknown (Watson et al., 2010). Another population to be considered in online education, for example, are high school students taking online college courses. Presently these students have not been figured into any online education estimates.

Reasons for and against Online Education

Distance education including online education is chosen for many different reasons including: time, geography, financial considerations, family, work schedules, time flexibility, place, and space (Davison, 2005; Mills, 2003; Schwartzman, 2007). Other reasons students take online courses are to: earn college credit, take courses not offered in local schools, get extra help, and complete high school requirements (Watson, Gemin, Ryan, & Wicks, 2009). Another advantage of online education is to serve

students who might truly benefit from an online venue. Because face-to-face classroom teachers, administrators, and school staff see their students daily it falls on the school leaders to identify those students who would benefit from online education (Ring, 2006). Perhaps one of the strongest arguments for online education is that online courses expand the choice of classes for students and potentially serve all student populations (Pape, 2006; Ronsisvalle & Watkins, 2005).

Concerns from critics of online education include the lack of opportunities for socialization and personal interaction with other students, and that classes become a dumping ground for troublesome students including those students who are unsuccessful in face-to-face classroom environments (Davison, 2005). Another concern of critics relates to student achievement because little research has been conducted on online education exclusively. A comprehensive review of the literature regarding student achievement between distance learning and regular classroom learning, however, found no significant differences among online, face-to-face, and hybrid groups (Russell, 2001). Russell's (2001) review suggests that the differences in learning among online courses, face-to-face courses, or hybrid courses are negligible. The blended or hybrid models combine the best features of online learning and face-to-face learning. This form of instruction "is likely to emerge as the predominant model of the future – and become far more common than either one alone" (Watson, 2008, p. 3). Those studies, nonetheless, do not include courses in physical education. Thus, little is known about how these models contribute to learning in OLPE. An additional concern specifically regarding OLPE, is cultural resistance to change, not only from the physical education teacher education (PETE) faculty but from pre-service and in-service physical educators, as well.

Purpose of Physical Education

The purpose of quality physical education is to “develop physically educated individuals who have the knowledge, skills, and confidence to enjoy a lifetime of healthful physical activity” (NASPE, 2004, p. 11). Federal and state governments have identified quality physical education as an important component in the fight against the childhood obesity epidemic. Quality physical education takes many forms, depending on the philosophy of the teacher, school, district, and state. Central factors for all quality physical education programs, however, include adequate opportunities to learn (meet recommended minutes per week, qualified teacher, and adequate equipment), meaningful content (variety of motor skills, fitness education, develop the whole child), and appropriate instructional techniques (inclusion of all students, maximal practice, and no physical activity for punishment) (NASPE, 2003).

Online Physical Education

The National Association for Sport and Physical Education (NASPE) defines technology as a “tool” that is discipline-specific or tailored to achieve learning goals and objectives to be used to increase student learning and performance (NASPE, 2008). Online Physical Education (OLPE) is a subset of online education and, much like online education in general, has seen growth in the last decade. In 2006, the *Shape of the Nation* report (NASPE, 2006) indicated that OLPE was an educational option in 12 states across the US. The 2010 report (NASPE, 2010), however, showed that number had almost doubled and 22 states were allowing physical education credits to be earned online (see Figure 1). Among those 22 states, six claimed to be aligned with state and national physical education Standards, nine offered courses in personal fitness and wellness, four

offered weight training, and three offered a course focused on a specific sport. Only ten states required that the OLPE courses be taught by certified physical education teachers (NASPE, 2010). As a response to a growing concern in the physical education community, NASPE (2007) published initial guidelines for OLPE, the intent of which was to help educators consider the “multitude of implications” in the preparation and teaching of quality OLPE.

Currently, few published studies focus on online physical education, and none of these relate K-12 OLPE. One study evaluated a college weight training course and examined students’ strength and knowledge gains relative to the manner in which their course sections were delivered. The students were enrolled in one of three sections: a face-to-face section (“traditional” setting), a hybrid section (online materials and a teacher in the weight room), or an online section (online materials and student discretion when to work out). The researchers found that all groups significantly improved knowledge and only the online section did not significantly improve in strength (McNamara, Swalm, Stearne, & Covassin, 2008).

Daum and Buschner’s (2012) investigation into the status of K-12 OLPE in the US found OLPE to be more widespread than suggested by the *Shape of the Nation* (2006, 2010) reports. Another key finding was that most OLPE programs did not meet the NASPE (2004) Standard of 225 minutes per week for student participation in physical education. In addition, several OLPE programs did not have physical activity requirements. Furthermore, these programs had an emphasis on cognitive development and little to no focus on motor skill development. Given that current OLPE courses fail to meet physical education Standards, the authors questioned whether OLPE courses were

appropriate substitutes for physical education. Clearly, the time has come to focus on the delivery of OLPE, instead of debating its appropriateness. As Schwartzman (2007) states, “the important question may no longer be whether to engage in online instruction, but how to do it in concordance with principles for effective instruction (p. 114).”

OLPE and Teacher Education

Given the recent explosion of online education, it is essential that physical education teacher educators (PETEs) grapple with a number of aspects of OLPE. Teacher education programs are an important venue through which to teach future teachers the basics of online pedagogy. Although the research in the area is limited, one study showed that a technology training program that was incorporated into a teacher education program produced the best results for participants (Davis, Preston, & Sahin, 2009). In addition, the use of technology in teacher education programs produced a teacher’s increased ability and confidence to use technology in his/her teaching (Turvey, 2010). Undoubtedly, successful teacher education programs should include the entire faculty to provide a clear and consistent message (Chen, 2010).

The PETE curriculum is usually framed around NASPE/NCATE (2008) National Standards and guidelines for physical education teacher education programs or similar Standards set by other accreditation bodies. NASPE/NCATE’s (2008) current six Standards encompass a variety of topics including: scientific and theoretical knowledge, skill and fitness based competence, planning and implementation, instructional delivery and management, impact on student learning, and professionalism (NASPE, 2008). Technology appears to be largely ignored except for Standard 3.7 under the heading of planning and implementation. This Standard states that students should, “demonstrate

knowledge of current technology by planning and implementing learning experiences that require students to appropriately use technology to meet lesson objectives” (NASPE, 2008, p. 2).

Purpose and Research Questions

The purpose of this study is to examine PETE faculty attitudes toward and understanding of OLPE. The specific research questions are:

1. What is PETE faculty’s knowledge of online education?
2. What are PETE faculty’s perceptions of K-12 OLPE?
3. What are PETE faculty’s perceptions of teaching online pedagogy to pre-service teachers?

Significance

The purpose of quality physical education is to “develop physically educated individuals who have the knowledge, skills, and confidence to enjoy a lifetime of healthful physical activity” (NASPE, 2004, p. 11). High quality OLPE has the potential to contribute the development of physically educated individuals. Ideally, the instructors of online courses are well-prepared and have gained appropriate pedagogical content knowledge for this method of teaching. Without appropriate specific teacher education in online teaching methods, OLPE can potentially become a detriment to the advancement and credibility of the field of physical education. There is little information regarding OLPE and it is difficult to ascertain where OLPE is taking place, who teaches these courses, and the number of students who are enrolled. What is known is that some courses do not require physical activity or a qualified physical educator to teach the courses. To prepare physical education teachers for online teaching, PETE faculty will

need to be prepared to teach online pedagogy. This study will set the foundation for research on PETE faculty's attitudes toward and understanding of OLPE.

PREVIEW

CHAPTER 2

Review of Literature

The purpose of this literature review is to present an organized knowledge base related to online education and online physical education (OLPE). Due to the limited related literature in the field of OLPE, this review will primarily focus on research conducted regarding other subject matters in online education. This review of the literature is structured in four areas: online physical education, teachers and technology, teacher training for using technology, and teacher educators and technology. Followed by the literature review is a description of the Social Cognitive Theory which serves as the theoretical framework for this study.

Online Physical Education

Few studies have investigated K-12 online physical education classes. There are, however, recent studies that focus on this topic. One dissertation examined student outcomes and attitudes related to OLPE (Futrell, 2009). A second dissertation was a descriptive study of Florida Virtual School's physical education students (Mosier, 2010), and a third was a descriptive study of high school OLPE in the US (Daum & Buschner, 2012). Futrell's (2009) study focused on secondary students' outcomes and attitudes toward online and traditional physical education. Data were collected on 24 online physical education students and 36 traditional face-to-face physical education high school students. Pretest and posttest Activitygram/Fitnessgram data were collected on all participants. In addition, a 25 question Likert scale questionnaire related to the students' experiences in their respective courses was employed. Findings indicated that online physical education students were as satisfied with their course experiences as the face-to-

face students. Contrary to McNamara's (2008) study who found that students in an online weight training course did not improve upper body strength, Futrell's findings indicated that online students physical performance improved (specifically in upper body strength) over the course of the semester.

Another doctoral dissertation that was conducted by Mosier (2010) explored the characteristics of online physical education students ($N=19,994$) who were enrolled in Florida Virtual School physical education courses. The Florida Virtual School is the largest state run online school in the country with over 150,000 course completions and more than 10% of those course completions are physical education related. A factor of interest was the characteristics of those who completed the course and those who did not. Data were collected from three existing questionnaire databases in use by the virtual school, including, demographic data, a survey taken when the student had completed 65% of the course ($N=10,333$), and a survey for those students who did not complete the course or signed up but never logged into the coursework ($N=9,611$). Mosier findings indicated that while only 52% of the students completed the course, 40% registered but never activated their accounts. These non-completers did not believe that the Florida Virtual School could have facilitated course completion, and they planned to register for future courses.

Students taking Florida Virtual Schools physical education courses range from the 5th-12th grades (12th grade has highest enrollment), are white/non-Hispanic (58% of total population), and are mostly female (68% of total population) (Mosier, 2010). Findings indicated that those students with prior success had the highest completion percentages (as high as 73%), while new students or prior students who had yet to be successful in

completing an online course were the highest non-completers (as high as 66%). The author concluded that while online education was viewed by many as an exciting and attractive educational method, it is largely unexplored, and additional research is warranted.

Daum and Buschner (2012) investigated the status of K-12 OLPE in the US. Participants ($N=32$) were 9-12th grade teachers currently teaching OLPE in the US. The researchers employed a descriptive study approach using an online survey that had qualitative and quantitative responses. The purpose of the study was to describe the current status of high school OLPE in the US by investigating course design, content, teacher qualifications, and teacher/student communication. Results showed OLPE to be more widespread than suggested by the *Shape of the Nation* (2006, 2010) reports. Another key finding was that most OLPE programs did not meet the NASPE (2004) Standard of 225 minutes per week for student participation in physical education. In addition, several OLPE programs did not have physical activity requirements. Furthermore, these programs had an emphasis on cognitive development and little to no focus on motor skill development. Perhaps one of the reasons for this was that most of the participants were fairly new to this mode of teaching, with many of them with two or less years teaching online. The authors concluded that OLPE is the horse that has left the proverbial barn and that only carefully designed research will determine the worth of this constantly increasing option for students to learn about physical education.

Teachers and Technology

In order for the field of physical education to be ready for the 21st century, the profession must prepare its students to be 21st century teachers. Woods, Goc-Karp, Miao

and Pearlman (2008) conducted a study investigating physical education teachers' technology competencies and usages. The participants ($N=114$) were K-12 physical education teachers in the Northwest US. Data were collected through a survey designed to examine teachers' perceived competency to use technology, where they used technology, and how they used technology in their physical education classes. Results showed that the teachers used technology to aid in instruction (videotaping of skills), facilitate individual student development (pedometers), and support assessment (videotaping students' skills). Teachers' perceived barriers to technology use included: (a) a lack of financial resources, (b) time, training, and (c) space. Regardless of the barriers, the physical educators believed better preparation and training for the use of technology should have occurred in teacher preparation programs.

Related to reasons classroom teachers choose to integrate technology into their teaching, Niederhauser and Perkman (2008) investigated intrapersonal-cognitive variables that effect teachers' predispositions toward integrating technology into their teaching. The participants were 92 pre-service teachers at various stages in their pre-service education. Data were collected through the use of the Intrapersonal Technology Integration Scale. Findings revealed that the factors related to teachers' choices to integrate technology into their teachings were: intrapersonal factors, self-efficacy, outcome expectations, and interest. The authors concluded that teacher's predisposition to use technology in their classrooms can be better understood by examining these intrapersonal beliefs.

In a study examining self-efficacy ratings of technology proficiency, Morales, Knezek and Christensen (2008) investigated teacher confidence in technology use. The

participants included teachers in Mexico ($N=978$) and Texas ($N=932$). Data were collected with the Technology Proficiency Self-Assessment Scale. The results indicated that the Texas teachers perceived themselves as more proficient in using e-mail and the Internet than Mexican teachers. Other computer skills, however, such as integrated applications and teaching with technology were similar between groups. The authors concluded that the teachers in both groups perceived themselves technology proficient.

Wentworth, Graham, and Tripp's (2008) research question related to how pre-service teachers' knowledge of technology integration transferred from course work to practice. Data were collected from 96 elementary and secondary teacher candidates through the use of rubrics to assess teachers work samples. The lessons were coded into three categories of candidates using technology for: (a) increasing productivity such as grading and displaying class ideas, (b) pedagogy use by pre-service teachers, and (c) pedagogy use by students. The findings showed that the majority of the technology use was by the students (as a part of lessons) and pre-service teachers for presentation of material to their classes. Productivity was by far the least area in which technology was used. The authors concluded that there was a disconnect between the goals of the technology faculty and the cooperating teachers who were mentoring the pre-service teachers in their field experiences.

Online K-12 education occurs throughout the country, not only are students using the technology but logically online teachers are involved in this enterprise, as well. Archambault and Crippen (2009) examined 596 K-12 online teachers' knowledge of technology, pedagogy, content, and the combination of these areas using the Technological Pedagogical, Content, And Knowledge (TPACK) framework. The

TPACK framework is used to describe and understand teacher knowledge and how it “informs the debate on what teachers need to know (and how they might develop it)” (Mishra, & Koehler, 2006, p. 1019). Archambault and Crippen used a web-based survey to collect data. They received 596 responses (response rate of 33%, 1,795 surveys sent out) from 25 different states. The survey used a five point Likert scale, and through pilot testing, reliability and construct validity were confirmed. The findings suggest that K-12 online teachers rated their knowledge of pedagogy, content, and pedagogical content the highest (4.04, 4.02, and 4.04 respectively), indicating that they were comfortable with their abilities to use a variety of teaching strategies, create learning materials, and teach content. While pedagogy and content ratings were high, the ratings related to technology were almost a full point lower, signifying less comfort in the use of technology in their teaching. The lowest scored item was in regards to teachers’ abilities to assist their students with technology related problems (3.04). In general K-12 online teachers were comfortable with their abilities to perform as teachers, but less comfortable in using technology in their teaching. The authors concluded that the findings have implications for the field of teacher preparation because the field will need to adapt to teach future teachers for settings other than the traditional classrooms.

Teacher Training for Using Technology

From 1999 to 2002 a national initiative in England provided teacher training to use information and communication technologies in classrooms (Davis, Preston, & Sahin, 2009). In this initiative approximately 395,000 teachers were trained. In a study examining this initiative, Davis et al. (2009) investigated various training methods and the way in which the participants reacted to those methods. One method was the organic

approach; this approach was incorporated into the schools and teacher education programs. Teachers were trained by face-to-face training with an instructor, workbooks, and group work. The second approach was a computer based training designed to provide training online with the teachers completing learning modules. Initially in this approach one individual was responsible for training 400 teachers, in the later stages the ratio dropped to 200 teachers per trainer. Overall, there were greater positive responses to the organic approach and negative responses to the computer based approach. From the responses of the participants the authors developed five recommendations for future information and communication technology trainings: (1) use an ecological perspective to design trainings (i.e. make the training relevant to the teacher), (2) seek additional funding from the schools to encourage teachers' engagement, (3) use online and face-to-face communities of practice for ongoing support, (4) avoid computer-based instruction for those with few skills or little confidence in computers, and (5) include program evaluations.

Chen (2010) investigated teacher educators' efforts to integrate instruction with technology to teach pre-service teachers about technology uses in education. Twenty-five pre-service teachers, all female and one graduate student, were in their first semester courses as a cohort (spanning 3 semesters). Data were collected from documents, observations, and interviews. In the first course, the instructor utilized a constructivist approach to learning by using technology to guide the students in completion of projects, problems, and investigations. The first theme that emerged was a "discrepancy regarding technology use." The students were required to buy computers, yet did not believe that computer use was necessary with all instructors. The pre-service teachers, for example,

did not believe that computers were needed to help teach math. A second theme was a “discrepancy regarding instructional content and approaches.” Because the teacher did not use a book or lecture in the course, the students believed that they received little knowledge from the course. The students actually wanted to have books or notes as references when questions arose in the field. The author concluded that the content that teacher educators teach their students may conflict with the pre-service teachers’ beliefs or even the practice of in-service teachers. The author suggests that teacher educators collaborate with their colleagues within the same institution to avoid overlap and deliver a consistent message.

Vannatta and Banister (2008) used a technology performance assessment tool with pre-service teachers to determine competence in word processing, presentation, spreadsheets, graphic/drawing, and internet skills. The students were not required to pass the assessment, but failure resulted in a lower final grade. The authors explored the impact of the assessment on the students use and development of technology in later courses. Only 25% to 40% of students passed the assessment on their first attempts. After retakes, students increased their passing rates from 70% to 95%. Notably, almost 64% of the participants believed the assessment was an effective way to encourage students to develop their technology skills. The findings indicated that throughout their time in the pre-service program, participants’ skills increased each year. The findings also showed that assessments of technology skills early in pre-service programs can increase student awareness of the importance of technologies in education, and help students advance their technology skills.