

How to Reconceptualize Physical Education Teacher Education Curriculum for Successful Training toward Inclusion

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Since the Individuals with Disabilities Education Act (IDEA) was mandated in 1975, segregated special education programs were moved to more inclusive ones. According to National Center for Education Statistics (2016), there are over 6.5 million students with disabilities receive special education. 95% of those students with disabilities are taking special education services in the public school setting. However, studies showed that General Physical Education (GPE) teachers would not feel competent or prepared to include students with disabilities. Since most of PETE programs offer one Adapted Physical Education (APE) course, it is necessary to reconceptualize PETE curriculum for better preparation for inclusion. Infusion approach curriculum (DePauw and Goc Karp, 1994) was proposed for successful training toward inclusion in PETE curriculum. Studies revealed that an infusion approach-based curriculum model could positively affect students' attitudes toward individuals with disabilities (Barrette, Holland Fiorentino, & Kowalski, 1993; DePauw & Goc Karp, 1994). However, developing an infusion approach curriculum has several barriers, limited lecture hours, overload, and faculty supports. To successfully develop an infusion approach curriculum, blended learning can be one of the methods for successful implementation. This paper introduces the direction to infuse disability concept in PETE program applying blended learning.

Key words: PETE Curriculum, Adapted Physical Education, Infusion approach-based curriculum, Blended learning.

Over 6.5 million students with disabilities receive special education and related services under the Individuals with Disabilities Education Act (IDEA) (National Center for Education Statistics, 2016). In regards to the enactment of the IDEA and the least restrictive environment (LRE) mandates, there has been a movement from segregated special education programs to more inclusive ones. Statistics from the National Center for Education Statistics (2016) indicated that 95% of students with

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disabilities of age 6-21 currently receiving special education services attend public school settings. This trend has been observed in physical education classes as well. According to the U.S. Government Accounting Office, 92% of students with disabilities are taking general physical education (GPE) class in grade 1 through 7, and 88% of students with disabilities are taking GPE in grade 8 through 12 (U.S. Government Accounting Office, 2010).

Unfortunately, researches indicated that experiences of students with disabilities in GPE are not always positive and in fact result in feelings of isolation, frustration, and failure (Blinde & McCallister, 1998; Hutzler, Zach, & Gafni, 2005). For example, Goodwin & Watkinson (2000) interviewed nine students with physical disabilities of age 10-12 about their experiences in GPE. Students' response indicated that they had been teased by their peers and felt out of place during GPE. During the focus group interview, several students further described the feelings towards GPE having "good" days and "bad" days. Specific examples were given about "good" days when students felt a sense of belonging, share benefits with peers, and exhibited skillful participation; "bad" days were associated with experiences they faced including social isolation, competence questioned, and restricted participation.

One of the major reasons why students with disabilities are not always experiencing success in GPE is the fact that physical educators have not received the proper training and/or experience to work with students with disabilities resulting in lack of the confidence in their ability to make the appropriate accommodation and modifications (Ammah & Hodge, 2006; Chandler & Greene, 1995; Hardin, 2005; Kowlaski & Rizzo, 1996; LaMaster, Gall, Kinchin, & Siedentop, 1998; Linert, Sherrill & Myer, 2001).

This is undoubtedly a concern, as key factors in the success of any inclusive physical education classes are the training, competence, and the resulting confidence of the teacher (Block & Rizzo, 1995; Block, Taliaferro, Harris, & Krause, 2009; Hutzler, Zach, & Gafni, 2005; Lepore, Gayle, & Stevens, 1998). Researches measuring perceived competence and confidence in physical educators including students with disabilities in their classes indicates that GPE teachers feel they have not been adequately prepared to work with students with disabilities (Hardin, 2005; Haycock & Smith, 2011; Kowalski & Rizzo, 1996; Meegan & MacPhail, 2006; Rizzo & Kirkland, 1995). This perception of lack of preparedness leads to questions as to the adequacy of Physical Education Teacher Education (PETE) programs in providing appropriate training with regards to accommodating students with disabilities in GPE.

Current studies have shown that PETE programs in the United States still require only one introductory Adapted Physical Education (APE) course (e.g., physical education for children with disabilities, Introductory Adapted Physical Education) (Piletic & Davis, 2010; Kwon & Block, 2013). Since taking one APE course is probably not enough to truly prepare future GPE teachers to work with students with disabilities, DePauw and Goc Karp (1994); Kowalski (1995), and Rizzo and Kirkland (1995) argued that the standard PETE curriculum should be reconceptualized to better

inform teachers about including students with disabilities throughout the overall PETE curriculum.

In the early 1990s, apprehension about the inadequate state of teachers' preparation in working with students with disabilities in GPE classes prompted studies that used the infusion approach in PETE programs. The infusion approach curriculum means infusing disability concepts into the overall PETE curriculum; this means that teaching and training programs like PETE and APE no longer provide segregated curriculum (Kowalski, 1995). DePauw and Goc Karp (1994) viewed the infusion approach as comprised of three levels: additive, inclusive, and infusion. The **additive level** is the stage in which specific topic information about individuals with disabilities is added to the course. The inclusive level is the stage of questioning assumptions and educational goals, and it allows students to have a learning experience (e.g., practicum experience) through the courses. Finally, the infusion level suggests that all concepts of disabilities are interconnected throughout the overall curriculum, so that pre-service teachers are likely to develop competence in teaching students with disabilities (Hodge, Davis, Woodard, & Sherrill, 2002) along with a positive attitude toward including students with disabilities (Hodge, Tannehill, & Kluge, 2003).

Studies revealed that an infusion approach-based curriculum model could positively affect students' attitudes toward individuals with disabilities (Barrette, Holland Fiorentino, & Kowalski, 1993; DePauw & Goc Karp, 1994; Lepore & Kowalski, 1992). There is evidence that the infusion approach curriculum positively correlates with attitudes and beliefs of pre-service teachers. For example, Kowalski and Rizzo (1996) examined pre-service teachers' perceived competence and their attitudes (N=133) toward teaching individuals with disabilities who were enrolled in an infusion approach curriculum. Results revealed that students who took more courses that designed based on the infusion approach curriculum had higher perceived competence toward teaching and working with individuals with disabilities. Hardin's (2005) study also showed that students who experienced an infusion approach curriculum had a higher level of confidence in regards to their ability to teach students with disabilities.

However, there are still barriers in developing an infusion approach curriculum. Power (2004) studied faculty perspectives on the infusion of environmental education into the pre-service methods courses. He revealed that faculty agreed to infuse the environmental education into pre-service science and social studies methods courses by sharing sources and connecting to local communities. Still, there were some difficulties in integrating the infusion approach curriculum. Time pressure was a major constraint; faculty had to work within limited lecture hours, and students were overextended. Since universities pressured their faculty to decrease the number of credits pre-service teachers needed to graduate, faculty members were nervous to set precedents for more add-ons in their limited lecture hours. Another barrier was the pressure/competition of other groups who wanted to be in the curriculum. To successfully apply an infusion approach curriculum, it is believed that alternative instructional methods are necessary to control constraints such as time, pressure, and workload.

E-Learning Environment

Much research has been conducted to find alternative instructional methods to meet the needs of universities and students to overcome the barriers in general education curricula (Smith & Jones, 1999; Orton-Johnson, 2009). Many institutions of higher education offer e-learning courses in degree programs, through interactive multimedia and the internet, to infuse learning modules and special education issues in traditional elementary and secondary preparation (Smith & Meyen, 2003).

E-learning can be defined as the use of computer network technology, primarily over an intranet or through the internet, to deliver information and instruction to individuals (Welsh, Wanberg, Brown & Simmering, 2003). E-learning also includes instruction delivered via all electric media, including the Internet, intranet, extranet, satellite broadcasts, audio/video tape, interactive TV, and CD-ROM (Shank & Sitze, 2004).

While there has been a long and well-established history of studying the efficacy of teaching and learning through e-learning courses in terms of cognitive factors and student satisfaction (Woltering, Herrler, Spitzer, & Spreckelsen, 2009), the research outcomes were varied (Campbell, Floyd, & Sherida, 2002). Several studies showed that there is no difference between e-learning classes and traditional classes in terms of cognitive factors, such as academic performance, achievement, examination results, and grades (Campbell, Floyd, & Shefida, 2002; Smith, Smith, & Boone, 2012). In addition to cognitive factors, researchers were also interested in the affective domain, such as student satisfaction and student attitudes. The research revealed participants in e-learning showed positive perceptions of learning outcomes and the learning environment (Johnson, Aragon, Shalik, & Plama-Rivas, 2000; Sullivan, 2002).

Specifically, in a teacher preparation course, Smith, Smith, & Boone (2012) compared the effectiveness of lecture, guided instruction, and collaborative discussion between an e-learning and a traditional classroom environment in a teacher preparation program. Results indicated no difference in cognitive factors between the two educational environments. With regard to discussions, it appeared a significant number of students in the traditional environment chose not to participate in classroom discussion. However, 100% of students online contributed to the discussion. Although many studies reported admirable cost savings and compatible outcomes in online learning when compared with face-to-face learning, universities are still struggling with how to integrate e-learning effectively (Croft-Baker, 2001).

Blended Learning

Currently, blended learning is popular with many educators, because they view it as a necessary component of classroom teaching that can promote effective learning. Blended learning is a formal

education program in which a student learns at least in part through online delivery of content and instruction with some element of student control over time, place, path, and/or pace (Staker & Horn, 2012). There has been an increase in the implementation of blended learning, and research has revealed the various advantages of blended learning. For example, Garrison & Kanuka (2009) showed that blended learning decreases the distance and increases the interaction between students and their instructors compared to pure e-learning. Graham (2006) categorized the advantages of the blended learning system into three categories: pedagogic richness, flexibility, and increased cost-effectiveness. Heinze and Procter (2004) argued that blended learning could be more valuable tool for student with different learning styles than pure traditional or pure e-learning course.

Environment of blended learning

Blended learning mixes various event-based activities, including face-to-face classroom learning, live e-learning, and self-paced learning. This is the combination of traditional instructor-led training, synchronous online conferencing or training, and asynchronous self-paced study (Singh, 2003). Originally, blended learning according to Singh(2003), was often associated with simply linking traditional classroom training to e-learning activities; however, definitions identified in his study constitutently reflect the narrowest versions of blended course design and can be categorized into two groups:

1. Combining elements of face-to-face and e-learning courses (Allen, Seaman, & Garrett, 2007; Aycock, Garnham, & Kaleta, 2002)
2. Providing the substantial portion of content, typically relying on discussions within a planned and pedagogically driven structure (Laster, Otte, Picciano, & Sorg , 2005)

Much of the literature on blended learning is based on anecdotal reports focusing on instructors, programs, or institutional efforts to cope with the challenge of design and implementation. Blended courses are most successful when they are engaging with e-learning activities that complement face-to-face activities (Alberts, Murray, & Stephenson, 2010; Collins-Brown, 2011; Hoffman, 2003; Martyn, 2003; Poirier, 2010). Gerbic (2009) stresses that “there should be a strong integration between components; weekly topics or course content building off discussion, teacher feedback about progress or performance, and practice in face to face meeting”(p.35). Students are more motivated to participate in a required meeting and to be prepared for the deadlines of assignments or projects. Thus, they will assume more ownership of their learning. Gerbic (2009) stressed the format of the blended learning system should include the discussion followed by providing resources. Discussing the content of the resource will be required to integrate components, such as contents, discussions, and feedbacks from primary instructor.

Effectiveness of blended learning

Researchers have suggested that blended learning promises effectively boost the core of teaching and learning (Gomez & Igado, 2008). Other (e.g., Garrison & Kanuka, 2004) indicated that it could provide the learner with higher level of learning. Certain conducted researches have shown that blended learning has been very successful over the past years and it has the potential to yield better results than traditional and online learning alone (Balci & Soran, 2009; Deperlioglu & Kose, 2010). For instance, Allen and Seaman (2008) pointed out that, one-third of all academic leaders continued to believe that the learning outcomes for blended learning are inferior to those of face-to-face instruction. “Going beyond the barriers of time and location” is one of the other best potentials of blended learning (Justoff & Khodabanelou, 2009, p. 80).

There are many reasons why an instructor, a trainer, or a learner might pick blended learning over other learning options. Osguthorpe and Graham (2003) identified six reasons why one might choose to design or use a blended learning system: (1) pedagogical richness, (2) access to knowledge, (3) social interaction, (4) personal agency, (5) cost effectiveness, and (6) ease of revision. Beyond this general statement, instructors choose blended learning for three reasons: (1) improved pedagogy, (2) increased access/flexibility, and (3) increased cost effectiveness (Graham, Allen, & Ure, 2003).

Improved pedagogy

As indicated above, one of the most commonly cited reasons for blending is more effective pedagogical practices. In higher education, 83% of instructors use the lecture as the predominant teaching strategy (USDE, 2001). Some have seen blended learning approaches to increase the level of active learning strategies, peer-to-peer learning strategies, and learner centered strategies (Collis & Margaryan, 2003; Hartman, Dziuban, & Moskal, 1999; Morgan, 2002; Smelser, 2002).

Increased access/flexibility

Access to learning is one of the key factors influencing the growth of distributed learning environments (Bonk, Olson, Wisher, & Orvis, 2002). Many studies emphasize that programs would not be possible if students were not able to have a majority of their learning experiences at a distance from instructors and/or other students (Kaur & Ahmed, 2002; Reynolds & Greiner, 2005). Ross and Gage (2002), for example, have seen an expansion of reduced seat time courses that allows for increased flexibility but still retains some traditional face-to-face contact.

Increased cost effectiveness

Cost effectiveness is the third major goal for blended learning systems in both higher education and corporate institutions. Blended learning systems provide an opportunity of reaching a large, globally dispersed audience in a short period of time with consistent, semi-personal content delivery. In higher education, there is an interest in finding cost effective solutions. The Center for Academic

Transformation completed a three-year grant program designed to help universities explore ways of using technology to simultaneously achieve quality enhancements and cost savings (PEW, 2003). The University of Central Florida, for example, has predicted cost savings due to cost reductions in physical infrastructure and improved scheduling efficiencies, which have yet to materialize (Dziuban & Moskal, 2011).

One of the major constraints applying the infusion approached model in the faculty perspectives was related to time. By applying this blended learning system, both faculty members and students can control the constraint of time. Faculty can minimize the lecture hours on disability concepts by uploading resources regarding disability concepts in their online collaboration system. Then, students could access the resources based on their own pace. The constraints of applying an infusion approached curriculum can be resolved by the benefit of a blended learning system, so that the blended learning might provide a possible way to apply the infusion approach curriculum in PETE program.

Implementation of blended e-learning in higher education

The effectiveness of blended learning has been explored and revealed positive effects on students learning. Now it is important to note how to successfully implement the blended e-learning system in higher education.

Pedagogy

Pedagogy strategies used to support knowledge achievement by the learner is core to the blended course but may be the most challenging part to design. Most critically, for a blended course, it is recommended that there is an integration between the classroom and e-learning experiences (Albert, Murray, & Stephenson, 2010; Gautsch, 2011; Hall Jr. & Mooney, 2010; Hoffman, 2003; Kim, Bonk, & Oh, 2008; Martyn, 2003; Shibley, 2009). Recommendations for blended pedagogy are articulated in an attempt to illustrate how these strategies are unique within a blended delivery method. While many instructional strategies are suggested for classroom and online environments, there is a consistent belief that various interactivities and prompt feedbacks are key to student engagement in blended courses (Alberts, Murray, & Stephenson, 2010; Tan, Wang, & Xiao, 2010). Interactivity may involve instructor to student, student to student, or student to others, materials or resources. For example, students may complete online tutorials, share their experiences in an online discussion, and present their ideas about what they have learned in class. The value placed on interactivity is reflected in recommended instructional strategies in both face-to-face and online environments.

Assessments

Assessment can be another challenging element in a blended course and recommendations are limited, possibly because assessment is related to learning outcomes, academic policy, the level of

course, and available assessment resources. Additionally, institutions may have policies about when and where assessments are administered. Effective practices are divided on when and where assessments should occur but the preference is for assessment to be conducted online (Shibley, 2009; Hoffman, 2003; Martyn, 2003). Along with traditional objective assessments such as quizzes, exams, and essays, there are other assessments using projects, threaded discussions, and presentations (Shibley, 2009, Hofman, 2003; Martyn, 2003; Twigg, 2003). Assessing groups rather than individuals is required when the activity is a project or a group presentation. Demanding a comprehensive assessment rather than individual contributions is emergent (Hoffman, 2003; Troha, 2002).

Course implementation and student readiness

Researches are available for the implementation of a blended course and the careful consideration about these studies can prevent problems during the initial offerings of a blended course (Collins-Brown, 2011; Hensley, 2005; Hofman, 2003). While the recommendations are reported here may relate to course *design*, they should be a core to the actual course *delivery* when instructors make clear to the learner what is expected of them and how they can be successful. Since students need to have independence in their work, time management, communication, and study skills in order to achieve success in a blended course (Collins-Brown, 2011; Kim, Bonk, & Oh, 2008; Rossett, Douglass, & Frazee, 2003), communication regarding on course expectation, and the instructional processes is closely associated with student success (Collins-Brown, 2011; Hensley, 2005; Hoffman, 2003; Johnson & Voelker-Morris, 2007; Kelly, 2008). This includes giving prompt and specific feedback (Gautsch, 2011), clarifying and reinforcing the role of online discussions (Alberts, Murray & Stephenson, 2010), and monitoring and referencing online discussion in face-to-face meetings to substantiate their value (Alberts, Murray, & Stephenson, 2010).

Pre-course self-assessments, links to student services, practice activities and partnering (e.g., learning teams) can help those who may not have well developed skills. It is believed that students need to have a sufficient understanding of the technology used in the course to be successful (Crummett et al., 2010; Yukawa, 2010). Pre-course assessments may require pre-course communication about technology requirements as well as technology configurations. Most critically it is important to provide clear and accessible support for online technology which subsequently increases participation and reduces frustration and attrition (Crummett, et al., 2010; Garnham & Kaleta, 2002; Hoffman, 2003; Johnson & Voelker-Morria, 2007; Yukawa, 2010).

Overall, it is believed that students do best when they are encouraged to be independent learners (Hoffman, 2003; Kim, Bonk, & Oh, 2008; Rossett, Douglass, & Frazee, 2003). Clear instructions, manageable assignments, and relevant activities support students and encourage them to take responsibility of their learning outside of the class. It also encourages them to be prepared to participate in class meetings. Many recommend nurturing a learning community for an entire course

as a strategy to give students a sense of belonging and place, as well as to provide a network of support and collaboration (Martyn, 2003; Poirier, 2010; Yukawa, 2010). Finally, providing periodic student course evaluations assists in making changes during and after the course's completion (Collins-Brown, 2011; Yukawa, 2010).

Direction to Infuse Disability Concept in PETE Program via Blended Learning

Although many studies reported admirable cost savings and compatible outcomes in elearning when compared with face-to-face learning, universities are still struggling with how to make online learning effective (Croft-Baker, 2001). It is critical in the question of how to implement all the characteristics of PE and APE into the online learning environment.

Understanding the content area

This means infusing the content area with the online supplements. For example, when the class focused on how to teach shooting, online supplement should support with modification of equipment and teaching strategies for the student with disabilities. When the class covers behavior management, the online supplement should support the class lesson with examples of behavior managements for students with disabilities e.g. picture schedules, reward systems, and token systems. Since the content area covered by online supplements is closely related with the work done in class, it can enhance students' understanding.

Facilitate discussion not only online but also face-to-face

The biggest concern about the online course was interaction with faculty and peers. To promote discussion, the instructor should actively use online chatting, open discussion, or conference calls and should also provide chances to discuss the content covered online face-to face. Since this format would act as a supplement to a class, the instructor can also answer questions in class on a regular base.

Give hands on experiences

The instructor can provide indirect and direct experience using different sources. For the indirect experiences, instructor can provide articles and video clips through uploading the source on the web. They can simply ask students to read or watch and then write short paper. For direct experience, they can observe practicum or do labs that involve shadowing the APE teacher or using a wheelchair to play sports.

To create and implement successful e-learning environment, first of all, university professors should be prepared to meet the challenge of marketing before developing their online course. They can develop a survey with questions about content area in relation to career goals, and the familiarity of e-learning, all to analyze the capacity of learners. Finally, it is recommended that an institution

should conduct the pilot testing on any new course with one or two good students to work out all the bugs.

Conclusion

It is obvious that students with disabilities in K-12 setting have increased over the decade (USDE, 2012), and studies have shown that not only in-service but also pre-service PE teachers showed difficulties including students with disabilities (Ammah & Hodge, 2006; Block & Obrusnikova, 2007; Hardin, 2005; Hutzler, 2003). To train pre-service PE teachers toward teaching students with disabilities, it is necessary to reconceptualize PETE curriculum (DePauw & God Korp, 1994). However, faculty reported the difficulties in systematically applying different curriculum models because of constraints such as time, cost, and lack of knowledge (Power, 2004). To control the constraints, the online learning system could be applied in curriculum to systematically train pre-service PE teachers toward including students with disabilities throughout the PETE curriculum. Since e-mail and Internet has been and will continue to be ubiquitous presence on college/university courses, applying e-learning into curriculum, integrating face-to-face course with e-learning resources, could provide successful and doable way for training future PE teachers to include students with disabilities.

Blended learning is not considered a new method but in the past blended learning was comprised of physical classroom formats, such as lectures, labs, books, or handouts. The concept of blended learning is rooted in the idea that “learning is not just a one-time event; learning is a continuous process” (Harwell, 2003, p.6). Blended learning is more beneficial than using only one learning delivery medium because it appeals to those who have a limited chance to study at a specific time and in a specific space. It is believed that blended learning would optimize cost and time (Dean, Stahl, Sylwester, & Peat, 2001).

Most of the recommendations for implementing blended courses and preparing learners are applicable for or similar to those for online courses suggesting that most of the attention is paid to the online component where students are working at a distance primarily and through technology. Due to the variations in course schedules, routines, and delivery modes it would seem that setting expectations reasonably is of utmost importance so that learners understand how the course works, and whether or not they are equipped for the suitable learning.

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