

Changing Physical Education Teacher Education Curriculum to Promote Inclusion

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Many physical education teachers are not well trained to address the needs of students with disabilities in an inclusive physical education class despite inclusion being a general educational policy (Rust & Sinelnikov, 2010). This lack of training could be improved through well-designed physical education teacher education (PETE) curriculum. This article proposes a curriculum framework based on the Transtheoretical Model (TTM) to effectively train pre-service physical educators toward the inclusive physical education. Three curriculum stages (lecture-focused, lectures with teaching practicum, and internship-focused) and the stage-matched strategies adapted from the TTM are discussed as promising ideas to systematically restructure the PETE curriculum and effectively train pre-service teachers to promote inclusion.

Keywords Inclusive physical education, Transtheoretical Model

Including students with disabilities in general education classes is now standard education policy in school districts across the United States (McCay & Keyes, 2001). Two main pieces of federal legislation, the Individuals with Disabilities Education Improvement Act (IDEA) of 2004 and Americans with Disability Act Amendments Act of 2008 have supported the importance of inclusion in educational settings. Particularly, the IDEA created a detailed set of guidelines to ensure an appropriate education in the least restrictive environment for students who are eligible for special education programs (Yell & Katsiyannis, 2004). According to Gartin and Murdick (2005), “the focus of IDEA has been, and continues to be, the inclusion of students with their non-disabled peers whenever and wherever possible” (p. 328). However, according to Block and Obrusnikova (2007), general physical education (GPE) teachers have negative perceptions toward inclusion. Furthermore, not all GPE teachers in inclusion classes are proficiently trained to address the needs of children with disabilities (Ayers & Housner, 2008; Duchane & French, 1998; Kozub, Sherblom, & Perry, 1999; LaMaster, Gall, Kinchin, & Siedentop, 1998; Lienert, Sherrill, & Myers, 2001; Rizzo, Broadhead, & Kowalski, 1997; Rust & Sinelnikov, 2010). These adverse feelings and competencies of GPE teachers may be due to inadequate training and from lacking the successful experiences to include children with disabilities (Block & Obrusnikova, 2007).

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This lack of training should be improved to enhance educational outcomes for students with disabilities in inclusive physical education settings.

Future physical educators' competencies for teaching students with disabilities depend on how well physical education teacher education (PETE) programs provide disability-related knowledge and experiences (Hodge, Davis, Woodard, & Sherrill, 2002; Kozub et al., 1999). PETE programs are designed to develop cognitive and behavioral teaching competencies of pre-service teachers, and this training process significantly affects the root of their teaching behavior in the future. Each PETE program should have a particular teacher education curriculum based on national- and state-level teacher education standards and benchmarks, such as Professional Standards for the Accreditation of Teacher Preparation Institutions (National Council for Accreditation of Teacher Education [NCATE], 2008) and Advanced Standards for Physical Education (National Association for Sport and Physical Education [NASPE], 2008). Particularly, NCATE and NASPE standards currently require that PETE programs provide diversity-based courses and experiences that facilitate pre-service teachers' ability to work with diverse students (e.g., students with disabilities) in K–12 schools (Ayers & Housner, 2008). In addition, beliefs and attitudes of faculty in each PETE program may substantially influence how to train the pre-service physical education teachers. In sum, the PETE programs should play a pivotal role in enhancing and changing pre-service teachers' teaching behaviors to promote inclusion.

In PETE programs, a traditional and widespread method to train pre-service teachers on inclusion is to offer one or two adapted physical education (APE) courses that are taught in isolation from GPE courses (DePauw & Goc Karp, 1994a). The format and timing of providing APE courses in the traditional approach may vary among PETE programs. For example, some PETE programs may only provide APE lectures without opportunities to apply the knowledge in practical settings, whereas other PETE programs may provide APE lectures with a teaching practicum in the same term/semester. In addition, the APE courses may be offered in the first year of training, but sometimes it may be taught in the last year, depending on the institutional focus and environment. A majority of PETE programs may expect that the traditional curriculum model could help pre-service teachers to be well prepared to effectively accommodate students with disabilities in inclusive settings. However, this inconsistent approach continuously fails to truly integrate knowledge and experience of disabilities throughout the entire PETE program, and consequently future physical educators may not be adequately trained for inclusion (Ayers & Housner, 2008; DePauw & Goc Karp, 1994b).

One of the primary reasons for failure may be a lack of theory-based approaches to appropriately develop the inclusion related courses in PETE programs. Goodwin and Rossow-Kimball (2012) suggested that many pedagogical actions were often assumed to be beneficial. A number of researchers advocate that many PETE programs do not provide systematic training of inclusion that results in negative feelings toward inclusion and low confidence in using strategies for inclusion (Block & Conatser, 1999; Block & Obrusnikova, 2007; LaMaster et al., 1998; Lieberman, Houston-Wilson, & Kozub, 2002; Lienert et al., 2001; Vogler, 2003). For instance, Lieberman et al. (2002) examined perceived barriers of physical educators when including students with visual impairments in GPE. Lack of professional training was identified as the most prevalent barrier in this study. Thus, it is critical that PETE curriculum need to be partially or entirely restructured to systematically integrate knowledge, skills, and experiences on inclusion issues. Ultimately, this integration will provide sufficient training to future physical educators for inclusion. To thoroughly do this, it will be necessary to employ a sound theoretical model (Rizzo et al., 1997).

The purpose of this article is to propose a theory-based curriculum approach to effectively train pre-service physical educators toward inclusion. This article is divided into two sections. The first section introduces a theoretical framework called the *Transtheoretical Model* (TTM) that can be employed in PETE curricula to improve training related to inclusion. The second section discusses how the TTM-based curriculum approach can be applied in PETE programs. With the application of the TTM, it is hoped that the new curriculum approach will shed light on the way in which physical educators acquire competence to accommodate students with disabilities, as well as giving all students more benefits from inclusive physical education.

Understanding Change of Teaching Behavior Under TTM

The TTM is a powerful, theory-based framework used in a wide range of professions, such as public health, physical activity, and education, to change human behavior (e.g., teaching behavior toward inclusion). The TTM can be used for both behavioral and emotional changes, particularly for decreasing negative factors and increasing positive factors. For example, the TTM can be used to change specific teaching behaviors of physical educators, such as increasing the infrequent use of positive behavior feedback and decreasing the frequent use of verbal desists. The TTM suggests that people do not change all at once, but instead move through a series of stages representing their level of readiness to change, which can be understood as people's current thoughts, feelings, and internal conditions as influenced by external factors (Ciccomascolo & Riebe, 2006; Miller & Rollnick, 1991). This concept is called the *stages of change* (SOC) and it originally consists of five stages (Prochaska, Norcross, & DiClemente, 1994).

The first stage of change is the *precontemplation stage* (Samuelson, 1998). A pre-service physical educator in this stage has no interest about students with disabilities and inclusion in the foreseeable future. A future physical educator in this stage may be uninformed or under-informed about the importance of developing knowledge and experiences regarding inclusion of students with disabilities. In other words, pre-service teachers in the pre-contemplation stage may underestimate the benefits of inclusion and overestimate consequences associated with inclusion practice. The next stage of the SOC is called the *contemplation stage* (Smith & DiClemente, 2000). A pre-service teacher begins to understand the issues associated with disability and benefits of inclusion. According to Prochaska and Norcross (2001), individuals in the contemplation stage are aware of benefits from the changes, but their concerns are greater or equal to their understanding of the benefits. For example, pre-service teachers in the contemplation stage start to realize that inclusive classes can help both students with and without disabilities, but they have many concerns related to inclusive physical education classes. They may worry about the negative consequences, due to the inclusive environment.

The third stage of the SOC is the *preparation stage*, and persons in this stage are willing to take action and may make small efforts (Prochaska et al., 2006). In PETE programs, pre-service teachers in the preparation stage are interested in teaching children with disabilities in their teaching practicum, but they have not taken any, or if so, only very small steps for inclusion. In particular, if there is no appropriate reflective processes, pre-service teachers in this stage may move back to the previous stages, such as precontemplation or contemplation (Prochaska et al., 1994). For instance, if faculty members in PETE program do not provide timely and adequate feedback after the teaching practicum, pre-service teachers may not move to the next stage. Providing opportunities of class discussions about the teaching practicum will be another reflective example to prevent the relapse. The last two stages of

the SOC are the *action* and *maintenance* stages (Guillot, Kilpatrick, Hebert, & Hollander, 2004). Pre-service teachers in the action stage are confidently teaching and accommodating students with disabilities in inclusive physical education classes, and show commitment in their independent teaching practicum. Future educators in this action stage may not need timely and prompt feedback, but they still have the chance to go back to earlier stages unless PETE faculty provide consistent support. Unlike those in the preparation stage, the pre-service teachers in the action stage may go back to contemplation, instead of all the way back to the pre-contemplation stage (Prochaska et al., 2004). Theoretically, pre-service teachers in the maintenance stage have to teach inclusive physical education classes for longer than 6 months. However, pre-service teachers do not have opportunities to teach students with disabilities on a regular basis (i.e., more than six months), and as a result, the maintenance stage may not be feasible in this article. This maintenance stage would better describe in-service teachers than pre-service teachers.

The strength of the TTM is that it provides tailored intervention strategies based on the level of the SOC to change pre-service teachers' intention and behavior toward inclusion. According to Cardinal, Engels, and Zhu (1998), the strategies are called *processes of change* (POC). For practical application of the TTM in PETE programs, understanding POC may be the key element. POC provide specific strategies of how to change individuals' intentions and behavior. Depending on pre-service teachers' levels of the SOC, different POC are used to help them move onto upper-stages with more confidence about inclusion (e.g., pre-contemplation/contemplation to preparation/action stages). The processes consist of five cognitive processes (i.e., consciousness raising, dramatic relief, environmental re-evaluation, self-re-evaluation, and social liberation) and five behavioral processes (i.e., counter-conditioning, helping relationships, reinforcement management, self-liberation, and stimulus control).

Previous studies on a variety of behaviors, such as smoking, physical activity, and psychological distress, demonstrate that people in different stages rely on different POC (Prochaska et al., 2005). For instance, pre-service teachers in the earlier stages (pre-contemplation and contemplation stages) rely more on using cognitive, affective, and evaluative POC, whereas pre-service teachers in the later stages (action and maintenance) rely more on using behavior management POC (Prochaska et al., 2006). Pre-services teachers who have no interests and/or many concerns about inclusion need to be supported by cognitive strategies, such as providing knowledge-focused trainings (e.g., lectures), whereas pre-service teachers who start to modify their lesson plans to accommodate students with disabilities need to be supported by behavioral strategies, such as providing experience-focused trainings (e.g., teaching internships). Pre-service teachers in the preparation stage should be approached with both cognitive and behavioral strategies. For example, providing lecturers with hands-on experiences (e.g., teaching practicum) would be an effective approach to help pre-service teachers in the preparation stage move onto the action stage. Table 1 defines the POC that can be used in inclusion related PETE curriculum.

TTM could provide a theoretical framework to develop a PETE curriculum and to systematically change future physical educators' teaching behavior toward inclusive physical education. Specific strategies to be concentrated on when utilizing TTM-based curriculum in PETE are presented in the following sections.

TTM-Based PETE Curriculum

This TTM-based curriculum is not a new idea. It is an extension of the infusion curriculum approach. Many scholars have advocated the infusion curriculum model for many

Table 1
 Descriptions of Cognitive and Behavioral Processes of Change That Can Be Used in
 Physical Education Teacher Education (PETE)

Process of Change	Definition
Cognitive Processes	
Consciousness Raising	Increasing awareness via information, education, and personal feedback that can positively and effectively teach students with disabilities in inclusive PE.
Dramatic Relief	Experiencing strong motivations about successes in teaching students with disabilities in inclusive PE.
Environmental Re-evaluation	Realizing the positive impact of teaching students with disabilities in inclusive PE classes on colleagues around you and your school environment.
Self-re-evaluation	Realizing that teaching students with disabilities in inclusive PE is an important part of improving educational outcomes.
Social Liberation	Realizing that the social norms are changing in the direction of supporting the value of inclusive PE.
Behavioral Processes	
Counter-conditioning	Substituting educational alternatives for negative intentions associated with teaching students with disabilities in inclusive PE.
Helping Relationships	Seeking and using social support to value inclusive PE
Reinforcement Management	Increasing the rewards to value inclusion of students with disabilities in PE.
Self-liberation	Making a firm commitment to teach students with disabilities in inclusive PE.
Stimulus Control	Removing cues and avoiding situations that devalue inclusive PE.

Note: PE = physical education.

years (Ayers & Housner, 2008; DePauw & Goc Karp, 1994a, 1994b; Hall & Stiehl, 1978; Kowalski, 1995; Kozub et al., 1999; Perlman & Piletic, 2012; Rizzo et al., 1997; Rust & Sinelnikov, 2010; Shapiro, Pitts, Hums, & Calloway, 2012; Sherrill, 1988; Stein, 1969). Briefly, the infusion approach is an alternative way to replace the traditional curriculum model, and it refers to a curriculum approach that educates pre-service teachers about inclusion by consistently and comprehensively integrating knowledge, understanding, and experience on disability-related issues throughout the PETE curriculum. Although several universities have explored curriculum redesign by implementing this infusion approach (Kowalski, 1995; Kozub et al., 1999), it has not become a popular curriculum model in practice. One of the possible reasons for this failure would be that there is a paucity of application ideas in real PETE settings. The critics may argue the infusion approach is not a realistic curriculum approach because it assumes all faculty members who are in the department have expertise on issues associated with disabilities. Since this assumption is questionable, the issues related to inclusion might not be presented in each classroom. To bridge this unrealistic gap between the infusion approach and the practical PETE settings, the TTM-based approach will be introduced. One of the key conceptual differences

between the infusion-based curriculum and the TTM-based curriculum is to keep APE courses independent, instead of attempting to infuse the inclusion-related issues into all PETE courses.

We are proposing a three-stage-model to effectively organize the PETE curriculum in the TTM framework. The idea of the three-stage-model is derived from the original TTM. According to Prochaska et al. (1994), the pre-contemplation and the contemplation stages were designed to change people's intentions, the preparation stage was designed to change both intentions and behavior, and the action and the maintenance stages were designed to change behavior. Therefore, the original SOC was condensed into three stages: (a) changing intentions, (b) changing intentions and behavior, and (c) changing behavior. To appropriately apply these three stages into the PETE curriculum, these stages were incorporated into the proposed curriculum approach in the following sequential manner: (a) stage 1: lecture-focused course; (b) stage 2: lectures with teaching practicum course; and (c) stage 3: internship-focused course. Based on POC, cognitive strategies, combination of cognitive and behavioral strategies, and behavioral strategies were used for pre-service teachers at each course (i.e., stage). These stage-matched processes are logically linked with the central notion that behavior change is a gradual process based on the different stage, instead of advancing all at once. Figure 1 shows a continuum of the TTM-based PETE curriculum model using three-sequence-stages and ten processes.

Stage 1: Lecture-Focused Course

Using the concepts of the pre-contemplation and the contemplation stages of the TTM, this course is intended for pre-service teachers who have a lack of knowledge and understanding about inclusion related issues. Because future teachers in this stage are uninformed or under-informed about inclusive physical education, class activities should be focused on learning appropriate information about issues related to disability and inclusion. Four

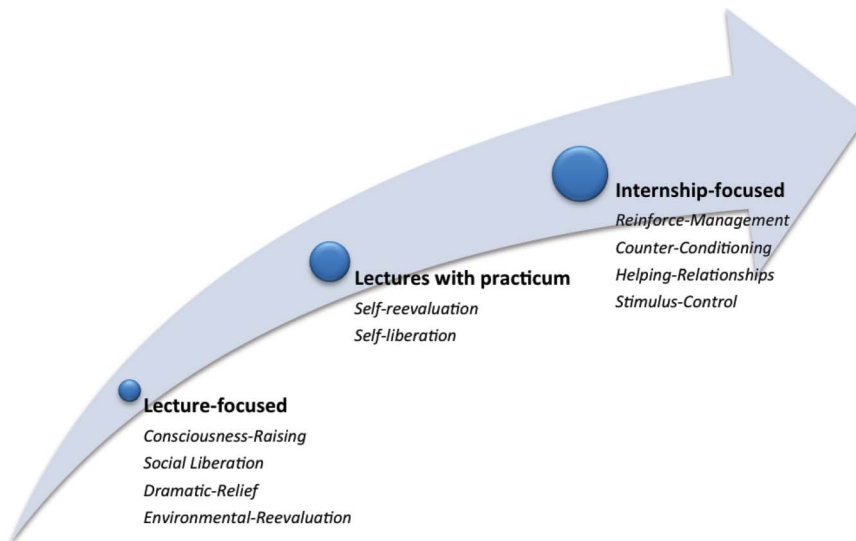


Figure 1. A continuum of the TTM-based PETE curriculum model to promote inclusion (color figure available online).

cognitive strategies can be used to develop the learning-outcomes for those in this stage. *Consciousness raising* is the first strategy because most pre-service teachers in this stage may have little information on disability and inclusion. Introductory APE courses are recommended to raise awareness about history, legal mandates, and the current status of inclusive physical education, and disability sports. Consequently, class activities should be to raise awareness about students with disabilities, so that attitudes and intentions are changed to be positive toward inclusion. By doing so, pre-service teachers learn fundamental knowledge and develop an understanding about individuals with disabilities and have opportunities to change their unfavorable beliefs and attitudes toward inclusion.

Social liberation is an external force creating more choices and alternatives that provide public support. Social liberation not only makes more actions possible, but it can also increase self-esteem. Emphasizing the educational standards, policy, and laws that have been changed toward inclusion would be useful to give pre-service teachers more interests about disability-related issues in this curriculum stage. Students come to believe in their own power and ability to change. Class activities should emphasize that the social norms are changing around their environments. For instance, a class activity can be designed to understand social and environmental forces that influence inclusion in public school settings. Understanding the importance and benefits of inclusive physical education will be another example of class activities.

Dramatic relief, which is a process for emotional change, can be used for pre-service teachers who have many concerns about teaching inclusive physical education. Emotional energy is a powerful force to motivate pre-service teachers, and thus the goal of dramatic relief is to create helpful emotional change to positively include students with disabilities in GPE. Informational materials can be helpful, but they mostly offer “how to” information. Dramatic relief should be focused on getting their adrenaline flowing for emotional change toward students with disabilities. For example, class activities can be watching dramatic materials, including movies, documentaries, and television specials (i.e., emotional arousal strategies) to change beliefs and attitudes about inclusion.

Environmental re-evaluation is the last strategy in the lecture-focused curriculum. This strategy can be understood as the consideration and assessment of how target behavior affects the physical and social environments (Prochaska et al., 1994). Observing inclusive physical education classes at practical settings, such as public schools and community-based programs, can help pre-service teachers to be aware of the positive impact of inclusion. In addition, discussions can also be useful to share and comprehend the positive impact of inclusion around proximal environments. Class activities have to concentrate on understanding the positive impact of inclusive physical education through practical experiences.

Stage 2: Lectures With Teaching Practicum Course

Based on the idea of the preparation stage of TTM, this stage is appropriate for pre-service teachers who are deciding, preparing, and/or beginning to teach inclusive physical education classes in their teaching practicum. This stage uses a blended strategy of cognitive and behavioral processes and is effective because pre-service teachers' positive intentions toward inclusion from the first stage are not completely translated to their teaching behavior. In other words, this stage plays a pivotal role in translating intentions into behavior.

The first strategy is a cognitive approach using self-re-evaluation. This process is an emotional appraisal and it follows naturally from consciousness raising. Once pre-service teachers are well informed about their teaching behaviors and consequences, they begin

to seriously question whether they feel good about themselves while continuing with the new behavior. Successful self-re-evaluation leaves pre-service teachers feeling, thinking, and believing that educational outcomes are substantially improved if they successfully accommodate students with disabilities to meet their educational needs in inclusive physical education classes. Thus, class activities have to provide emotional and cognitive self-appraisals on their own teaching philosophy, beliefs, and attitudes about inclusive physical education. For instance, a class activity can be that the pre-service teachers recognize the needs of inclusive physical education. Making a list of questions about why pre-service teachers want to learn inclusion-related knowledge and strategies and discussing about it is another example of a potential activity.

The second strategy is using a behavioral process. Hands-on experiences, such as teaching practicum, are recommended as the behavioral strategy. *Self-liberation* is a commitment related process to change behavior. This process includes not only a willingness to teach students with disabilities, but also a belief in pre-service teachers' ability for inclusion. Class activities should be planned to demonstrate a passion and eagerness for wanting to teach inclusive physical education. Pre-service teachers can raise their passion and eagerness by having several teaching practicum experiences in public schools or community-based programs.

Stage 3: Internship-Focused Course

Similar to the concept of the action stage of the TTM, the main focus in this course is to help future teachers sustain their positive teaching behavior toward inclusion. Teaching internships with a reflection process are recommended, but mentoring and advising by PETE faculty is also important. Behavioral processes are the primary strategies because pre-service teachers are already taking actions. The first strategy in this stage is called *helping relationship*, which emphasizes support, caring, understanding, and acceptance. A class activity can be to develop cooperation skills to get support from others when needed. For example, pre-service teachers can work as a team, such as co-teaching in one inclusive physical education class. They would observe peer's teaching and provide feedback to each other, thus developing cooperative skills.

Reinforce management is another strategy in this stage because it is developed for sustaining their inclusion related teaching behavior. Although punishment is rarely used in educational settings, rewards are successfully used to change and maintain behavior. A class activity can be that pre-service teachers reflect on lessons after teaching through self-observation and self-assessment on their videotaped lessons. This activity must focus on finding positive things to be rewarded. PETE faculty can provide rewards to pre-service teachers after the reflection time. Before the lesson, in addition, rewards can be given to pre-service teachers when they developed good instructional modifications in lesson plans to meet the educational needs of a student with a disability. Key concepts of the TTM-based PETE curriculum model are summarized in Table 2.

Summary

Inclusive physical education has been a standard educational policy, but many physical education teachers are not well trained to effectively accommodate students with disabilities in the inclusive environment (Rust & Sinelnikov, 2010). The TTM-based curriculum approach is a possible theoretical framework that effectively changes PETE programs to promote inclusion. Stage-matched curriculum (i.e., stage-matched course contents and

Table 2
Key Concepts of the Transtheoretical Model- (TTM)-Based Physical Education Teacher Education (PETE) Curriculum Model

Sequence of curriculum	Goals	Activities
Lecture-focused course: For pre-service teachers who are either not thinking about the inclusive PE or thinking about the inclusive PE in the near future	<ul style="list-style-type: none"> - Change intentions - Help student teachers move onto the next stage 	<ul style="list-style-type: none"> - Raise awareness about history, legal mandates, and current status of inclusive PE - Increase knowledge of students with disabilities - Arouse emotions to change beliefs and attitudes about inclusive PE - Understand the positive impact of inclusion PE around proximal environment
Lectures with teaching practicum: For pre-service teachers who are deciding, preparing, or beginning to teach inclusive PE	<ul style="list-style-type: none"> - Change intentions and teaching behavior - Help future teachers move onto the next stage 	<ul style="list-style-type: none"> - Early teaching practicum for self-appraisal on their own teaching philosophy, beliefs, and attitudes about inclusive PE - Early teaching practicum to assist with instruction when given the opportunity and show enthusiasm for wanting to teach inclusive PE
Internship-focused course: For pre-service teachers who are being able to teach inclusive PE	<ul style="list-style-type: none"> - Change behavior - Help future teachers sustain at regular and consistent teaching behavior toward inclusion 	<ul style="list-style-type: none"> - Develop cooperation skills to work with others in developing lesson plan for inclusive PE - Avoid and remove unfavorable behaviors that devalue students with disabilities in inclusive PE by systematic observations and analysis

Note. PE = physical education.

class activities) along with processes of change could be a pivotal vehicle to efficiently train pre-service physical educators toward inclusive physical education. Implementing a TTM-based approach may be unrealistic in some PETE programs due to their different philosophy and available resources (e.g., employing APE specialists and/or adding more APE courses). However, the TTM-based approach could still be applicable in this case. For instance, introduction to physical education teaching courses could easily accommodate activities of the lecture-focused course presented in Table 2. Activities of the lectures-with-teaching practicum could be simply accommodated by a typical APE course offered in most PETE programs. In addition, elementary or secondary physical education teaching method courses could integrate activities of the internship-focused course. Some people may think that this approach is very similar to the infusion approach, but there is a clear difference that the TTM approach has an evidence-based framework emphasizing the stage-matched strategies to systematically and gradually change pre-service teachers' intentions and behavior. Although these specific strategies have not been directly tested in the PETE curriculum, the TTM approach builds upon the infusion approach, but also differs by providing an evidence-based framework that has been successfully employed in many other fields, including epidemiology, psychology, and public health, to effectively change people's attitudes, intentions, and behavior (Jin, 2008).

Conclusion

In conclusion, the TTM-based approach could be a promising idea to change the PETE curriculum for promoting inclusion, and it is important to understand that each PETE faculty will apply TTM differently. It is hoped that PETE faculty critically think and appropriately apply the TTM framework based on their available resources, so that pre-service physical educators become more competent when they teach inclusive physical education classes. This TTM curriculum model may also help PETE faculty to produce evidence on a program's ability to train teachers who meet NCATE/NASPE standards related to inclusion.

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