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Physical Educators' Self-Efficacy to Teach Students with Disabilities Across Instructional Placements

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PHYSICAL EDUCATORS' SELF-EFFICACY TO TEACH STUDENTS WITH DISABILITIES ACROSS INSTRUCTIONAL PLACEMENTS

by

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ABSTRACT

PHYSICAL EDUCATORS' SELF-EFFICACY TO TEACH STUDENTS WITH DISABILITIES ACROSS INSTRUCTIONAL PLACEMENTS

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Although there are several well used self-efficacy instruments designed to measure PE teachers' self-efficacy to teach students with disabilities, limitations to these scales exits, such as a narrow focus on integrated instructional placements and an absence of theoretically relevant sources of self-efficacy information built within the scales. These limitations translate to a significant gap in the literature between measuring PE teachers' self-efficacy and understanding how sources of self-efficacy information interact to shape PE teachers' self-efficacy beliefs, as well as understanding how different instructional placements may inform efficacy. This dissertation was structured in a two-manuscript approach. The purpose of the first study was to develop and validate a scale designed to measure PE teachers' self-efficacy and sources of information to teach students with disabilities across different types of instructional placements for PE. The scale was constructed in four phases: (a) item development, (b) content validity, (c) exploratory factor analysis, and (d) confirmatory factor analysis. Data from 268 (172 males; 86 females; five others; five undisclosed) and 169 (105 females; 64 males; one undisclosed) participants was used for exploratory factor analyses and confirmatory factor analyses, respectively. The final instrument comprises 29-items including a 7-item (one factor) self-efficacy scale and an 8-item (two factor) efficacy-relevant information subscale for teaching students with disabilities in an integrated PE placement, as well as a 7-item (one factor) self-efficacy scale and 7-item (two factor) efficacy-relevant information subscale for teaching

students with disabilities in a self-contained PE placement. The purpose of the second study was to examine the differences in PE teachers' self-efficacy to teach students with disabilities across integrated and self-contained classes as well as the association between efficacy-relevant information and PE teachers' beliefs in their capabilities to teach across each placement. A total of 169 (105 females; 64 males; one undisclosed) in-service PE teachers in the US completed the scale developed in study one as well as a demographic questionnaire. Differences in self-efficacy between placements were tested using analyses of covariance, and associations between variables were explored via structural equation modeling. No significant differences were found between PE teachers' self-efficacy to teach in an integrated placement compared to a self-contained placement. Further, no distinctions in self-efficacy were found among PE teachers with experience teaching in only integrated or self-contained placements. However, those with experiences in both placements reported a slightly higher self-efficacy to teach in a self-contained placement. Favorable efficacy-relevant information was a direct predictor of PE teachers' self-efficacy in both integrated and self-contained classes, however, unfavorable efficacy-relevant information had only an indirect prediction on self-efficacy with favorable efficacy-relevant information serving as a mediator. Further research may consider exploring diverse methodological procedures aiming to further connect the impact of efficacy-relevant information on PE teachers' self-efficacy across instructional placements to extend our understanding of why and how self-efficacy appears consistent across instructional settings.

This dissertation is dedication to my partner, DaVonté Christmas. Your unwavering support, patience during late nights, encouragement during moments of doubt, and belief in my abilities throughout my entire college education have truly made this accomplishment possible. I am forever grateful for you.

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CHAPTER I: INTRODUCTION

Much research has been conducted on physical educators' self-efficacy to teach students with disabilities based on Banduras' (1977; 1997) concept of self-efficacy, which will be unpacked in the next section of the introduction. Most of this literature base, to date, concerns integrated physical education (PE) placements, with little known about PE teachers' beliefs towards teaching students with disabilities in other contexts, such as self-contained classes (Nowland & Haegele, 2023). Importantly, the term "integrated" used herein refers to an educational setting in which students with and without disabilities are educated in the same physical space (Haegele, 2019), while self-contained classes serve as an alternative placement option for students with disabilities whose needs could not be or are not being appropriately met in integrated classes (Wilson et al., 2019). The scholarly focus on integrated PE may be logical given that more students with disabilities are being educated in integrated spaces than ever before (Haegele, 2019; USDE, 2022), and notably, PE classes have been identified as one of the first subjects within schools to integrate students with disabilities (Maher & Haegele, 2022). For example, findings from the 2015 School Health Policies and Practices Study revealed that, of the 68% of US public schools requiring PE for students with disabilities, 55% provide only integrated PE classes (CDC, 2015).

The role of the PE teacher in the PE experiences of students with disabilities has been well documented (Holland & Haegele, 2021). Of concern are the negative integrated PE experiences expressed by students with disabilities, such as experiences with discrimination and exclusion from activities (Tanure Alves et al., 2018; Wang, 2019), which are often linked to the attitudes and values demonstrated by their PE teachers (Tanure Alves et al., 2020). Conversely, studies exploring the PE experiences of students with disabilities in self-contained classes have

described more favorable perceptions from such students, detailing more activity engagement and overall enjoyment during PE (Blagrave, 2017; Pellerin et al., 2022; Yessick et al., 2020). One central feature to participants positive experiences in these self-contained studies was the availability of accommodative activities that supported students' participation, which may be attributed to their teachers' confidence in their abilities to teach within that setting.

Over time, researchers have examined PE teachers' beliefs, attitudes, and intentions towards teaching students with disabilities in integrated PE classes (Hutzler et al., 2019; Nowland & Haegele, 2023). We know that PE teachers with higher self-efficacy are more likely to implement accommodative practices and modifications for students with disabilities to participate in activities than those with a low self-efficacy (Bandura, 1997; Block et al., 2010). For example, in a study on in-service PE teachers' self-efficacy to teach students with autism, Beamer and Yun (2014) reported significant relationships between PE teachers' self-efficacy and their attitudes, intentions and self-reported teaching behaviors towards teaching students with autism. This line of inquiry is typified by quantitative designs employing one of two commonly used situation- and disability-specific instruments that have been validated and shown reliability for measuring PE teachers perceived self-efficacy, the Physical Educators' Self-Efficacy Toward Including Students with Disabilities-Autism (PESEISD-A; Taliaferro et al., 2010) and the Self-Efficacy Scale for Physical Education Teacher Education Majors toward Children with Disabilities (SE-PETE-D; Block et al., 2013). However, there are limitations to these scales, including a narrow focus on integrated placements and an absence of sources of self-efficacy information built within the scales. These limitations translate to a significant gap in the literature between measuring PE teachers' self-efficacy and understanding how the four sources of self-efficacy information posited by Bandura (1977; 1997) interact to shape PE teachers' self-

efficacy beliefs, as well as understanding how different instructional placements may inform efficacy.

While there is no universally recognized continuum of instructional placement options for students with disabilities, two settings that are relatively common options for students with disabilities in PE include: (1) integrated PE with support services, and (2) self-contained PE with support services. The first level, integrated PE with support services, refers to integrated classes where students with and without disabilities are educated in the same physical space with support services, such as another teacher, working alongside students with disabilities during instruction. The next option, self-contained PE, serves as an alternative PE placement option and is typically offered in a small group of only students with disabilities whose needs could not be, or are not being, appropriately met in integrated PE classes (Wilson et al., 2019). While much research has been conducted on PE teachers' self-efficacy to teach students with disabilities in integrated PE placements, little is known about how self-efficacy to teach such students may be influenced by the instructional placement.

Theoretical Framework

Self-efficacy, situated within Bandura's (1986, 1997) social cognitive theory, provides a useful framework for understanding and measuring one's perceived confidence and therefore, was adopted as the theoretical framework for this study. Bandura (1997) defined self-efficacy as "beliefs in one's capabilities to organize and execute the course of action required to produce given attainments" (p. 3). An individual's self-efficacy beliefs influence the way they approach a task, thus predicting their exerted effort and perseverance during challenging situations (Bandura, 1977, 1997). As such, and applied to the PE context, a PE teacher's level of self-efficacy may impact their ability to provide accommodations to support the learning needs of all

students, including students with disabilities (Block et al., 2010). Known as a context- and task-specific construct, an individual may have a high self-efficacy for teaching students with disabilities in one instructional PE placement, however their beliefs in their capabilities may differ when teaching the same students within different instructional PE placement options (Tschannen-Moran et al., 1998; Winnick, 2017).

Bandura (1977, 1997) proposed four informational sources that together interact to shape an individual's self-efficacy beliefs: mastery experiences, vicarious experience, social persuasion, and physiological responses. Mastery experience, otherwise known as the interpretation of ones' previous experiences, have been found to be the most influential source of self-efficacy and can be viewed as successful or unsuccessful (Bandura, 1997; Schunk & Pajares, 2010). While a previous experience perceived as positive may boost an individuals' self-efficacy, negative experiences can have the reverse effect and decrease their self-efficacy perceptions (Bandura, 1977). Bandura (1997) argued that when prior experience is limited, individuals may evaluate their capabilities by comparison to others. Vicarious experience, regarded as the second strongest source influencing self-efficacy, is the information gained from observing others perform a similar task (Schunk & Pajares, 2010). Known to be most influential in combination with other sources, social persuasion is the third source influencing an individuals' self-efficacy beliefs. For example, the capability related feedback an individual receives from others, whether positive or negative, has been found to influence their own beliefs in their capability in future performances (Bandura, 1997; Morris et al., 2017). An individuals' self-efficacy is also informed by interpretations of their somatic responses during performance. Physiological states, such as stress or anxiety, while teaching can influence their beliefs in their capabilities to perform a similar task in a similar context in the future (Tschannen-Moran et al., 1998).

Statement of Problem

The role of the PE teacher in the learning experiences of students with disabilities has been highlighted by research on insider accounts of students with disabilities' PE experiences in integrated classes, illustrating negative PE experiences due to an unchanged curriculum and activities that do not support their participation (Haegele & Maher, 2021; Holland & Haegele, 2021). Although there has been a considerable amount of research on physical educators' self-efficacy toward teaching students with disabilities in integrated PE classes (Nowland & Haegele, 2023), there is a lack of research examining their self-efficacy across different levels of instructional placements for students with disabilities (Winnick, 2017). Additionally, there is a lack of research examining how the four sources of self-efficacy information posited by Bandura (1977; 1997) interact to shape PE teachers' self-efficacy beliefs. The current studies aimed to examine to what degree instructional PE placements impacts PE teachers' self-efficacy and the differential influence that the four sources of self-efficacy have on PE teachers' self-efficacy across these placements for teaching students with disabilities.

Purpose of the Studies

The current dissertation was conducted in a multiple-article format. Therefore, each manuscript has its own purpose and research design. The purpose of the first study was to develop and validate a scale designed to measure PE teachers' self-efficacy to teach students with disabilities across different levels of instructional placements for PE. The purpose of the second study was to examine the differences in PE teachers' self-efficacy to teach students with disabilities across integrated and self-contained classes as well as the association between efficacy-relevant information and PE teachers' beliefs in their capabilities to teach across each placement.

Research Questions

1. Is the newly developed Self-Efficacy to Teach Students with Disabilities Across Instructional Placements for Physical Education Scale (SETSD-IPPES) a valid and reliable measure of PE teachers' self-efficacy to teach students with disabilities across different levels of instructional PE placements for such students?
2. Is there any significant difference in PE teachers' self-efficacy to teach students with disabilities between the instructional PE placements?
3. To what degree does the sources of self-efficacy information (i.e., mastery experience, vicarious experience, social persuasion, and physiological response) predict PE teachers' self-efficacy to teach students with disabilities across instructional PE placements for students with disabilities?

Significance of Studies

The first study provides an opportunity to further understand the impact instructional placements in PE classes have on PE teachers' self-efficacy to teach students with disabilities. By developing and validating a new instrument, scholars may be able to examine the impact of instructional placements across various geographical locations with different socio-demographic groups of PE teachers. The second study expanded scholars understanding of the degree that PE teachers' self-efficacy to teach students with disabilities is influenced by the placement in which the instruction is given, by being the first study, to the authors' knowledge, to measure PE teachers' self-efficacy to teach students with disabilities within different levels of instructional placements for PE. This study also explored the association between efficacy-relevant information and PE teachers' self-efficacy across the two placements. Results from this study may be used to problematize or support assertions for the usefulness of integrated PE settings.

Delimitations

1. The inclusion criteria were purposefully limited to include only PE teachers currently working in a K-12 educational school setting.
2. The instruments that were used in the studies are written in the English language, therefore, the study was limited to only PE teachers who are fluent in the English language.
3. The recruitment of participants was done through a generated listserv which limits the sample to those included on the listserv.

Limitations

1. The study did not employ an interventional design, limiting the opportunity to form causal relationships between instructional placements, self-efficacy, and the sources of self-efficacy information.
2. As individuals interested in working with students with disabilities may be more willing to participate in such research, the study may not be a representative sample of the population.
3. Since participants were recruited from the United States, the transferability of results to PE teachers working in other countries will not be assumed.
4. The instructional PE placements that were used were derived from three pieces of literature (Columna et al., 2010; Lieberman et al., 2017; Winnick, 2017). It is possible that other instructional PE placements, unknown to the author, exist for students with disabilities in the United States that warrant further exploration.

Definition of Terms

Instructional Placement: The physical setting in which instruction takes place (Winnick, 2017).

Integration/integrated PE classes: A physical education class in which students with and without disabilities are educated in the same physical space (Haegele, 2019).

Mastery Experience: A source of self-efficacy involving an individuals' interpretation of their previous performance in a specific task (Bandura, 1997).

Physical Education: "Academic subject that provides a planned, sequential, K-12 standards-based program of curricula and instruction designed to develop motor skills, knowledge and behaviors for healthy, active living, physical fitness, sportsmanship, self-efficacy and emotional intelligence" (SHAPE America, 2015, p.3).

Physiological Response: A source of self-efficacy referring to an individuals' somatic state during performance, such as anxiety or worry (Bandura, 1997).

Self-Efficacy: "Beliefs in one's capabilities to organize and execute the course of action required to produce given attainments" (Bandura, 1997, p. 3).

Social Persuasion: A source of self-efficacy referring to capability related feedback an individual receives from others (Bandura, 1997; Morris et al., 2017).

Sources of Self-Efficacy: An individuals' self-efficacy beliefs are constructed through their interpretation of four informational sources (i.e., mastery experience, vicarious experience, social persuasion, and physiological response) (Bandura, 1977, 1997).

Vicarious Experience: A source of self-efficacy involving the information an individual's gains relative to their own capability from observing others perform a similar task (Bandura, 1997).

CHAPTER II: LITERATURE REVIEW

The purpose of this chapter is to review current literature relevant to physical education (PE) teachers' self-efficacy to teach students with disabilities. An introduction to the theoretical underpinnings guiding the current research is first provided, followed by an application of the framework situated within teacher's self-efficacy research is examined. Next, research specific to PE teachers' self-efficacy is discussed with detailed attention to research focusing on teaching students with disabilities. Following this, literature on PE placement options for students with disabilities is discussed as well as a brief discussion on their experiences in PE.

Theoretical Framework

According to social cognitive theory, human functioning is the result of triadic reciprocal causation between an individuals' personal influences, their behavior, and the environment (Bandura, 1986; 2012). An individual's prior knowledge and beliefs are used to interpret the task at hand, including any environmental factors, that as a result, interact to form future expectations, thus determining one's future behavior. Bandura (2001) distinguishes between three types of environments: imposed, selected, and constructed. The imposed environment refers to the given setting in which the individuals' behavior is to take place, such as the classroom setting a teacher is to provide instruction. Although individuals may have limited control over the external environment they are put in, they do possess the ability to choose how to react to it, thereby shaping their selected environment (Bandura, 2012). Consequently, the behaviors an individual chooses to engage in then forms their constructed environment.

Bandura (1997) asserts the dynamic role of personal factors (e.g., knowledge, perceptions, self-efficacy) influencing an individuals' behavior within the environment. Self-efficacy beliefs, recognized as a particularly influential personal factor of ones' behavior

(Bandura, 1977), influences cognitive, motivational, and decisional processes, which in turn impact the quality of human functioning (Bandura, 1986). As self-efficacy plays a central role in ones' cognitive processes, it is the central tenet of focus in our study and will be unpacked hereafter.

Self-Efficacy and its Sources

Situated within Banduras' (1986; 1997) social cognitive theory, the concept of self-efficacy has provided significant contributions toward our understanding of motivational frameworks. Bandura (1997) defined self-efficacy as "beliefs in one's capabilities to organize and execute the course of action required to produce given attainments" (p. 3). In essence, efficacy expectations encompass ones' belief that they can successfully perform the behavior necessary to yield an outcome. Known as a relatively context-specific construct, self-efficacy beliefs concern individuals' perceived capabilities for future-oriented performances within specific domains of functioning (Bandura, 1977). An individual's self-efficacy beliefs influence the way they approach a task, thus predicting their exerted effort and perseverance during challenging situations (Bandura, 1977, 1997). Individuals are more likely to engage in activities confidently when they believe they possess the capabilities to execute the appropriate behavior to produce the desired outcome. On the other hand, when individuals do not feel competent in their capabilities, they are less likely to strive in the face of difficulties. Subsequently, self-efficacy beliefs influence an individual's choice of behaviors during performance within the given environment (Schunk & Pajares, 2010).

Bandura (1977, 1997) proposed four informational sources that, together, interact to shape an individuals' self-efficacy beliefs: mastery experience, vicarious experience, social persuasion, and physiological response. Individuals must cognitively process information

gathered from these sources by selecting, weighting, and integrating information to construct self-efficacy beliefs. Regarded as the most influential source of self-efficacy information, mastery experience consists of an individuals' interpretated results of ones' past performances (Bandura, 1997; Schunk & Pajares, 2010). An individual's previous experience performing a specific task in a given situation provides authentic evidence of ones' capability to succeed in future performances under similar circumstances. Mastery experience is noted to be especially powerful when an individual finds success in a challenging situation (Bandura, 1997). However, in situations where ones' success is due in part on the help from others, their self-efficacy may not be altered if the achievement is credited to factors other than their own ability. While a previous experience perceived as positive may boost an individuals' self-efficacy, repeated negative experiences can take the reverse effect and ultimately decrease self-efficacy beliefs (Bandura, 1977). Importantly, Bandura (1997) notes that the impact of failures on ones' self-efficacy beliefs is especially potent in the early stages of skill development, when an individuals' sense of efficacy has yet to be established.

Vicarious experience, regarded as the second strongest source influencing ones' self-efficacy beliefs, is the information gained from observing others perform a similar task. Bandura (1997) argued that when prior experience is limited, individuals may evaluate their capabilities by comparison to others. Notably, vicarious experiences are particularly powerful when the model is perceived as similar to the observer (Schunk & Pajares, 2010). Subsequently, when observing models succeed at a given task, individuals may think they too possess the capabilities to carry out the same task successfully. Conversely, observing comparable models experience failure despite great perseverance can result in adverse effects on a individuals' self-efficacy beliefs (Bandura, 1994). Although direct evidence of ones' abilities is a more dependable source

of self-efficacy beliefs, the information conveyed through modeled attainments can offset the influence of direct experiences through the acquisition of new knowledge, skills, and effective strategies (Bandura, 1997). Social comparisons then become a primary indicator in ones' judgements of their capabilities. In addition to live models, Bandura (1977) noted how sources of vicarious influence can also be interpreted from verbal and symbolic models. Models can share problem-solving strategies verbally by detailing their cognitive plans and processes to generate new knowledge and solutions for the observer. Bandura (1997) further stated that symbolic models, such as books and other visual media, "who exhibit useful skills and strategies raises observers' beliefs in their own capabilities" (p. 93).

Social persuasion is the third source influencing ones' self-efficacy beliefs. The verbal persuasions, usually in the form of feedback, individuals receive from others plays an important role in the construction of ones' self-efficacy beliefs. Bandura (1997) notes that social persuasion must not be mistaken as mere praise but rather refers to capability-related feedback regarding ones' performance. Individuals who are effectively persuaded to believe they possess the ability to successfully achieve a specific goal, with the provision of adequate support, exhibit a greater inclination to act and invest effort as compared to those who receive support alone (Bandura, 1977; Morris et al., 2017). However, in the case of unrealistic persuasions related to ones' capabilities, failures in the recipients' attempts can discredit the individual providing feedback and have negative effects on ones' self-efficacy beliefs. An individuals' self-efficacy is also informed by interpretations of their physiological state during performance. Affective states, such as stress or anxiety, during performance can influence individuals' beliefs in their capabilities to perform a similar task in a similar context in the future (Bandura, 1994; Tschannen-Moran et al., 1998). Individuals often relate their physiological state of stress or

struggle as signs of failure in their abilities. Bandura (1997) notes how in such situations, people are less inclined to expect success in the future which can lower self-efficacy beliefs.

Teacher Self-Efficacy

Several researchers have attempted to better understand teacher self-efficacy through the application of Bandura's social cognitive theory. In doing so, multiple definitions of teacher self-efficacy have been proposed, ultimately muddying current understandings of this concept within teacher research (Wyatt, 2015). Ross and colleagues (1996), for example, defined teacher self-efficacy as "an individual teacher's expectation that he or she will be able to bring about student learning" (p. 386). Another definition by Tschannen-Moran and colleagues (1998) defined teacher self-efficacy as "the teacher's belief in his or her capability to organize and execute the courses of action required to successfully accomplish a specific teaching task in a particular context" (p. 233). Dellinger and colleagues (2008) provided a similar definition stating that teachers' self-efficacy beliefs are teachers' "individual beliefs in their capabilities to perform specific teaching tasks at a specified level of quality in a specified situation" (p. 752). Yet another more recent definition of teacher self-efficacy defines these beliefs as "teachers' beliefs in their abilities to support learning in various task-, domain- and context-specific cognitive, metacognitive, affective and social ways (Wyatt, 2018, p. 93). Given these multiple and ambiguous definitions of teacher self-efficacy provided within the literature, the concept of self-efficacy defined by Bandura (1997) as "beliefs in one's capabilities to organize and execute the course of action required to produce given attainments" (p. 3), will be used.

Research on Teacher Self-Efficacy

Following several conceptualizations of teacher self-efficacy, numerous instruments have been created in an attempt to measure this construct. One of the more commonly used

instruments within this line of inquiry (n = 20; Morris et al., 2017) was developed and validated by Tschannen-Moran and Woolfolk Hoy (2001) titled the Teacher Self Efficacy Scale (TSES). The TSES is a nine-point Likert-type measure consisting of 24-items within three subscales: instructional strategies (α = .91), classroom management (α = .90), and student engagement (α = .87). Designed to be non-domain specific, the TSES is not directed toward any one content area (e.g., science, history, PE), however researchers have modified items to measure specific types of teaching self-efficacy (Chacon, 2005; Tschannen-Moran & Johnson, 2011). Research within this line of inquiry supports the assertion that teacher self-efficacy is linked with behavior and motivation and affects the effort one exerts in the classroom (Poulou, 2007; Tschannen-Moran & Hoy, 2001). However, as Bandura (1997) asserted that self-efficacy measures should be geared toward the specific content area in question, there is debate over the applicability of generic teaching self-efficacy scales.

In an attempt to connect theoretical underpinnings described by Bandura (1977; 1997) to teacher self-efficacy, Poulou (2007) designed a 30-item Teacher Efficacy Sources Inventory that included the four sources of information (i.e., mastery experience, vicarious experience, social persuasion, and physiological response), as well as factors not described by Bandura (i.e., personality characteristics, capability skills, motivation, and university training). Poulou (2007) administered the 30-item inventory as well as the TSES to 198 pre-service elementary teachers in Greece. Issues emerged with Poulou's (2007) Teacher Efficacy Sources Inventory, such as the need to combine mastery experiences and social persuasion subscales due to factor analysis results as well as low reliability scores among all three of the sources of self-efficacy information subscales (mastery experience with social persuasion [α = .79], vicarious experience [α = .78], and physiological state [α = .72]). Similar findings have been reported by researchers using

Poulou's (2007) original version of the Teacher Efficacy Sources Inventory (Oh, 2011), while slightly higher reliability values ($.75 \leq \alpha \leq .82$) have been reported when using a modified version of the instrument to include less items (O'Neil & Stephenson, 2012).

As a consequence of inconsistent measures within this line of inquiry, the relationship between the sources of information and teachers' self-efficacy beliefs remains enigmatic. While the bulk of research on teacher self-efficacy has taken a quantitative approach (Morris et al., 2017), some researchers have attempted to address these methodological shortcomings through the application of qualitative designs. For example, in Phan and Lockes' (2015) qualitative exploration of Vietnamese university professors teaching self-efficacy, participants noted the social persuasions they received from other coworkers and students to be highly influential on their self-efficacy beliefs. Morris and Usher (2011) reported similar findings in which social persuasions in combination with mastery experiences were particularly influential sources of university professors teaching self-efficacy. When exploring pre-service teachers' self-efficacy beliefs, Johnson (2010) and Mills (2011) reported that vicarious experiences, observing liked counterparts, was described by participants as being the most influential source of self-efficacy information. Other researchers still contend that mastery experience plays the most significant role in the construction of teachers' self-efficacy beliefs (Ma et al., 2022; Poulou, 2007).

Extending off of the previously developed TSES designed to measure general teacher self-efficacy (Tschannen-Moran & Woolfolk Hoy, 2001), some scholars have developed instruments specific to teaching students with disabilities (Dawson & Scott, 2013; Hartmann, 2012; Ruble et al., 2013; Sharma et al., 2012). While Hartmann (2012) developed the Teacher Efficacy in Deafblindness Education Scale (TEDE) to measure teachers' self-efficacy to teach students with deaf-blindness, Ruble and colleagues (2013) created the Autism Self-Efficacy

Scale for Teachers (ASSET) to evaluate a more specific measure related to teaching students with autism. Notably, both the TEDE and the ASSET were designed to target special education teachers' self-efficacy beliefs, excluding general education teachers' perceptions of their capabilities to teach students with disabilities.

Sharma and colleagues (2012) and Dawson and Scott (2013) took different approaches, aiming to develop a measure to assess general education teachers' self-efficacy for teaching students with disabilities in general education classes. Using the term *inclusion* as a designated space in which students with disabilities are taught in classes alongside students without disabilities, Sharma and colleagues (2012) developed the Teacher Efficacy for Inclusive Practices (TEIP) scale to measure general education teachers' self-efficacy to include all learners (i.e., non-disability specific). Guided by relevant literature on 'inclusive education', the TEIP is comprised of 18-items within three skill areas researchers found necessary for teaching in 'inclusive' classrooms: efficacy to use inclusive instructions ($\alpha = .93$), efficacy in collaboration ($\alpha = .85$), and efficacy in managing behavior ($\alpha = .85$).

Guided by the framework used to the construct the TSES (Tschannen-Moran & Woolfolk Hoy, 2001), Dawson and Scott (2013) developed the Teaching Students with Disabilities Efficacy Scale (TSDES) to assess both pre- and in-service general education teachers' self-efficacy for teaching students with disabilities. The TSDES is a 19-item, 9-point Likert scale instrument containing five subscales: instruction ($\alpha = .88$), professionalism ($\alpha = .84$), teacher support ($\alpha = .85$), classroom management ($\alpha = .88$), and related duties ($\alpha = .78$). Additionally, to examine the relationships between the TSDES and the original TSES (Tschannen-Moran & Woolfolk Hoy, 2001), participants in Dawson and Scotts' (2013) study completed both instruments. Data analyses between the two instruments yielded a positive correlation ($r = .742$,

p = .000) that assessed similar, albeit not identical, constructs, further suggesting the need for context-specific instruments assessing self-efficacy specific for teaching students with disabilities.

Physical Educators' Self-Efficacy to Teach Students with Disabilities

Much research has been conducted on physical educators' self-efficacy to teach students with disabilities based on Bandura's (1977; 1997) concept of self-efficacy. Hutzler and colleagues (2019) conducted a review of literature in this line of inquiry, with an additional focus on the attitudes of PE teachers towards teaching students with disabilities. Notably, out of the 75 articles included in their review, only 12 studies were situated within self-efficacy theory while 54 articles were centered on PE teachers' attitudes. A more recent review that was restricted to research theoretically grounded in self-efficacy theory included 24 studies examining PE teacher's self-efficacy to teach students with disabilities (Nowland & Haegele, 2023). Some consistencies exist between Hutzler and colleagues' (2019) and Nowland and Haegele's (2023) reviews, such as: (a) the limited exploration of the four sources of self-efficacy relevant information posited by Bandura (1997), (b) the quantitative nature dominating this scope, (c) the majority of the research was conducted on pre-service PE teachers with limited findings related to in-service PE teachers, and (d) this line of inquiry has centered on integrated PE classes, lacking information related to PE teachers self-efficacy to teach students with disabilities in self-contained placements. The following section further reviews published findings with specific attention to theoretically grounded self-efficacy research addressing in-service PE teachers' self-efficacy to teach students with disabilities including (a) survey development and validation research, (b) cross-sectional studies, and (c) experimental designs.

Survey Validation Research

There are two commonly used situation- and disability-specific instruments that have been validated and shown reliability for measuring PE teachers perceived self-efficacy (Nowland & Haegele, 2023), the Self-Efficacy Scale for Physical Education Teacher Education Majors Toward Children with Disabilities (SE-PETE-D; Block et al., 2013) and the Physical Educators' Self-Efficacy Toward Including Students with Disabilities-Autism (PESEISD-A; Taliaferro et al., 2010). Created and validated by Block and colleagues (2013) among a pre-service PE teacher sample in the US, the SE-PETE-D is a 25-item measure utilizing a 5-point Likert-type scale assessing physical educators' self-efficacy toward teaching students with intellectual disabilities, physical disabilities, and visual impairments in integrated PE. The instruments' three subscales for each included disability contains a vignette description of a student with that disability, followed by three sets of questions related to three PE situations (i.e., fitness testing, sport skills, game play; Block et al., 2013). What is not provided within this scale is a clear understanding of how each of the four sources of self-efficacy are examined, however it is a very commonly used measure, with 17 out of the 24 studies included in Nowland and Haegele's (2023) review utilized the SE-PETE-D.

Another commonly used instrument in this line of inquiry, the PESEISD-A was developed and validated by Taliaferro and colleagues (2010) among an in-service PE teacher sample in the US. The PESEISD-A is a 10-item measure utilizing a 10-point Likert-type scale to assess PE teachers' self-efficacy toward teaching students with autism in integrated PE. The instrument includes a description of a child with autism followed by 10 teaching tasks for students with autism in integrated PE: (1) modify equipment, (2) modify activities, (3) create a safe environment, (4) promote social interactions with peers, (5) manage behaviors, (6) modify

instructions, (7) assess the motor skills, (8) modify rules to games, (9) collaborate effectively with other teachers/professionals, and (10) motivate students.

The original PESEISD-A contained six subscales (i.e., mastery experiences, vicarious experiences, social persuasions, behavior, physiological state, and challenges), including the four sources of self-efficacy information posited by Bandura (1997). However, the six subscales were not subjected to exploratory and confirmatory factor analyses (Taliaferro et al., 2010) and therefore, the measurement of the four sources of self-efficacy information within PE teacher research is scarce. Selickaitė and colleagues (2018) are the only researchers to report on the psychometric properties of these subscales on a sample of in-service PE teachers in Lithuania. The results from this study supported the psychometric properties of the PESEISD-A, as well as a positive relationship between each of the subscales, including the four sources of self-efficacy, and PE teachers' self-efficacy to teach students with autism in integrated PE (Selickaite et al., 2018).

Correlation, Comparative, and Descriptive Research

While there is limited research exploring the relationship between self-efficacy and the four sources of information posited by Bandura (1997), researchers have examined additional correlates to PE teachers' self-efficacy to teach students with disabilities in GPE classes (Nowland & Haegele, 2023). For example, in one of the earliest studies on PE teacher self-efficacy, Hutzler and colleagues (2005) reported a significant relationship between PE teachers' attitudes and their self-efficacy to teach students with disabilities. Additionally, significant, positive relationships have been found between pre- and in-service PE teachers' self-efficacy beliefs and previous adapted physical education (APE) course experience (Beamer & Yun, 2014; Koh, 2018; Wang et al., 2020), which Beamer and Yun (2014) also found to predict self-reported

inclusive and quality service behaviors. As part of a survey validation study of the PESEISD-A in China, Li and colleagues (2018) employed a cross-sectional approach to measure the relationship between PE teacher's self-efficacy towards teaching students with autism and additional constructs of life satisfaction and teacher burnout. Perhaps unsurprisingly, self-efficacy was found to be positively related to life satisfaction and negatively associated with teacher burnout (Li et al., 2018).

The majority of cross-sectional studies in this line of inquiry have been conducted on pre-service PE teachers, with only two out of the seven cross-sectional studied included in Nowland and Haegele's (2023) review consisting of in-service PE teachers. Kavanaugh and colleagues (2021) compared how professional preparedness between PE teachers, APE teachers, and recreational therapists and their psychosocial beliefs (i.e., self-efficacy and attitudes) affect their behavioral intentions and quality service behaviors in teaching students with disabilities. Results from this study revealed that PE teachers demonstrated significantly lower self-efficacy, attitudes, and behavioral intentions towards teaching students with disabilities compared to APE teachers and recreational therapist (Kavanaugh et al., 2021). Furthermore, Beamer and Yun (2014) reported significant relationships between in-service PE teachers' self-efficacy and their attitudes, intentions, and self-reported teaching behaviors towards teaching students with autism.

Intervention Research

In terms of experimental studies, in which researchers have employed some sort of intervention, a large corpus of studies has included pre-service PE teachers (n = 7) with only two interventions conducted on in-service PE teachers (Nowland & Haegele, 2023). While different types of interventions have been employed within this scope, the most commonly implemented type involves training effects on both pre- and in-service PE teachers' self-efficacy to teach

students with disabilities. For example, Alhumaid and colleagues (2021) and Reina and colleagues (2019) utilized the *Incluye-T* guide to inform the creation and execution of their interventions. The *Incluye-T* guide was designed to help ensure consistency and effectiveness across programs with specific attention to teaching students with intellectual disabilities, physical disabilities, visual impairments, and hearing impairments in integrated PE classes (Reina et al., 2019). In both studies, the programs consisted of six professional development sessions designed to increase physical educators' self-efficacy towards teaching students with disabilities in integrated PE classes by providing participants with mastery experiences, vicarious experiences, and social persuasions. While one study examined participants at the pre-service level (Alhumaid et al., 2021) and the other study included in-service PE teachers (Reina et al., 2019), both studies found significant improvement in self-efficacy beliefs from pre- to post-test measures and between experimental and control groups.

In another intervention study, Kwon and Block (2017) implemented an APE e-learning supplement intervention on pre-service PE teachers by providing participants with mastery experiences, vicarious experiences, and social persuasions with regard to teaching students with intellectual disabilities. The researchers randomly assigned participants to either the e-learning group with online supplement, the traditional learning group with paper supplements, or the control with no supplement. While the traditional group was only provided content knowledge without the additional sources of self-efficacy, there were no significant differences in self-efficacy between the e-learning and the traditional group post-test scores, however both were significantly greater than the control (Kwon & Block, 2017). One can infer that the additional fourth source of self-efficacy, physiological responses, may have contributed different results between the e-learning group and the traditional learning group.

When reviewing existing literature, it appears that PE teachers' self-efficacy to teach students with disabilities may be too complex to change during short-durational workshops (Hutzler et al., 2019; Nowland & Haegele, 2023). For example, Taliaferro and Harris (2014) assessed PE teachers' self-efficacy towards teaching students with autism before and after participation in a one-day workshop on educational information for working with students with autism (e.g., strategies for adapted equipment, modifying instruction, and ensuring safety) in integrated PE. From pre- to post-test measures, researchers found no significant improvement in the self-efficacy beliefs of in-service PE teacher participants (Taliaferro & Harries, 2014). Although no improvement was found after a one-day workshop among in-service teachers, Foley and colleagues (2020) reported a positive effect on pre-service PE teachers' self-efficacy after volunteering at a 1-week summer sports camp for children with disabilities.

Physical Education for Students with Disabilities

In the United States (US), the Individuals with Disabilities Education Improvement Act (IDEA; 2004) mandates that students with disabilities have equal access to educational services, including PE, in the least restrictive environment. Subsequently, educational trends display a considerably powerful shift from segregated environments to integrated settings where students with disabilities are being educated in the same physical space as students without disabilities (USDE, 2022). Importantly, PE classes have been identified as one of the first subjects within schools to integrate students with disabilities (Maher & Haegele, 2022). For example, findings from the 2016 School Health Policies and Practices Study revealed that, 97% of US public school districts mandate schools to "meet the physical education needs of students with disabilities" by "mainstreaming into regular physical education as appropriate" (CDC, 2016, p. 20). However, researchers contend the narrow focus on the educational setting in which

instruction takes place without consideration of the instructional quality within the setting (Kauffman et al., 2021) which may be an accompanying factor toward unchanged practices and the "dumping" of students with disabilities into integrated PE classes without support (Holland & Haegele, 2021; Wilson et al., 2019).

Of concern are the negative integrated PE experiences expressed by students with disabilities, often linked to the attitudes and values demonstrated by their PE teachers (Tanure Alves et al., 2020), especially considering that 55% of the 68% of US public schools requiring PE for students with disabilities provide only integrated PE classes (CDC, 2015). Additionally, out of the remaining 45% of schools offering APE services, 43% of APE classes are taught by general PE teachers (CDC, 2015). According to the Adapted Physical Education National Standards (APENS, 2008) APE refers to "physical education which has been adapted or modified, so that it is appropriate for the person with a disability as it is for a person without a disability" (para. 1). As PE is required in the least restrictive environment (IDEA, 2004), APE services can be provided in a number of educational settings. To adhere to such mandates, few authors have proposed a continuum of instructional PE placement options for students with disabilities (Columna et al., 2010; Lieberman et al., 2017; Winnick, 2017).

While there is no universally recognized continuum of instructional placements, there are two placement options that have remained relatively common for students with disabilities in PE: (1) integrated PE with support services, and (2) self-contained PE with support services. The first option, integrated PE with support services, refers to integrated classes where students with and without disabilities are educated in integrated PE classes with support services, such as another teacher, works alongside students with disabilities during instruction. The second option, self-contained PE, serves as an alternative PE placement option and is typically offered in a small

group of only students with disabilities whose needs could not be or are not being appropriately met in integrated PE classes (Wilson et al., 2019). Given such findings regarding PE placement options for students with disabilities, a review of literature on the PE experiences of students with disabilities within integrated and non-integrated (i.e., self-contained) classes is provided.

In recent years, research on the PE experiences of students with disabilities has focused considerably on insider accounts, by amplifying the voicing of students with disabilities about their experiences (Haegele et al., 2023; Pellerin et al., 2022; Tanure Alves et al., 2020; Yessick et al., 2020). In an updated qualitative literature review, Holland and Haegele (2021) selected and analyzed seven studies published between 2014 and 2019 focused in this area. Through the use of a narrative analysis, three thematic clusters emerged: (a) an "inconvenience": the PE teachers' influence on quality of experience, (b) "we play together, and I like it": friendships central to the quality of PE experience, and (c) "no lift access to the gym": barriers to successful participation. While some positive experiences have been expressed by students who felt their PE teacher was supportive and accommodating (Haegele & Buckley, 2019; Shields & Synnot, 2016), generally, students with disabilities described more negative experiences in integrated PE placements, often associated with the attitudes and values of their PE teacher (Tanure Alves et al., 2020) and limited participation in activities (Tanure Alves et al., 2018; Wang, 2019).

Conversely, studies exploring the PE experiences of students with disabilities in self-contained classes have described more favorable perceptions from such students, detailing more activity engagement and overall enjoyment during PE (Blagrave, 2017; Pellerin et al., 2022; Yessick et al., 2020). One central feature to participants positive experiences in these self-contained studies was the availability of accommodative activities that supported students' participation. While exclusion from activities has been commonly reported among studies on

students with disabilities experiences in integrated PE placements, Pellerin and colleagues (2022) reported the opposite within self-contained settings, stating that participants expressed engaging in nearly all activities during PE. Similar findings were described in Blagraves' (2017) study, where students with autism expressed enjoying the activities and interactions with their teacher during PE in a self-contained setting. The role of the PE teacher in the PE experiences of students with disabilities has been well documented (Holland & Haegele, 2021). PE teachers with higher self-efficacy are more likely to implement accommodative practices and modifications for students with disabilities to participate in activities (Block et al., 2010). While much research has been conducted on PE teachers' self-efficacy to teach students with disabilities in integrated PE placements, little is known about their self-efficacy to teach in other common settings, such as a self-contained setting.

CHAPTER III: RESEARCH METHODS

The purpose of this chapter is to provide a discussion of the methods that were used in each included study. Prior to explaining methods in this dissertation, the findings from a recent pilot study exploring physical educators' self-efficacy to teach students with disabilities in integrated physical education (PE) classes is presented, given that the findings strongly inform the current studies. The structure of this dissertation was a two-manuscript approach. Study one consisted of the development and factor analysis of an instrument designed to measure PE teachers' self-efficacy and sources of information (i.e., mastery experience, vicarious experience, social persuasion, and physiological response) to teach students with disabilities across instructional PE placements. The second study used the validated scale to examine the differential relationships between PE teachers' sources of information and their self-efficacy across instructional PE placements for teaching students with disabilities. Both studies utilized the same participant sampling and data collection procedures and thus, are presented together below. After which, the measures and data analyses are presented separately for each study.

Pilot study

In order to gain a deeper understanding of information related to PE teachers' self-efficacy that has not been captured within current quantitative survey research, I conducted a pilot study exploring the ways in which in-service PE teachers construct their self-efficacy beliefs toward teaching students with disabilities in integrated PE classes (Nowland, 2023). This pilot study was situated within Banduras' (1977; 1997) self-efficacy theory and utilized a qualitative descriptive approach, making it the first theoretically grounded qualitative study, to my knowledge, in this line of inquiry. Semi-structured audio-recorded interviews were conducted with 16 in-service PE teachers currently employed in a K-12 school setting in the US.

All interviews followed a protocol developed based on the constructs of self-efficacy theory (Bandura, 1997) and further informed by previous qualitative teacher self-efficacy research (Morris & Usher, 2011).

Based on the data, three interrelated themes centering on participants' experiences and perspectives regarding their capabilities to teach students with disabilities in integrated PE classes were constructed: (a) the more I do it, the better I feel: the importance of professional experiences, (b) I've learned from others: the influence of colleagues, and (c) being in the general educational setting is a challenge: the impact of contextual factors. Support for a compounding influence of the four sources of self-efficacy information (i.e., mastery experience, vicarious experience, social persuasion, and physiological response) on PE teachers' beliefs in their capabilities to teach students with disabilities in integrated PE was illustrated by the participants. However, participants also suggested that their self-efficacy may also be contingent on potential contextual factors specific to integrated PE classes. That is, participants in this pilot study expressed challenges with large class sizes resulting in the need for hands-on support personnel to work alongside students with disabilities during class time. The findings presented in this pilot study suggest a need for research into the degree of influence that the instructional setting of students with disabilities has on PE teachers' self-efficacy to teach such students. These findings helped both to inspire the need and focus of this dissertation to develop a new survey, as well as to help construct the initial items within the survey.

Purpose and Research Questions

The purpose of the first study was to develop and validate a scale designed to measure PE teachers' self-efficacy to teach students with disabilities across different types of instructional placements for PE. The primary research question for Study 1 is:

1. Is the newly developed Self-Efficacy to Teach Students with Disabilities Across Instructional Placements for Physical Education Scale (SETSD-IPPES) a valid and reliable measure of PE teachers' self-efficacy to teach students with disabilities across different levels of instructional placements for PE?

The purpose of the second study was to examine the differences in PE teachers' self-efficacy to teach students with disabilities across integrated and self-contained classes as well as the association between efficacy-relevant information and PE teachers' beliefs in their capabilities to teach across each placement. The research questions guiding this study were:

1. Is there any significant difference in PE teachers' self-efficacy to teach students with disabilities between the instructional PE placements?
2. To what degree does the sources of self-efficacy information (i.e., mastery experience, vicarious experience, social persuasion, and physiological response) predict PE teachers' self-efficacy to teach students with disabilities across instructional PE placements for students with disabilities?

Data Collection

The following cross-sectional studies consisted of two datasets collected in two separate phases. Each phase followed the same data collection procedures. Participants for each phase were recruited from a generated listserv of PE teachers currently working in a K-12 school in the US. Individuals included on the list have expressed prior interest in participating in research on PE teachers. Criteria for inclusion in this study were (a) being 18 years of age or older, (b) currently working as a PE teacher in a school setting, (c) having experience teaching students with disabilities in PE, and (e) have access and ability to complete an online questionnaire. A description of the research purpose and protocol, as well as a link to the online questionnaire,

was sent out via email, following approval by the Institutional Review Board. The call for participants included a brief statement of the study's purpose, an estimated time required to complete the questionnaire items, criteria for eligibility, and a google form for consent. Those interested in participating were instructed to click an electronic link embedded within the recruitment email to read and agree to the terms presented in the consent form. Once participants provided consent, they advanced to the online survey items. Participants were able to discontinue participation by exiting the online survey platform at any time, erasing any data information.

Study I

Participants

The first phase of data collection included a total of 268 participants (172 males; 86 females; five others; five prefer not to say). Participants' mean age at the time of data collection was 30.92 years (*SD* = 9.95). The majority of participants (*n* = 230, 85.8%) identified as White, while others identified as African American/Black (*n* = 11, 4.1%), Hispanic/Latinx (*n* = 9, 3.4%), American Indian or Alaskan Native (*n* = 5, 1.9%), Native Hawaiian or Other Pacific Islander (*n* = 4, 1.5%), Multiracial (*n* = 4, 1.5%), Asian or Asian-American (*n* = 3, 1.1%), and two identified as two or more races (.7%).

Instrument Development

The *Self-Efficacy to Teach Students with Disabilities Across Instruction Placements for Physical Education* (SETSD-IPPE) scale was constructed in four phases: (a) item development, (b) content validity, (c) exploratory factor analysis, and (d) confirmatory factor analysis. In the item development phase, a list of potential instructional placement options for PE was generated by the research team in consultation with literature on placement options for students with disabilities (Lieberman et al., 2017; Winnick & Porretta, 2021). While there is no universally

recognized continuum of instructional placement options for students with disabilities, two settings that are relatively common options for students with disabilities in PE include: (1) integrated PE with support services, and (2) self-contained PE with support services. The first level, integrated PE with support services, refers to integrated classes where students with and without disabilities are educated in the same physical space with support services, such as another teacher or teacher aide, working alongside students with disabilities during instruction. The next option, self-contained PE, serves as an alternative PE placement option and is typically offered in a small group of only students with disabilities whose needs could not be, or are not being, appropriately met in integrated PE classes (Wilson et al., 2019).

Initial self-efficacy and sources of information items for each placement option were then drawn from previous empirical studies, including items from earlier scales on teaching students with disabilities (Dawson & Scott, 2013), as well as those specific to PE teachers (Block et al., 2013; Taliaferro et al., 2010). The findings from Nowland's (2023) exploration of PE teachers' self-efficacy were also utilized during the initial item development. Descriptions of potential instructional placements and items in the initial pool were discussed, edited, and reviewed by the research team until an agreement on included items was formed.

Next, to support content validity, an expert panel, which included a group of eight in-service PE teachers and researchers in the fields of adapted physical education (APE), PE, and motivational research, reviewed the items. The items were sent to the expert panel, and they were requested to grade each item on the SETSD-IPPE on their relevance and clarity. Each item on the scale as well as the descriptions of the instructional placements were given a score by panel members from zero (i.e., not useful) to four (i.e., highly useful), with the option to provide additional feedback under the description and/or item. The research team then reviewed ratings

and feedback from the expert panel. During this time, no items were removed, rather edits to the instructional placement descriptions and item structure were made until a consensus on scale structure was formed. For the third and fourth phase of scale development, exploratory and confirmatory factor analyses, samples were drawn from two separate datasets. The first iteration of the SETSD-IPPE included a measure of self-efficacy (7-items), mastery experience (5-items), vicarious experience (6-items), social persuasion (5-items), and physiological responses (5-items), across two instructional placements for PE. The same items were used initially across both placement options (i.e., integrated, and self-contained) for a total of 56 items. Participants were asked to rate self-efficacy items from 1 (“not at all confident”) to 5 (“completely confident”) and sources of information from 1 (“strongly disagree”) to 5 (“strongly agree”).

Data Analysis

Exploratory factory analysis. An EFA was conducted on the 56-item SETSD-IPPE to identify factor structure utilizing the maximum likelihood estimation method. Prior to conducting maximum likelihood estimations, the Kaiser Meyer Olkin (KMO) index of sampling adequacy and Bartlett’s Test of Sphericity for suitability of factor analysis were conducted (Tabachnick & Fidell, 2019). Next for item reduction, maximum likelihood estimations with two types of rotations were undertaken. Varimax rotation was used for self-efficacy items and promax rotation was used for the sources of information to test potential correlations between factors. Factor loadings, commonalities, and eigenvalues were examined to identify poor and/or cross-loaded items. Poorly loaded items and those with cross-loadings across multiple factors were removed until all items met the minimum criteria of having a primary factor loading (λ) of 0.40 or above on a single factor.

Confirmatory factor analysis. Based on EFA results, the retained items constituting the SETSD-IPPE were used for phase two of the data collection and further analyzed using confirmatory factor analysis (CFA). The following indices of model fit have been recognized as acceptable standards for CFA's and as such, were utilized to assess model fit: the χ^2 model test; Bentler's (1990) revised normed comparative-fit index (CFI > .95 excellent); the root mean squared error of approximation (RMSEA; .05 to .10 acceptable, > .10 poor); and standardized root mean square residual (SRMR; < .09 acceptable; Hair et al., 2010). Comparisons of model fit were made using $|\Delta CFI|$ and $\Delta \chi^2$ with a robust estimation approach (Cheung & Rensvold, 2002). The CFA was conducted using EQS 6.3 (Bentler, 2005).

Study II

Participants

In total, 169 (105 females; 64 males; one undisclosed) in-service PE teachers in the US completed the survey and were included in data analysis (see Table 1). The mean age of participants was 29.56 (*SD* = 13.76) at the time of data collection. Most participants reported identifying as White (*n* = 132, 77.6%), while others identified as African American/Black (*n* = 20, 11.8%), Hispanic/Latinx (*n* = 8, 4.7%), Multiracial (*n* = 5, 3%), Asian or Asian-American (*n* = 3, 1.8%), and one undisclosed (.6%). On average, participants total self-efficacy to teach students with disabilities in an integrated instructional placement was 27.39 (*SD* = 6.51) and 26.96 (*SD* = 5.36) to teach in a self-contained placement.

Instrument

A scale for measuring self-efficacy and sources of information were used in this study. Additionally, eight demographic items were used, including age, gender, race, years of teaching experience, current grade levels teaching, education level, approximate number of students with

disabilities they've taught in PE, and the instructional placement they typically teach students with disabilities in PE.

Self-Efficacy to Teach Students with Disabilities Across Instruction Placements for Physical Education (SETSD-IPPE). PE teachers' self-efficacy to teach students with disabilities across instructional placements was measured using a newly developed instrument, the SETSD-IPPE. This instrument contains 29-items designed to measure PE teachers' self-efficacy and efficacy-relevant information towards teaching students with disabilities across two instructional placement options. Participants were asked to rate their self-efficacy ranging from one (i.e., "not at all confident") to five (i.e., "completely confident") on seven items related to teaching students with disabilities (e.g., "I can adapt the curriculum to help meet the needs of students with disabilities in this instructional placement"). Previous analysis of the SETSD-IPPE showed adequate internal consistency with a Cronbach's alpha of .93 for teaching in an integrated placement, and .97 for a self-contained placement.

The SETSD-IPPE also contains two subscales, one for each instructional placement, based on theoretically relevant sources of self-efficacy information (Bandura, 1997). Participants were asked to rate their types of experiences related to teaching students with disabilities in an integrated placement and a self-contained placement ranging from one (i.e., "strongly disagree) to five (i.e., "strongly agree). While a relatively similar two-factor solution of the sources of self-efficacy information were found for both an integrated placement and a self-contained placement, prior analysis displayed differences in the items retained. Factors included on the integrated efficacy-relevant information subscale include three unfavorable efficacy-relevant information items (e.g., "I feel anxious when preparing to teach students with disabilities in this instructional placement"), and five favorable efficacy-relevant information items (e.g., "I have

experienced success in teaching students with disabilities in this instructional placement"). Cronbach's alpha for the retained 8-item integrated efficacy-relevant information subscale was .84. For the self-contained efficacy-relevant information subscale, factors include four unfavorable efficacy-relevant information items (e.g., In the past, the adaptations I've made for students with disabilities have not been successful in this instructional placement") and three favorable efficacy-relevant information items (e.g., "My colleagues have told me that I'm good at teaching students with disabilities in this instructional placement"). Cronbach's alpha for the retained 7-item self-contained efficacy-relevant information subscale was .81.

Data Analysis

SPSS- 28.0 software was used to compute descriptive statistics for participants demographic information via frequencies and measures of central tendency and dispersion. Mean scores for self-efficacy and sources of information across each instructional placement (i.e., integrated PE with support services and self-contained PE with support services) on the SETSD-IPPES were then calculated. To examine the differences between PE teachers' self-efficacy across integrated and self-contained instructional placements, a paired samples t-test was conducted. Finally, using EQS 6.3 software, structural equation modeling (SEM) was conducted to investigate the amount of predicted utility that the sources of information (i.e., efficacy-relevant information subscales) have on PE teachers' self-efficacy to teach students with disabilities within each instructional placement. Considered to be a useful extension of CFA, SEM allows for the use of a previously established measurement model (e.g., CFA results) as well as a structural model that considers potential predictive relationships between the models' latent constructs (Schreiber et al., 2006). Cohen's (1988) guidelines for effect sizes (≥ .10 small;

≥ .30 medium; ≥ .50 large) is used to interpret the magnitude of the completely standardized regression coefficients (β).

CHAPTER IV: STUDY MANUSCRIPTS

The purpose of this chapter is to present the manuscripts for each study included in this dissertation. The manuscript for the first study, Self-Efficacy to Teach Students with Disabilities Across Instructional Placements for Physical Education Scale: Development and Validation, is presented beginning on page 44. The manuscript for the second study, Physical Educators' Self-Efficacy to Teach Students with Disabilities Across Instructional Placements, follows the first manuscript, starting on page 77. Both manuscript one and two were composed in keeping with the formatting guidelines of *Adapted Physical Activity Quarterly.* Citations for each manuscript retain the style of the American Psychological Association.

Manuscript I

Self-Efficacy to Teach Students with Disabilities Across Instructional Placements for Physical Education Scale: Development and Validation

Abstract

The purpose of this study was to develop and validate a scale designed to measure physical educators' self-efficacy and sources of information to teach students with disabilities across different types of instructional placements for physical education. The scale was constructed in four phases: (a) item development, (b) content validity, (c) exploratory factor analysis, and (d) confirmatory factor analysis. Data from 268 (172 males; 86 females; five others; five undisclosed) and 169 (105 females; 64 males; one undisclosed) participants was used for exploratory factor analyses and confirmatory factor analyses, respectively. The final instrument is comprised of 29-items including a 7-item (one factor) self-efficacy scale and an 8-item (two factor) efficacy-relevant information subscale for teaching students with disabilities in an integrated PE placement, as well as a 7-item (one factor) self-efficacy scale and 7-item (two factor) efficacy-relevant information subscale for teaching students with disabilities in a self-contained PE placement. Validity and reliability results support the use of the *Self-Efficacy to Teach Students with Disabilities Across Instruction Placements for Physical Education*.

Keywords: teaching self-efficacy scale; physical educators; disability

Introduction

A rich body of literature exists that has explored physical educators' self-efficacy to teach students with disabilities through the application of Bandura's (1977; 1997) social cognitive theory. According to social cognitive theory, self-efficacy beliefs play an influential role in how one behaves within an environment. Defined as "beliefs in one's capabilities to organize and execute the course of action required to produce given attainments" (p. 3), an individual's self-efficacy beliefs influence the way they approach a task, thus predicting their exerted effort and perseverance during challenging situations (Bandura, 1997). In other words, individuals are more likely to engage in activities confidently when they believe they possess the capabilities to execute the appropriate behavior to produce the desired outcome. On the other hand, when individuals do not feel competent in their capabilities, they are less likely to strive in the face of perceived difficulty. Subsequently, self-efficacy beliefs influence an individual's choice of behaviors during performance within the given environment (Schunk & Pajares, 2010). Bandura (1977, 1997) proposed four informational sources that, together, interact to shape an individuals' self-efficacy beliefs: mastery experience (i.e., interpreted results of ones' previous experiences), vicarious experience (i.e., information gained from observations), social persuasion (i.e., feedback/reinforcement from others), and physiological response (i.e., affective state during performance). According to Bandura (1997), individuals must cognitively process information gathered from these sources by selecting, weighting, and interpreting information to construct self-efficacy beliefs.

Known as a context-specific construct, self-efficacy beliefs concern individuals' perceived capabilities for future-oriented performances within specific domains of functioning (Bandura, 1977). Applied to the physical education (PE) context, while a PE teacher may have a

high self-efficacy for teaching students with disabilities in one instructional placement, their beliefs in their capabilities may differ when teaching the same students in a different instructional placement option (Tschannen-Moran et al., 1998). However, although the study of PE teacher self-efficacy has been the topic of a considerable amount of research, most of this literature base, to date, concerns integrated PE placements, with little known about PE teachers' beliefs towards teaching students with disabilities in other contexts, such as self-contained classes (Nowland & Haegele, 2023). Importantly, the term "integrated" used herein refers to an educational setting in which students with and without disabilities are educated in the same physical space (Haegele, 2019), while self-contained classes serve as an alternative placement option for students with disabilities whose needs could not be or are not being appropriately met in integrated classes (Wilson et al., 2019).

Overtime, researchers examining PE teachers' self-efficacy have also examined additional correlates, such as PE teachers' attitudes and intentions toward teaching students with disabilities in integrated PE classes (Hutzler et al., 2019; Nowland & Haegele, 2023). We know that PE teachers with higher self-efficacy are more likely to implement accommodative practices and modifications for students with disabilities to participate in activities than those with a low self-efficacy (Bandura, 1997; Block et al., 2010). For example, in a study exploring in-service PE teachers' self-efficacy to teach students with autism, Beamer and Yun (2014) reported significant relationships between PE teachers' self-efficacy and their attitudes, intentions and self-reported teaching behaviors towards teaching students with autism in integrated PE classes. Most researchers attempting to understand PE teachers' self-efficacy toward teaching students with disabilities have done so by employing one of two commonly used situation- and disability-specific instruments that have been validated and shown reliability for measuring PE teachers

perceived self-efficacy, the Physical Educators' Self-Efficacy Toward Including Students with Disabilities-Autism (PESEISD-A; Taliaferro et al., 2010) and the Self-Efficacy Scale for Physical Education Teacher Education Majors toward Children with Disabilities (SE-PETE-D; Block et al., 2013). Created and validated by Block and colleagues (2013) among a pre-service PE teacher sample in the US, the SE-PETE-D is a 25-item measure utilizing a 5-point Likert-type scale assessing physical educators' self-efficacy toward teaching students with intellectual disabilities, physical disabilities, and visual impairments in integrated PE. The PESEISD-A, developed and validated by Taliaferro and colleagues (2010) among an in-service PE teacher sample in the US, is a 10-item measure utilizing a 10-point Likert-type scale to assess PE teachers' self-efficacy toward teaching students with autism in integrated PE.

While each of these scales are well-used in the physical education literature (Nowland & Haegele, 2022), limitations exist, such as an absence of self-efficacy-relevant information built within the scales. For example, the original PESEISD-A contained six subscales (i.e., mastery experiences, vicarious experiences, social persuasions, behavior, physiological state, and challenges), including the four sources of self-efficacy information posited by Bandura (1997). However, the six subscales were not subjected to exploratory and confirmatory factor analyses (Taliaferro et al., 2010) and therefore, the measurement of the four sources of self-efficacy information within PE teacher research is scarce. These limitations translate to a significant gap in the literature between measuring PE teachers' self-efficacy and understanding how the four sources of self-efficacy information posited by Bandura (1977; 1997) interact to shape PE teachers' self-efficacy beliefs. To gain a deeper understanding of information related to PE teachers' self-efficacy that had not been previously captured within current quantitative survey research, Nowland (2023) conducted a qualitative study exploring the ways in which in-service

PE teachers construct their self-efficacy beliefs toward teaching students with disabilities in integrated PE classes. Findings from this study demonstrated support for a compounding influence of the four sources of self-efficacy information (i.e., mastery experience, vicarious experience, social persuasion, and physiological response) on PE teachers' beliefs in their capabilities to teach students with disabilities in integrated PE. However, participants suggested that their self-efficacy may also be contingent on potential contextual factors, perhaps specific to integrated PE classes. That is, participants in Nowland's (2023) study expressed challenges with large class sizes resulting in the need for additional hands-on support personnel working alongside students with disabilities during classes time.

The findings presented in Nowland's (2023) study have been similarly expressed by PE teachers in other studies exploring their experiences teaching students with disabilities in integrated PE classes (Overton et al., 2017; Wilson et al., 2019), noting difficulties with large class sizes typically seen in this setting (Rekaa et al., 2019). Such findings suggest the need for research into the impact that the instructional setting of students with disabilities has on PE teachers' self-efficacy to teach such students. While existing scales have advanced scholarly knowledge related to PE teachers' self-efficacy to teach students with disabilities in integrated instructional placements, there is a lack of instrumentation designed to measure PE teachers' self-efficacy across different instructional placements, including self-contained PE. The existence of such scales would permit independent evaluations of self-efficacy in multiple contexts, as well as a comparison of self-efficacy beliefs across settings. As such, to help move this line of inquiry forward; the purpose of this study is to develop and validate a scale designed to measure PE teachers' self-efficacy and sources of information to teach students with disabilities across different types of instructional placements for PE.

Methods

Instrument Development

The *Self-Efficacy to Teach Students with Disabilities Across Instruction Placements for Physical Education* (SETSD-IPPE) scale was constructed in four phases: (a) item development, (b) content validity, (c) exploratory factor analysis, and (d) confirmatory factor analysis. In the item development phase, a list of potential instructional placement options for PE was generated by the research team in consultation with literature on placement options for students with disabilities (Lieberman et al., 2017; Winnick & Porretta, 2021). While there is no universally recognized continuum of instructional placement options for students with disabilities, two settings that are relatively common options for students with disabilities in PE include: (1) integrated PE with support services, and (2) self-contained PE with support services. The first level, integrated PE with support services, refers to integrated classes where students with and without disabilities are educated in the same physical space with support services, such as another teacher or teacher aide, working alongside students with disabilities during instruction. The next option, self-contained PE, serves as an alternative PE placement option and is typically offered in a small group of only students with disabilities whose needs could not be, or are not being, appropriately met in integrated PE classes (Wilson et al., 2019).

Initial self-efficacy and sources of information items for each placement option were then drawn from previous empirical studies, including items from earlier scales on teaching students with disabilities (Dawson & Scott, 2013), as well as those specific to PE teachers (Block et al., 2013; Taliaferro et al., 2010). The findings from Nowland's (2023) exploration of PE teachers' self-efficacy were also utilized during the initial item development. Descriptions of potential

instructional placements and items in the initial pool were discussed, edited, and reviewed by the research team until an agreement on included items was formed.

Next, to support content validity, an expert panel, which included a group of eight in-service PE teachers and researchers in the fields of adapted physical education (APE), PE, and motivational research, reviewed the items. The items were sent to the expert panel, and they were requested to grade each item on the SETSD-IPPE on their relevance and clarity. Each item on the scale as well as the descriptions of the instructional placements were given a score by panel members from zero (i.e., not useful) to four (i.e., highly useful), with the option to provide additional feedback under the description and/or item. The research team then reviewed ratings and feedback from the expert panel. During this time, no items were removed, rather edits to the instructional placement descriptions and item structure were made until a consensus on scale structure was formed. For the third and fourth phase of scale development, exploratory and confirmatory factor analyses, samples were drawn from two separate datasets. The first iteration of the SETSD-IPPE included a measure of self-efficacy (7-items), mastery experience (5-items), vicarious experience (6-items), social persuasion (5-items), and physiological responses (5-items), across two instructional placements for PE. The same items were used initially across both placement options (i.e., integrated, and self-contained) for a total of 56 items. Participants were asked to rate self-efficacy items from 1 (“not at all confident”) to 5 (“completely confident”) and sources of information from 1 (“strongly disagree”) to 5 (“strongly agree”).

Data Collection

Data collection procedures for the exploratory and confirmatory factor analyses consisted of two separate collection periods, providing separate datasets for each factor analysis. The first iteration of the 56-item SETSD-IPPE scale was used to collect the first dataset and was used to

run exploratory factor analysis (EFA). Based on EFA results, a reduction of items was completed, resulting in a 31-item instrument that was used to collect the second dataset for the confirmatory factor analysis. In addition to the SETSD-IPPE, the same 8-item demographic questionnaire was included in both data collection periods. Items included in the demographic questionnaire were age, gender, race, years of teaching experience, current grade levels teaching (i.e., elementary, middle, or high school), and education level. Participants were also asked to indicate the approximate number of students with disabilities they've taught in PE, as well as the instructional placement in which they typically teach students with disabilities in PE.

Both the first and second data collections followed the same procedures in this study. Participants for each phase were recruited from a generated listserv of PE teachers currently working in a K-12 school in the US. Individuals included on the list have expressed prior interest in participating in research on PE teachers. Additionally, social media groups for PE teachers were utilized during the recruitment process. A description of the research purpose and protocol, as well as a link to the online questionnaire, was sent out via email and social media platforms, following approval by the College Human Subjects Committee. The call for participants included a brief statement of the study's purpose, an estimated time required to complete the questionnaire items, criteria for eligibility, and a consent form. Criteria for inclusion in this study included (a) being 18 years of age or older, (b) currently working as a PE teacher in a school setting, (c) having experience teaching students with disabilities in PE, and (d) having access and ability to complete an online questionnaire. Those interested in participating were instructed to click an electronic link embedded within the recruitment call, which first led to a welcome statement that asked participants to read and agree to the terms presented in the consent form. Once participants provided consent, they were advanced to the online survey items. Participants

were able to discontinue participation by exiting the online survey platform at any time, erasing any data information.

Data Analysis

Exploratory factory analysis. An EFA was conducted on the 56-item SETSD-IPPE to identify factor structure utilizing the maximum likelihood estimation method. Prior to conducting maximum likelihood estimations, the Kaiser Meyer Olkin (KMO) index of sampling adequacy and Bartlett's Test of Sphericity for suitability of factor analysis were conducted (Tabachnick & Fidell, 2019). Next for item reduction, maximum likelihood estimations with two types of rotations were undertaken. Varimax rotation was used for self-efficacy items and promax rotation was used for the sources of information to test potential correlations between factors. Factor loadings, commonalities, and eigenvalues were examined to identify poor and/or cross-loaded items. Poorly loaded items and those with cross-loadings across multiple factors were removed until all items met the minimum criteria of having a primary factor loading (λ) of 0.40 or above on a single factor.

Confirmatory factor analysis. Based on EFA results, the retained items constituting the SETSD-IPPE were used for phase two of the data collection and further analyzed using confirmatory factor analysis (CFA). The following indices of model fit have been recognized as acceptable standards for CFA's and as such, were utilized to assess model fit: the χ^2 model test; Bentler's (1990) revised normed comparative-fit index (CFI > .95 excellent); the root mean squared error of approximation (RMSEA; .05 to .10 acceptable, > .10 poor); and standardized root mean square residual (SRMR; < .09 acceptable; Hair et al., 2010). Comparisons of model fit were made using $|\Delta CFI|$ and $\Delta \chi^2$ with a robust estimation approach (Cheung & Rensvold, 2002). The CFA was conducted using EQS 6.3 (Bentler, 2005).

Results

Participant Demographics

Dataset one. The first dataset included a total of 268 participants (172 males; 86 females; five others; five undisclosed). Participants' mean age at the time of data collection was 30.92 years (*SD* = 9.95). The majority of participants (*n* = 230, 85.8%) identified as White, while others identified as African American/Black (*n* = 11, 4.1%), Hispanic/Latinx (*n* = 9, 3.4%), American Indian or Alaskan Native (*n* = 5, 1.9%), Native Hawaiian or Other Pacific Islander (*n* = 4, 1.5%), Multiracial (*n* = 4, 1.5%), Asian or Asian-American (*n* = 3, 1.1%), and two identified as two or more races (.7%). See table 2 for full description of participants characteristics.

Dataset two. The second dataset included a total of 170 participants (105 females; 64 males; one undisclosed). The mean age of participants was 29.56 (*SD* = 13.76) at the time of data collection. Most participants reported identifying as White (*n* = 132, 77.6%), while others identified as African American/Black (*n* = 20, 11.8%), Hispanic/Latinx (*n* = 8, 4.7%), Multiracial (*n* = 5, 3%), Asian or Asian-American (*n* = 3, 1.8%), and one undisclosed (.6%). See table 2 for a full description of participants characteristics.

Exploratory Factor Analyses

The factorability of the SETSD-IPPE was examined using the first dataset for item reduction and model fit. Several statistical assumptions were first tested, such as the KMO index (SE integrated placement = 0.841, SE self-contained placement = 0.856, sources integrated placement = 0.792, and sources self-contained placement = 0.816) and Barlett's Tests of Sphericity ($p < .001$), which indicated suitable underlying factors and correlations between instrument items for EFA (Guadagnoli & Velicer, 1988; Tabachnick & Fidell, 2019).

Self-efficacy scale. EFA showed one clear factor for self-efficacy with all seven items loading onto the factor for both instructional placements (i.e., integrated, and self-contained). Factor loadings ranged between .57 to .63 for the integrated instructional placement and .50 to .64 for the self-contained instructional placement, indicating adequate factor loadings (Tavakol & Wetzel, 2020). The one-factor solution explained a total of 44.14% and 43.57% of the variance for the integrated and self-contained instructional placements, respectively. Table 3 has factor loadings for the 7-item self-efficacy scale across integrated and self-contained placements.

Sources of self-efficacy scale. Conceptually, the SETSD-IPPE contained four separate subscales, one for each of the four sources of self-efficacy information posited by Bandura (1997). An initial examination of the items revealed several cross-loaded items on more than one factor for both the integrated and self-contained placements. As such, 25 items were dropped from the analyses (i.e., 13 dropped from self-contained placement and 12 dropped from integrated placement) resulting in the retention of nine and eight items for the integrated and self-contained instructional placement, respectively. Additionally, cross-loaded items resulted in the reconstruction of factors into a two-factor subscale, one for each placement. Subsequent analysis for each instructional placement using promax rotation with Kaiser normalization revealed a two-factor solution, showing improved overall fit with factor loadings meeting the minimum criteria of (λ) .40 or above for each placement. The two-factor solution for the 9-item integrated efficacy-relevant information subscale explained 41.73% of the variance. As seen in Table 4, he first factor, unfavorable efficacy-relevant information, included items addressing negative sources of self-efficacy (PR5, VE3, ME4, and PR1) while the second factor, favorable efficacy-relevant information, included items addressing positive sources of self-efficacy (ME1, ME2, ME2, SP3, and PR4). Similarly, the two-factor solution for the 8-item self-contained

efficacy-relevant information subscale explained 49.08% of the variance. As seen in Table 4, although the same two factor labels as those used in the integrated placement were utilized for self-contained, the first factor (unfavorable efficacy-relevant information) included items addressing three sources of self-efficacy information (ME4, ME5, VE3, PR1, and PR3), while the second factor, favorable efficacy-relevant information, consists only of items related to social persuasions (SP1, SP3, SP4). As such, as a result of the EFA, the SETSD-IPPE sources of self-efficacy subscales were revised into a two factor efficacy-relevant information subscale for each instructional placement.

Confirmatory Factor Analysis

Following factor reduction and item removal from EFA results, we conducted CFA with dataset two using the retained models. Specifically, four separate CFAs were conducted (i.e., self-efficacy for integrated and self-contained placement; and efficacy-relevant information for integrated and self-contained). As seen in Table 5, the 7-item self-efficacy scale yielded adequate goodness-of-fit indices for an integrated placement (CFI = .952; RMSEA = .137) as well as for a self-contained placement (CFI = .972; RMSEA = .142). Cronbach's alpha for the 7-item self-efficacy to teach in an integrated placement and .93, and .97 for teaching in self-contained placement. One item (ME4; "in the past, the adaptations I've made for students with disabilities have not been successful in this instructional placement.") was discarded due to cross-loading between the two factors. Model B under integrated efficacy-relevant information represents the final iteration of this subscale (CFI = .965; RMSEA = .078) with the remaining two factor solution consisting of 8 items total (see Figure 1). Cronbach's alpha for the 8-item integrated placement efficacy-relevant information subscale was .84. Similarly, one item (PR3; "I worry about meeting the needs of students with disabilities in this instructional placement.") was

discarded due to poor loadings. Model B under the self-contained efficacy-relevant information subscale represents the final iteration of this subscale (CFI = 1.00; RMSEA = .010) with the remaining two factor solution consisting of 7 items total (see Figure 2). Cronbach's alpha for the 7-item self-contained efficacy-relevant information subscale was .81. The standardized solutions for the self-efficacy scale for teaching in an integrated placement can be seen in Figure 1 and teaching in a self-contained placement can be found in Figure 2.

Discussion

The purpose of this study was to develop and validate a scale designed to measure PE teachers' self-efficacy and sources of information to teach students with disabilities across integrated and self-contained classes. Instrument development consisted of four phases: (a) item development, (b) content validity, (c) exploratory factor analysis, and (d) confirmatory factor analysis. The initial SETSD-IPPE contained a total of 56-items, comprised of a self-efficacy measure and four distinct subscales each corresponding to the four sources of self-efficacy information identified by Bandura (1997; mastery experience, vicarious experience, social persuasion, and physiological responses) for both integrated and self-contained placements. EFA resulted in factor and item reduction that aided in the reorganization of sources of self-efficacy into two efficacy-relevant information subscales, one for each instructional placement. A total of 31-items were retained after the EFA; however, two additional items were removed, one from each of the instructional placement efficacy-relevant information subscales, following CFA procedures due to poor factor loadings. The final SETSD-IPPE contains 29-items including a 7-item (one factor) self-efficacy scale and an 8-item (two factor) efficacy-relevant information subscale for teaching students with disabilities in an integrated PE placement, as well as a 7-item

(one factor) self-efficacy scale and 7-item (two factor) efficacy-relevant information subscale for teaching students with disabilities in a self-contained PE placement.

Although there are several well used self-efficacy instruments designed to measure PE teachers' self-efficacy to teach students with disabilities in integrated instructional placements (Block et al., 2013; Taliaferro et al., 2010), the SETSD-IPPE helps extend potential future research in our field by allowing for comparisons in self-efficacy beliefs across teaching contexts. For example, some similarities can be made between the item makeup of the 7-item self-efficacy scale and those presented by Block and colleagues (2013), such as items focused on "modify instructions" and "adapt the curriculum" used herein. However, in the previously constructed scales, the premise was to generate items related for teaching students with disabilities in integrated classes, and thus, the overall structure of items limits its application across other teaching contexts. The addition of items related to self-contained settings has some important research implications. For example, a large selection of current intervention-based research within this line of inquiry has employed the SE-PETE-D to explore self-efficacy to teach students with disabilities in integrated classes after participating in structured professional training practicum or workshops involving only students with disabilities (Foley et al., 2020; Koh, 2021; Taliaferro et al., 2015; Tindall et al., 2016). It may be logical to suggest that professional training practicum or workshops involving only those with disabilities may be best suited to enhance self-efficacy in contexts more similar to the training arena, such as self-contained classes. The development and validation of the SETSD-IPPE may provide the opportunity to gain insight into the differential effectiveness of such commonly used interventions (e.g., practicum, service learning, professional development) on PE teachers self-efficacy to teach students with disabilities across placement options. Additionally, research on

student experiences in self-contained settings have reported increased engaged, enjoyment, and more positive interactions with their PE teachers (Blagrave, 2017; Pellerin et al., 2022) compared to those expressed in studies on student experiences in integrated classes (Tanure Alves et al., 2020). A further understanding of the self-efficacy of PE teachers to teach in self-contained classes and the efficacy-relevant information that influence it may be a helpful next step toward understanding the factors that can lead to positive PE experiences expressed by students with disabilities.

Despite our intention to construct a survey to measure the sources of PE teachers' self-efficacy based on Bandura's (1997) four posited theoretical constructs, our analyses resulted in the reconstruction of sources into two factor efficacy-relevant information subscales. Some researchers have cautioned scholars about the combination of sources due to the inability to understand how each source is independently interpreted (Usher & Pajares, 2008). That is, the information one interprets from one source can influence the way they interpret information from other sources (Bandura, 1997). With this view in mind, it may be logical that there is a lack of a prior psychometrically sound and theoretically based measure of the sources of teaching self-efficacy. For instance, in previous attempts at validating a measure of the sources of teachers' self-efficacy based on theoretical constructs (Bandura, 1997), Poulou (2007) designed a 30-item Teacher Efficacy Sources Inventory that included the four sources of information (i.e., mastery experience, vicarious experience, social persuasion, and physiological response), as well as factors not described by Bandura (i.e., personality characteristics, capability skills, motivation, and university training). Poulou administered the 30-item inventory to 198 pre-service elementary teachers in Greece, however, issues emerged during analyses such as the need to combine mastery experiences and social persuasion subscales due to several cross-loaded items

and low reliability scores among all three sources of self-efficacy information subscales (mastery experience with social persuasion [$\alpha = .79$], vicarious experience [$\alpha = .78$], and physiological state [$\alpha = .72$]). Other studies attempting to validate measures of the sources of teaching self-efficacy encountered similar psychometric problems to that of Poulou, in which a clear four-factor solution corresponding with each source of self-efficacy posited by Bandura (1997) was not found (Kieffer & Henson, 2000; Morris & Usher, 2013; Weaver-Shearn, 2008). As such, our findings which demonstrated cross loadings among source items and the need to re-organize our items have some historical precedence. That is, the way in which diverse sources are weighted and integrated by PE teachers as efficacy information may be assumed.

While the factors generated for each of the two instructional placement subscales appeared similar following EFA, there was a distinction in the composition of these factors upon examining CFA results for logical validity. For instance, favorable efficacy-relevant information related to PE teachers' self-efficacy to teach students with disabilities in an integrated placement is comprised of items corresponding with mastery experiences (e.g., "I have experienced success in teaching students with disabilities in this instructional placement"), social persuasions (e.g., "my colleagues have told me that I'm good at teaching students with disabilities in this instructional placement"), and physiological response (e.g., "I feel excited when thinking about teaching a new skill to students with disabilities in this instructional placement"). However, when looking at the favorable efficacy-relevant information factor for a self-contained placement, the item makeup is related only to receiving positive social persuasions from colleagues and students (e.g., "my colleagues have told me that I'm and good at teaching students with disabilities in this instructional placement", or "my students with disabilities express enthusiasm during PE in this instructional placement"). This finding highlights the

degree in which certain types of efficacy-relevant information may hold value towards PE teachers' confidence in their abilities to teach students with disabilities depending on the placement that they are teaching them in. As Bandura (1997) notes, cognitive processing of efficacy-relevant information is complex and may differ from person to person as well as across domains of functioning. As such, when selecting, weighting, and integrating information across the four major modalities of influence (i.e., mastery experience, vicarious experience, social persuasion, and physiological response), PE teachers may assess the relevance of certain experiences differently based on the context in which they are teaching in (Morris et al., 2017). Therefore, we believe that by developing a new measure of PE teachers' self-efficacy to include subscales on their efficacy-relevant information for teaching students with disabilities, the SETSD-IPPE may provide theoretical advancements in scholarly understanding of the sources PE teachers rely on to construct their beliefs in their abilities to teach students with disabilities across integrated and self-contained placements.

This study does not go without limitations. First, the sample size of 169 participants in the second phase of data collection was particularly low for CFA, which resulted in discarding items that may have been retained with a larger sample (Mundfrom et al., 2005). Additionally, the validation samples included only in-service PE teachers, thus it is unclear whether items would function similarly among other samples, such as pre-service PE teachers or adapted PE teachers. The instructional PE placements that make up the SETSD-IPPE were largely derived from three pieces of literature (Columna et al., 2010; Lieberman et al., 2017; Winnick, 2017). It is possible that other instructional PE placements commonly exist for students with disabilities in the United States that warrant further exploration, particularly given mandates to educate students with disabilities in the least restrictive environment. Furthermore, the SETSD-IPPE is a

non-disability specific instrument. Authors note this as a potential limitation due to the relatively context and domain-specific nature of self-efficacy theory (Bandura, 1997), however, items can easily be manipulated in future studies by changing "students with disabilities" broadly defined to be disability specific (e.g., students with autism).

Conclusion

The purpose of this study is to develop and validate a scale designed to measure PE teachers' self-efficacy and sources of information to teach students with disabilities across different types of instructional placements for PE. Results of the present study demonstrate support for the SETSD-IPPE as a valid measure of PE teachers' self-efficacy to teach students with disabilities in integrated and self-contained classes. The psychometric qualities, validity, and reliability of the newly developed instrument were supported among two in-service PE teacher samples. Additionally, the efficacy-relevant information subscales provide valid measures of the types of experiences that PE teachers value based on the teaching context. Further analyses are needed to explore the extent in which efficacy-relevant information predict PE teachers' self-efficacy to teach students with disabilities in integrated and self-contained classes.

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Table 1. Descriptive Statistics of Scale Items for Integrated and Self-contained Placements.

Scale ID	Item	Integrated Placement				Self-Contained Placement			
		Mean	SD	Skewness	Kurtosis	Mean	SD	Skewness	Kurtosis
SE1	I can adapt the curriculum to help meet the needs of students with disabilities in this instructional placement.	3.96	0.88	-.38	-.59	3.89	0.93	-.52	-.05
SE2	I can use a wide variety of instructional strategies to enhance understanding for students with disabilities in this instructional placement.	3.84	0.94	-.43	-.23	3.85	0.91	.15	-.50
SE3	I can break down a complex skill into its parts to facilitate learning for students with disabilities in this instructional placement.	3.94	0.95	-.57	-.27	3.97	0.90	-.47	-.37
SE4	I can plan for adaptations in my lessons, as needed, to meet the needs of students with disabilities in this instructional placement.	3.90	0.92	-.28	-.81	4.03	0.92	-.76	.31
SE5	I can provide support to students with disabilities, including handling disruptive behaviors in this instructional placement.	3.75	0.94	-.25	-.49	3.83	0.95	-.27	-.60
SE6	I can implement individualized learning tasks that meet each students' diverse needs in this instructional placement.	3.78	1.05	-.53	-.36	3.90	0.90	-.32	-.82
SE7	I can facilitate physical activity engagement for all of my students in this instructional placement.	3.89	0.91	-.42	-.37	4.01	0.87	-.54	.06
ME1	I have experienced success in teaching students with disabilities in this instructional placement.	4.16	0.91	-1.02	.88	3.82	0.92	-.35	-.18
ME2	My prior success teaching students with disabilities reflects my abilities to teach students with disabilities in this instructional placement.	3.94	0.93	-.62	.09	3.97	0.92	-.34	-.75
ME3	I've done well teaching students with disabilities who need considerable support in this instructional placement.	3.92	0.96	-.53	-.33	3.94	0.87	-.42	-.27
ME4	In the past, the adaptations I've made for students with disabilities have not been successful in this instructional placement.	2.89	1.29	.14	-1.05	2.94	1.32	.14	-1.05
ME5	I have limited successful experiences teaching students with disabilities in this instructional placement.	3.02	1.38	.08	-1.20	3.19	1.22	.08	-.90
VE1	I have observed other PE teachers successfully teach students with disabilities in this instructional placement.	3.24	1.31	-.37	-.96	3.38	1.36	-.44	-.98
VE2	Observing other teachers teach students with disabilities has helped me develop strategies to use when I am teaching students with disabilities in this instructional placement.	3.03	1.36	.05	-1.19	2.96	1.37	-.03	-1.14
VE3	Watching other colleagues teaching students with disabilities makes me not confident in teaching students with disabilities in this instructional placement.	3.03	1.45	.06	-1.31	3.04	1.41	.01	-1.24

VE4	Seeing another teacher successfully implement instructional strategies to teach students with disabilities makes me feel that I can do the same for my students with disabilities in this instructional placement.	4.05	0.90	-.89	1.01	3.96	0.93	-.48	-.33
VE5	I've learned effective teaching techniques from watching videos of others teaching students with disabilities in this instructional placement.	3.80	1.05	-.78	.35	3.76	1.02	-.49	-.09
VE6	When I see another teacher successfully teach students with disabilities in this instructional placement, I can see myself teaching such students in the same way in this instructional placement.	3.57	1.27	-.47	-.93	3.44	1.30	-.49	-.86
SP1	I have received positive feedback from parents of students with disabilities about my abilities to their children in this instructional placement.	3.96	0.98	-.69	.09	3.81	1.01	-.40	-.28
SP2	Receiving encouragement from other teachers has reinforced my confidence to teach students with disabilities in this instructional placement.	4.07	0.92	-.60	-.41	4.08	0.86	-.41	-.79
SP3	My colleagues have told me that I'm good at teaching students with disabilities in this instructional placement.	3.94	0.91	-.48	-.07	3.93	0.91	-.33	-.46
SP4	My students with disabilities express enthusiasm during PE in this instructional placement.	4.12	0.93	-.86	.20	4.04	0.91	-.62	.07
SP5	Based on the feedback I've received from students with disabilities, I feel confident in my ability to teach such students in this instructional placement.	4.02	0.93	-.78	.46	3.94	0.88	-.15	-.99
PR1	I feel anxious when preparing to teach students with disabilities in this instructional placement.	2.81	1.35	.31	-1.01	2.78	1.38	0.35	-1.06
PR2	I enjoy teaching students with disabilities in this instructional placement.	3.90	1.02	-.82	.29	3.90	0.96	-.47	-.32
PR3	I worry about meeting the needs students with disabilities in this instructional placement.	2.32	1.13	.73	-.07	2.45	1.16	.55	-.38
PR4	I feel excited when thinking about teaching a new skill to students with disabilities in this instructional placement.	3.85	1.03	-.51	-.46	3.81	0.88	-.20	-.29
PR5	I feel hopeless after teaching students with disabilities in this instructional placement.	3.08	1.51	.15	-1.42	3.28	1.28	.07	-1.06

Note: SE = self-efficacy; ME = mastery experience; VE = vicarious experience; SP = social persuasion; PR = physiological response.

Table 2. Participants characteristics for data collections one and two.

	Data Collection 1		Data Collection 2	
	N (%)	Mean (SD)	*N* (%)	Mean (SD)
Age	259 (96.6%)	30.92 (9.95)	169 (99.4%)	29.56 (13.76)
Did not answer	9 (3.4%)		1 (0.6%)	
Gender				
Female	86 (32.1%)		105 (61.8%)	
Male	172 (64.2%)		64 (37.6%)	
Other	5 (1.9%)			
Did not answer	5 (1.9%)		1 (0.6%)	
Race				
African American/Black	11 (4.1%)		20 (11.8%)	
American Indian or Alaskan Native	5 (1.9%)			
Asian or Asian-American	3 (1.1%)		3 (1.8%)	
Hispanic/Latino	9 (3.4%)		8 (4.7%)	
Native Hawaiian or Other Pacific Islander	4 (1.5%)			
White	230 (85.8%)		132 (77.6%)	
Multiracial	6 (2.2%)		5 (3%)	
Years of PE teaching experience[1]				
Less than 3	70 (26.1%)		18 (10.6%)	
3-5	60 (22.4%)		21 (12.4%)	
6-10	70 (26.1%)		30 (17.6%)	
11-15	12 (4.5%)		11 (6.5%)	
15+	47 (17.5%)		89 (52.4%)	
Current grade level teaching[2]				
Elementary	95 (35.4%)		76 (44.7%)	
Middle	71 (26.5%)		37 (21.8%)	
High	63 (23.5%)		28 (16.5%)	
2 or more	37 (13.8%)		28 (16.5%)	
Education level				
Bachelor’s	170 (63.4%)		58 (34.1%)	
Master’s	91 (34.0%)		103 (60.6%)	

Doctorate	7 (2.6%)	8 (4.7%)
Number SWD taught in PE[3]		
1-5	88 (32.8%)	9 (5.3%)
5-10	87 (32.5%)	35 (20.6%)
10-20	20 (7.5%)	23 (13.5%)
20+	73 (27.2%)	102 (60.0%)
Instructional placement typically teach SWD[3]		
Integrated	103 (38.4%)	97 (57.1%)
Self-contained	54 (20.1%)	12 (7.1%)
Both	111 (41.4%)	60 (35.3%)

Note: [1] nine missing responses in data collection 1, one missing response in data collection two; [2] two missing responses in data collection 1, one missing response in data collection two; [3] one missing response in data collection two; SWD = students with disabilities.

Table 3. Exploratory factor analysis for SETSD-IPPE self-efficacy items

	Integrated Placement		Self-contained Placement	
		λ		λ
	λ^2	Factor 1	λ^2	Factor 1
SE1	.38	.62	.37	.61
SE2	.29	.54	.36	.60
SE3	.38	.62	.25	.50
SE4	.40	.63	.40	.64
SE5	.33	.58	.27	.52
SE6	.33	.58	.41	.64
SE7	.33	.57	.35	.59
Eigenvalues		3.09		3.05
Percent of variance		44.14		43.57
Cronbach's α		.79		.78

Note: SE = self-efficacy

Table 4. Factor structure of the Source of Integrated and Self-Contained Placement.

	Integrated Placement			Self-Contained Placement		
		λ			λ	
Scale	λ^2	Factor 1	Factor 2	λ^2	Factor 1	Factor 2
ME1	.39		.58			
ME3	.26		.50			
ME2	.27		.50			
SP3	.22		.43	.46		.65
PR4	.18		.41			
SP1				.40		.60
SP4				.35		.52
PR5	.69	.83				
VE3	.64	.79		.70	.83	
ME5				.61	.78	
ME4	.58	.76		.60	.77	
PR1	.52	.71		.54	.74	
PR3				.25	.50	
Eigenvalues		2.53	1.22		2.84	1.10
Percent of variance		28.15	13.59		35.51	13.57
Cronbach's α		.86	.64			

Note: ME = mastery experience; VE = vicarious experience; SP = social persuasion; PR = physiological response.

Table 5. Goodness-of-fit indices for Confirmatory Factor Analyses.

		Goodness-of-fit indices					Model Comparison	
Scale	Model	χ^2	*df*	CFI	RMSEA [90% CI]	SRMR	|ΔCFI|	$\Delta\chi^2$
SEI		54.43	13	0.952	0.137[0.100, 0.176]	0.036	-	-
SESC		61.46	14	0.972	0.142[0.106, 0.178]	0.017	-	-
Isubscale	A	43.90	26	0.967	0.064[0.028, 0.095]	0.046	-	-
	B	36.36	18	0.965	0.078[0.040, 0.114]	0.044	.002	7.54
SCsubscale	A	65.97	17	0.915	0.131[0.098, 0.163]	0.094	-	-
	B	11.17	11	1.00	0.010[0.000, 0.081]	0.027	-.085	54.8

Note. * $p < .05$; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; 90% CI = 90% confidence interval; SRMR = Standardized Root Mean-Squared Residual; SEI = Integrated self-efficacy scale; SESC = self-contained self-efficacy scale; Isubscale = integrated efficacy-relevant information subscale; SCsubscale = self-contained efficacy-relevant information subscale.

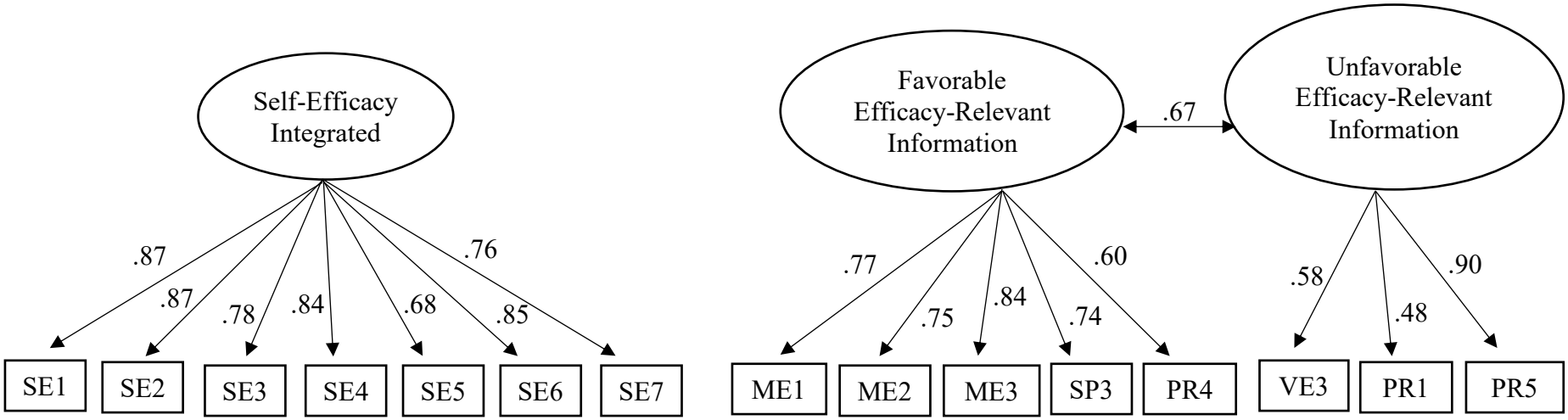

Figure 1. Final SETSD-IPPE for integrated placement with error covariation and standard estimates

Note: ME = mastery experience; VE = vicarious experience; SP = social persuasion; PR = physiological response.

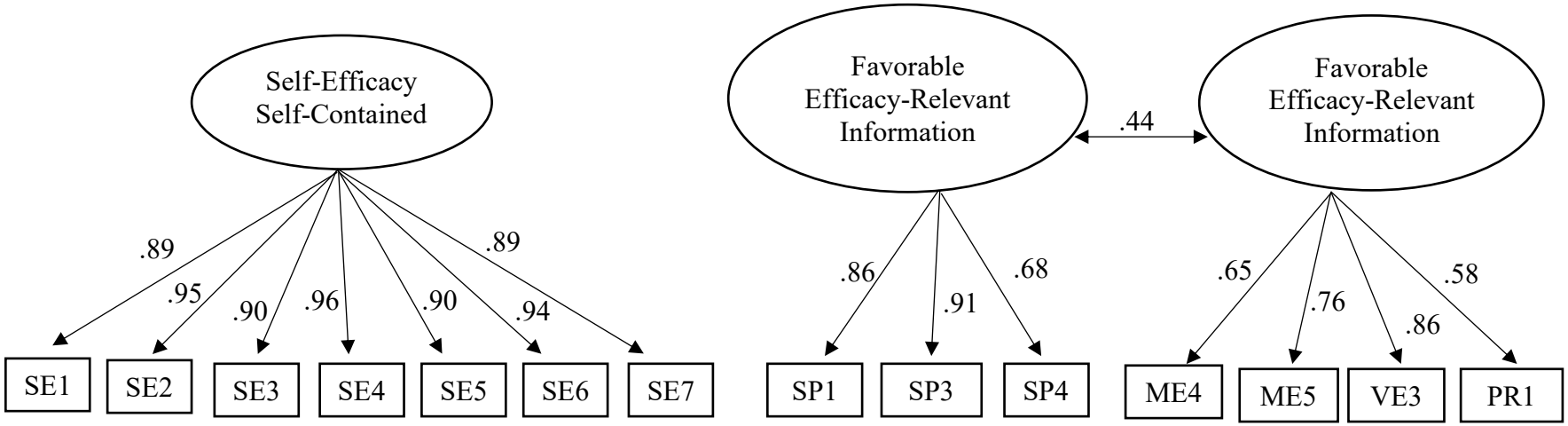

Figure 2. Final SETSD-IPPE for self-contained placement with error covariation and standard estimates.

Note: ME = mastery experience; VE = vicarious experience; SP = social persuasion; PR = physiological response.

Manuscripts II

Physical Educators' Self-Efficacy to Teach Students with Disabilities Across Instructional Placements

Abstract

The purpose of this study was to examine the differences in PE teachers' self-efficacy to teach students with disabilities across integrated and self-contained classes as well as the association between efficacy-relevant information and PE teachers' beliefs in their capabilities to teach across each placement. A total of 169 (105 females; 64 males; one undisclosed) in-service PE teachers in the US completed the Self-Efficacy to Teach Students with Disabilities Across Instructional Placements for Physical Education scale as well as a demographic questionnaire. Differences in self-efficacy between placements were tested using analyses of covariance, and associations between variables were explored via structural equation modeling. No significant differences were found between PE teachers' self-efficacy to teach in an integrated placement compared to a self-contained placement. Further, no distinctions in self-efficacy were found among PE teachers with experience teaching in only integrated or self-contained placements. However, those with experiences in both placements reported a slightly higher self-efficacy to teach in a self-contained placement. Favorable efficacy-relevant information directly predicted PE teachers' self-efficacy in both integrated and self-contained classes, however, unfavorable efficacy-relevant information had only an indirect prediction on self-efficacy with favorable efficacy-relevant information serving as a mediator. Further research may consider exploring diverse methodological procedures aiming to further connect the impact of efficacy-relevant information on PE teachers' self-efficacy across instructional placements to extend our understanding of why and how self-efficacy appears consistent across instructional settings.

Keywords: self-efficacy, physical educators, disability

Introduction

The study of physical educators' confidence toward teaching students with disabilities has been well documented (Nowland & Haegele, 2023). Collectively, this line of inquiry, which has been largely situated in self-efficacy theory (Bandura, 1997), mostly concerns physical educators' confidence within integrated physical education (PE) placements. For example, in a recent systematic review exploring research centered on physical educators' self-efficacy to teach students with disabilities by Nowland and Haegele (2023), the main source of data collection among 23 of the 24 included studies was the use of one or both of two situation- and disability-specific instruments, both concerning teaching students with disabilities in an integrated setting. The scholarly focus on integrated PE may be logical given international directives, including the Individuals with Disabilities Education Improvement Act (IDEA; 2004) and the United Nations Convention on the Rights of Persons with Disabilities (United Nations, 2006), mandating that students with disabilities have equal access to educational services, including PE, as those without disabilities. Subsequently, educational trends display a prioritization of integrated settings (USDE, 2022), including in PE, a subject identified as one of the first classes within schools to integrate students with disabilities (Maher & Haegele, 2022). Highlighting this, findings from the 2016 School Health Policies and Practices Study revealed that 97% of US public school districts mandate schools to "meet the physical education needs of students with disabilities" by "mainstreaming into regular physical education as appropriate" (CDC, 2016, p. 20).

While integrated PE has been the main focus within this line of inquiry thus far, there are important reasons to consider exploring confidence or self-efficacy of PE teachers in other settings. For example, federal mandates require that PE be offered in the least restrictive

environment (IDEA, 2004), and therefore PE can and should be provided in a number of educational settings based on the educational needs of the students, including integrated classes alongside peers without disabilities or a self-contained setting consisting of only students with disabilities (Lieberman et al., 2017; Winnick & Porretta, 2021). Notably, in the US, PE is commonly offered by general PE teachers, rather than disability specialists, regardless of the educational setting that it takes place in (CDC, 2015). Additionally, researchers contest the narrow focus on integrated educational placements without consideration of the instructional quality within the setting (Kauffman et al., 2021), which may be inadvertently perpetuating a hierarchy for integrated education over all other instructional settings (Wilson et al., 2019). Of additional concern may be the negative integrated PE experiences oftentimes expressed by students with disabilities, such as experiences with discrimination and exclusion from activities (Tanure Alves et al., 2018; Wang, 2019), which are typically linked to the attitudes and values demonstrated by their PE teachers (Tanure Alves et al., 2020). Conversely, studies exploring the PE experiences of students with disabilities in self-contained classes have described more favorable perceptions from such students, detailing more activity engagement and overall enjoyment during PE (Blagrave, 2017; Pellerin et al., 2022; Yessick et al., 2020). One central feature to participants' positive experiences in these self-contained studies is the availability of accommodative activities that support students' participation, which may be attributed to their teachers' confidence in their abilities to teach within that setting.

Although there is limited research exploring PE teachers' self-efficacy to teach students with disabilities in a self-contained placement, we do know that PE teachers' self-efficacy beliefs influence the likelihood that they will incorporate modifications and adaptations that facilitate the involvement of all students, including those with disabilities, in integrated PE classes (Block

et al., 2010; Nowland & Haegele, 2023). However, PE teachers commonly express challenges and perceived barriers towards teaching students with disabilities in integrated classes that may contribute to a low confidence in their ability to teach such students in this placement. For example, PE teacher participants in Nowland's (2024) recent qualitative study suggested that their self-efficacy to teach students with disabilities in integrated PE classes may be influenced by potential contextual factors, such as challenges with large class sizes and the lack of hands-on support personnel working alongside students with disabilities during instruction. Such findings have been expressed in similar research on PE teachers (Antala et al., 2022; Rekaa et al., 2019) as well as across other studies on teacher self-efficacy towards teaching students with disabilities in integrated settings (Cook & Ogden, 2020; Greenstein, 2014), suggesting the need for research into the degree of influence that the instructional setting of students with disabilities has on PE teachers' self-efficacy to teach such students.

Theoretical Framework

Self-efficacy, situated within Bandura's (1986, 1997) social cognitive theory, provides a useful framework for understanding and measuring one's perceived confidence and therefore, was adopted as the theoretical framework for this study. Bandura (1997) defined self-efficacy as "beliefs in one's capabilities to organize and execute the course of action required to produce given attainments" (p. 3). In essence, efficacy expectations encompass ones' belief that they can successfully perform the behavior necessary to yield an outcome. According to social cognitive theory, there are four theoretically relevant sources of information that individuals must cognitively process to construct their self-efficacy beliefs: mastery experiences, vicarious experience, social persuasion, and physiological responses (Bandura (1977; 1997). Mastery experience, otherwise known as the interpretation of ones' previous experiences, have been

found to be the most influential source of self-efficacy and can be viewed as successful or unsuccessful (Bandura, 1997; Schunk & Pajares, 2010). While a previous experience perceived as positive may boost an individuals' self-efficacy, negative experiences can have the reverse effect and decrease their self-efficacy beliefs (Bandura, 1977). Bandura (1997) argued that when prior experience is limited, individuals may evaluate their capabilities by comparison to others. Vicarious experience, regarded as the second strongest source influencing self-efficacy, is the information gained from observing others perform a similar task (Schunk & Pajares, 2010). Known to be most influential in combination with other sources, social persuasion is the third source influencing an individuals' self-efficacy beliefs. For example, the capability related feedback an individual receives from others, whether positive or negative, has been found to influence their own beliefs in their capability in future performances (Bandura, 1997; Morris et al., 2017). An individuals' self-efficacy is also informed by interpretations of their somatic responses during performance. Physiological states, such as stress or anxiety, while teaching can influence ones' beliefs in their capabilities to perform a similar task in a similar context in the future (Tschannen-Moran et al., 1998).

In order to better understand the way in which PE teachers' self-efficacy to teach students with disabilities is influenced by the placement in which instruction is given, a deeper examination of the ways in which their self-efficacy beliefs are constructed in needed (Nowland & Haegele, 2023). That is, the information that PE teachers rely on when evaluating their ability to teach students with disabilities within a particular setting remains limited within the literature. Without sufficient attention to theoretically relevant sources of information (Bandura, 1997), little is known regarding what experiences and psychological processes lead some PE teachers to be highly confident in their abilities to teach students with disabilities while others feel less

capable to teach such students. Attempting to fill such gaps in the literature, the purpose of this study was to examine the differences in PE teachers' self-efficacy to teach students with disabilities across integrated and self-contained classes as well as the association between efficacy-relevant information and PE teachers' beliefs in their capabilities to teach across each placement.

Methods

Data Collection

This cross-sectional study used an electronic survey for data collection. Following approval from the College Human Subjects Committee, a call for research participants was sent out via email to a generated listserv of PE teachers currently teaching in the US, as well as through social media groups for PE teachers. The call for participants included information on the study's purpose and protocol, eligibility criteria, an estimated time for participation, and a consent form. Criteria for inclusion in this study were (a) being 18 years of age or older, (b) currently working as a PE teacher in a school setting, (c) having experience teaching students with disabilities in PE, and (d) have access and ability to complete an online questionnaire. Prospective participants were instructed to click on an embedded electronic link within the recruitment email to access the google form to read and agree to the terms outlined in the consent form. Upon providing consent, participants proceeded to complete the online survey items. At any point, participants had the option to discontinue participation by exiting the online survey, and thereby deleting any collected data.

Instruments

A scale for measuring self-efficacy and its influencers for teaching students with disabilities was used in this study. Additionally, seven demographic items were used, including

age, gender, race, years of teaching experience, current grade levels teaching, education level, and the instructional placement they typically teach students with disabilities in PE.

Self-Efficacy to Teach Students with Disabilities Across Instruction Placements for Physical Education **(SETSD-IPPE).**

PE teachers' self-efficacy to teach students with disabilities across instructional placements was measured using a newly developed instrument, the SETSD-IPPE. This instrument contains 29-items designed to measure PE teachers' self-efficacy and efficacy-relevant information towards teaching students with disabilities across two instructional placement options. Participants were asked to rate their self-efficacy ranging from one (i.e., "not at all confident") to five (i.e., "completely confident") on seven items related to teaching students with disabilities (e.g., "I can adapt the curriculum to help meet the needs of students with disabilities in this instructional placement"). Previous analysis of the SETSD-IPPE showed adequate internal consistency with a Cronbach's alpha of .93 for teaching in an integrated placement, and .97 for a self-contained placement.

The SETSD-IPPE also includes two subscales, one for each instructional placement, based on theoretically relevant sources of self-efficacy information (Bandura, 1997). Participants were asked to rate their types of experiences related to teaching students with disabilities in an integrated placement and a self-contained placement ranging from one (i.e., "strongly disagree) to five (i.e., "strongly agree). While a relatively similar two-factor solution of the sources of self-efficacy information were found for both an integrated placement and a self-contained placement, prior analysis displayed differences in the items retained. Factors included on the integrated efficacy-relevant information subscale include three unfavorable efficacy-relevant information items (e.g., "I feel anxious when preparing to teach students with disabilities in this

instructional placement"), and five favorable efficacy-relevant information items (e.g., "I have experienced success in teaching students with disabilities in this instructional placement"). Cronbach's alpha for the retained 8-item integrated efficacy-relevant information subscale was .84. For the self-contained efficacy-relevant information subscale, factors include four unfavorable efficacy-relevant information items (e.g., In the past, the adaptations I've made for students with disabilities have not been successful in this instructional placement") and three favorable efficacy-relevant information items (e.g., "My colleagues have told me that I'm good at teaching students with disabilities in this instructional placement"). Cronbach's alpha for the retained 7-item self-contained efficacy-relevant information subscale was .81.

Data Analysis

SPSS- 28.0 software was used to compute descriptive statistics for participants demographic information via frequencies and measures of central tendency and dispersion. Mean scores for self-efficacy and efficacy-relevant information across both instructional placements (i.e., integrated, and self-contained) on the SETSD-IPPES were then calculated. To examine the differences between PE teachers' self-efficacy across integrated and self-contained instructional placements, as well as the interaction between their efficacy and the placement they typically teach students with disabilities in, we ran analyses of covariance (ANCOVA) with repetitive measures, while controlling for the approximate number of students with disabilities participants reported having taught. Finally, using EQS 6.3 software (Bentler, 2005), structural equation modeling (SEM) was conducted to investigate the amount of predicted utility that the efficacy-relevant information had on PE teachers' self-efficacy to teach students with disabilities within each instructional placement. Considered to be a useful extension of CFA, SEM allows for the use of a previously established measurement model (e.g., CFA results) as well as a structural

model that considers potential predictive relationships between the models' latent constructs (Schreiber et al., 2006). Cohen's (1988) guidelines for effect sizes (≥ .10 small; ≥ .30 medium; ≥ .50 large) is used to interpret the magnitude of the completely standardized regression coefficients (β).

Results

In total, 169 (105 females; 64 males; one undisclosed) in-service PE teachers in the US completed the survey and were included in data analysis (see Table 6). The mean age of participants was 29.56 (*SD* = 13.76) at the time of data collection. Most participants reported identifying as White (*n* = 132, 77.6%), while others identified as African American/Black (*n* = 20, 11.8%), Hispanic/Latinx (*n* = 8, 4.7%), Multiracial (*n* = 5, 3%), Asian or Asian-American (*n* = 3, 1.8%), and one undisclosed (.6%). On average, participants total self-efficacy to teach students with disabilities in an integrated instructional placement was 27.39 (*SD* = 6.51) and 26.96 (*SD* = 5.36) to teach in a self-contained placement. After controlling for the approximate number of students with disabilities participants reported having taught, the ANCOVA showed that there was no overall significant difference in PE teachers' self-efficacy across integrated and self-contained placements, $F(1, 165) = .047$, $p = .828$. Additionally, as seen in Figure 3, there was a statistically significant interaction between the placement participants typically teach students with disabilities in and PE teachers' self-efficacy ratings. More specifically, PE teachers that reported teaching in both integrated and self-contained placements rated their self-efficacy slightly higher in teaching in a self-contained placement than in an integrated placement. However, participants that reported having experiences teaching students with disabilities in only integrated or self-contained classes reported similar efficacy scores across both placements.

Using SEM, we tested the extent to which efficacy-relevant information predicted PE teachers' self-efficacy based on the hypothesized models found in Figures 3 and 4. For the integrated instructional placement (Figure 4), the findings indicated satisfactory model fit, χ^2 = 172.8, *df* = 86, CFI = .94, RMSEA = .08 (90% confidence interval [.060, .094]), SRMR = .04, NNFI = .93. As shown in Figure 4, favorable efficacy-relevant information significantly directly predicted PE teachers' self-efficacy to teach students with disabilities in an integrated placement (β = .75, p <.05). Conversely, PE teachers' self-efficacy was not directly predicated by the unfavorable efficacy-relevant information factor (β = .09, p > .05), but rather showed an indirect prediction mediated through their favorable efficacy-relevant information (β = .51, p <.05). Both the favorable and unfavorable efficacy-relevant information factors for an integrated placement were significantly positively correlated (r = .68, p < .05). The hypothesized model for PE teachers' self-efficacy to teach students with disabilities in a self-contained placement indicated a good model fit, χ^2 = 131.20, *df* = 72, CFI = .97, RMSEA = .07 (90% confidence interval [.050, .088]), SRMR = .05, NNFI = .97. As seen in Figure 5, favorable efficacy-relevant information significantly directly predicated PE teachers' self-efficacy to teach students with disabilities in a self-contained placement (β = .69, p < .05). Unfavorable efficacy-relevant information had no direct prediction (β = .14, p < .05), but instead, indirectly predicted PE teachers' self-efficacy to teach in a self-contained placement (β = .31, p < .05). Both the favorable and unfavorable efficacy-relevant information factors for a self-contained placement were significantly positively correlated as well (r = .45, p < .05).

Discussion

The purpose of this study was to examine the differences in PE teachers' self-efficacy to teach students with disabilities across integrated and self-contained classes as well as the

association between efficacy-relevant information and PE teachers' beliefs in their capabilities to teach across each placement. This study provides several unique contributions toward our understanding of PE teachers' self-efficacy beliefs to teach students with disabilities. For example, this is the first study, to the authors' knowledge, to compare PE teachers' self-efficacy to teach students with disabilities across different instructional placements. The results displayed no significant differences between PE teachers' self-efficacy to teach students with disabilities in an integrated placement compared to a self-contained placement. We consider this finding interesting and perhaps inconsistent with Bandura's (1997) theoretical assertions regarding the context-specific nature of self-efficacy beliefs. That is, while the context in which teachers are charged with teaching in is said to influence their beliefs in their capabilities to teach within that setting (Tschannen-Moran et al., 1998), in the present study, participants rated their self-efficacy similarly, despite the contextual differences in the two instructional placements (e.g., teaching students with and without students with disabilities, integrated; teaching a small group of only students with disabilities, self-contained).

While the current study design does not allow us to understand why participants' self-efficacy did not differ across settings, we can postulate that perhaps these instructional settings aren't as distinct, from the teacher's perspective, as we hypothesized. This may be particularly true for teachers who do not have experience in both settings, and therefore do not have the requisite experiences to develop accurate depictions of their efficacy to teach in both contexts. This assertion may be supported by our ANCOVA results, which showed no distinction between the self-efficacy of participants with experience teaching in only integrated or self-contained placements, however those with experiences in both placements had a slightly higher self-efficacy in a self-contained placement. These findings indicating an interaction between PE

teachers' self-efficacy across instructional placements and the placement in which they have experience teaching students with disabilities in may be somewhat encouraging given the predictive relationship between PE teachers self-efficacy and their self-reported teaching behaviors (Beamer & Yun, 2014; Kavanaugh et al., 2021). If this phenomenon is true, this may provide support for research that describes positive perceptions, increased activity participation, and greater enjoyment during PE from students with disabilities in self-contained placements (Blagrave, 2017; Pellerin et al., 2022; Yessick et al., 2020). Perhaps further qualitative research on PE teachers' experiences teaching students with disabilities across instructional placements, as well as their actual teaching behaviors within each placement, could extend our understanding of why and how self-efficacy appears consistent across instructional settings, and how or if contextual differences are perceived from the teachers' perspectives.

While previous attempts to connect theoretical underpinnings described by Bandura (1997; mastery experience, vicarious experience, social persuasion, and physiological response) to teacher self-efficacy exist (Poulou, 2007; Selickaite et al., 2018; Taliaferro et al., 2010), to the knowledge of the authors, this is also the first study to apply a psychometrically sound and theoretically based instrument on the efficacy-relevant information associated with PE teachers' self-efficacy to teach students with disabilities. Results from the SEM indicated that favorable efficacy-relevant information significantly predicted PE teachers' self-efficacy to teach students with disabilities in both integrated and self-contained placements. This finding is in keeping with Bandura's (1997) theoretical tenets in which previous experiences deemed as positive or successful, whether conveyed through enactive attainments, vicarious informants, persuasive feedback, or physiological arousal, can significantly boost self-efficacy beliefs. While the design of the scale that was use in this study does not allow for an interpretation of how each source

independently influences self-efficacy beliefs (citation anonymized for review), what may be portrayed, through the representation of distinct sources within the efficacy-relevant information subscales, are that the specific types of sources that PE teachers may weigh as relevant to teaching students with disabilities in integrated and self-contained classes. This finding offers several important implications for future research. For example, to improve this line of inquiry, intervention designs could take into consideration addressing the specific positive efficacy-relevant information that align with the contextual setting as a way to enhance PE teachers' self-efficacy. Similarly, such efficacy-relevant information can and should be embedded within pre-service training programs to help enhance pre-service PE teacher self-efficacy. Perhaps this means implementing additional APE related courses aiming to provide opportunities for various efficacy-relevant information to enhance self-efficacy, which in doing so, could help to overcome some identified limitations at the pre-service level, such as a lack of training specific to students with disabilities (Gentile et al., 2023; Haegele & Zhu, 2017; Lirgg et al., 2017). However, prior to adopting such practices, future research on the psychometric properties of the SETSD-IPPE on a pre-service PE teacher sample is needed.

Favorable efficacy-relevant information not only directly predicted PE teachers' self-efficacy in both instructional placements, but it also served as a mediator in the indirect predictive relationship between unfavorable efficacy-relevant information and PE teachers' self-efficacy to teach in integrated and self-contained placements. That is, for our participants, the significance of an unfavorable experience on their self-efficacy may be outweighed by their attention to, or amount of, favorable efficacy-relevant information, which in turn provided a stable perception of their teaching capabilities. According to theoretical understandings (Bandura, 1997), once individuals arrive at a stable perception of their capabilities, their self-

efficacy may be less susceptible to change as a result of a single failure or setback. This phenomenon may be relevant in this instance, given that a large portion (52%) of the PE teacher sample included in this study consisted of teachers with 15 or more years of teaching experience and thus, may have already established a sense of efficacy resistant to change. This phenomenon is partially supported by qualitative research on teacher self-efficacy, in which participants expressed often dismissing information resulting from a bad experience, once they had established their capability-related beliefs (Morris & Usher, 2011; Nowland, 2024; Palmer, 2011). This, again, may support future work focused more so on pre-service or early career PE teachers, where self-efficacy appears to be less stable and resilient, and more malleable to change. That is, perhaps further research exploring the predictive relationship between efficacy-relevant information and PE teachers' self-efficacy to teach students with disabilities across instructional placements can focus specifically at the early career level (e.g., first year teachers), to help us further understand the impact of these experiences at a time when self-efficacy may be less developed.

Although this study makes an important contribution toward this line of inquiry, several limitations should be considered. First, utilizing a combined measure of the four sources of self-efficacy posited by Bandura (1997; mastery experience, vicarious experience, social persuasion, and physiological response) in the form of efficacy-relevant information may be considered a limitation due to the inability to independently interpret the influence of each source on self-efficacy beliefs. Further research on the sources of self-efficacy may benefit from more diverse methodological approaches that extend our understanding on the experiences and psychological processes that provide PE teachers with confidence in their abilities to teach students with disabilities. Second, the sample size for this study was relatively small (n = 169) for this

population, with over half of the sample identifying as White (77.6%) and female (61.8%). As such, participant demographics should be considered when attempting to generalize study results to a broader PE teacher population. Lastly, the psychometric properties on the SETSD-IPPE reported on herein represent only in-service teachers, therefore, it would be premature to use on a pre-service teacher sample prior to establishing validity and reliability among this population.

Conclusions

The purpose of this study was to examine the differences in PE teachers' self-efficacy to teach students with disabilities across integrated and self-contained classes as well as the association between efficacy-relevant information and PE teachers' beliefs in their capabilities to teach across each placement. This paper makes an important contribution to the literature by being the first study, to the knowledge of the authors, to examine self-efficacy across teaching context as well as in relation to theoretically relevant sources of information (Bandura, 1997). The results from this study indicated no significant difference in PE teachers' self-efficacy across integrated and self-contained placements. Further, SEM results indicated a direct prediction between favorable efficacy-relevant information and PE teachers' self-efficacy in both integrated and self-contained classes, while unfavorable efficacy-relevant information indirectly predicted self-efficacy with favorable efficacy-relevant information serving as a mediator. This line of inquiry should be extended to examine how efficacy-relevant information influence self-efficacy of early career PE teachers (e.g., 1–3-years of experience), or perhaps, at the pre-service level. Future scholars may also consider exploring diverse methodological procedures aiming to connect PE teachers' self-efficacy across instructional placements to their actual teaching behaviors.

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Table 6. Participant demographics

	Data Collection	
	N (%)	Mean (SD)
Age	169 (99.4%)	29.56 (13.76%)
Did not answer	1 (0.6%)	
Gender		
Female	105 (61.8%)	
Male	64 (37.6%)	
Other		
Did not answer	1 (0.6%)	
Race		
African American/Black	20 (11.8%)	
American Indian or Alaskan Native		
Asian or Asian-American	3 (1.8%)	
Hispanic/Latino	8 (4.7%)	
Native Hawaiian or Other Pacific Islander		
White	132 (77.6%)	
Multiracial	5 (3%)	
Years of PE teaching experience*		
Less than 3	18 (10.6%)	
3-5	21 (12.4%)	
6-10	30 (17.6%)	
11-15	11 (6.5%)	
15+	89 (52.4%)	
Current grade level teaching*		
Elementary	76 (44.7%)	
Middle	37 (21.8%)	
High	28 (16.5%)	
2 or more	28 (16.5%)	
Education level		
Bachelor's	58 (34.1%)	
Master's	103 (60.6%)	
Doctorate	8 (4.7%)	
Instructional placement typically teach SWD*		
Integrated	97 (57.1%)	
Self-contained	12 (7.1%)	
Both	60 (35.3%)	
Self-efficacy to teach SWD		
Integrated average sum		27.39 (6.51%)
Self-contained average sum		26.96 (5.36%)

Note: * One missing response; SWD = students with disabilities

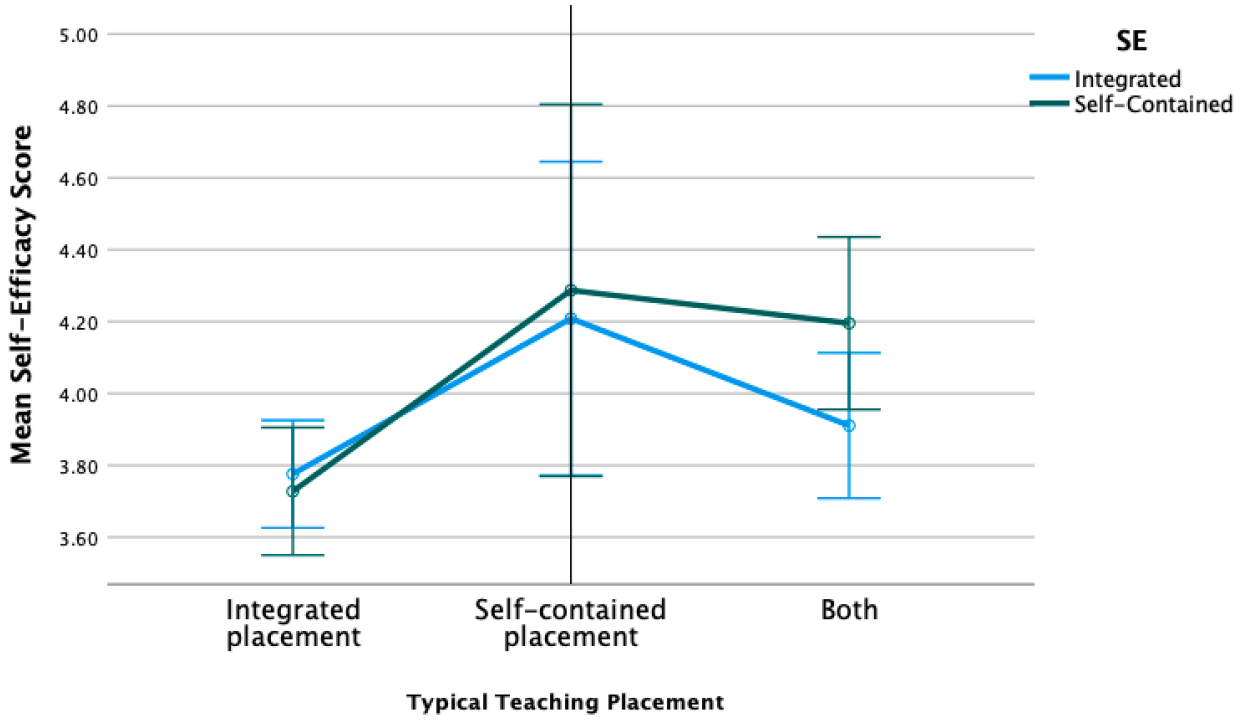

Figure 3. Estimated marginal means of PE teachers' self-efficacy between placements based on the placement they typically teach students with disabilities in.

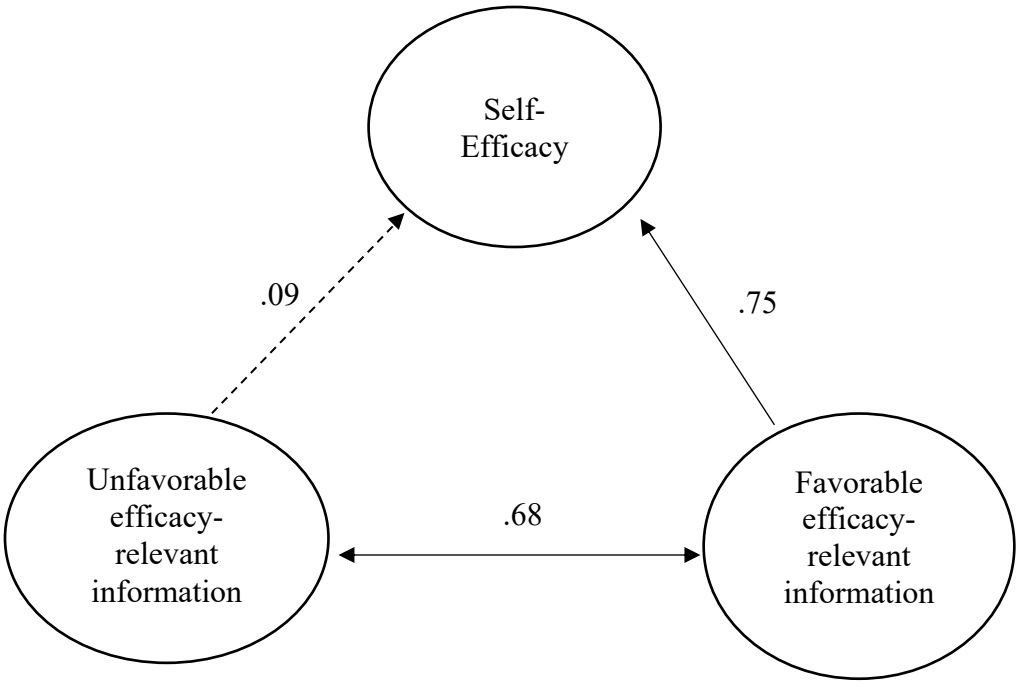

Figure 4. Structural model of self-efficacy and its' efficacy-relevant information for an integrated placement.

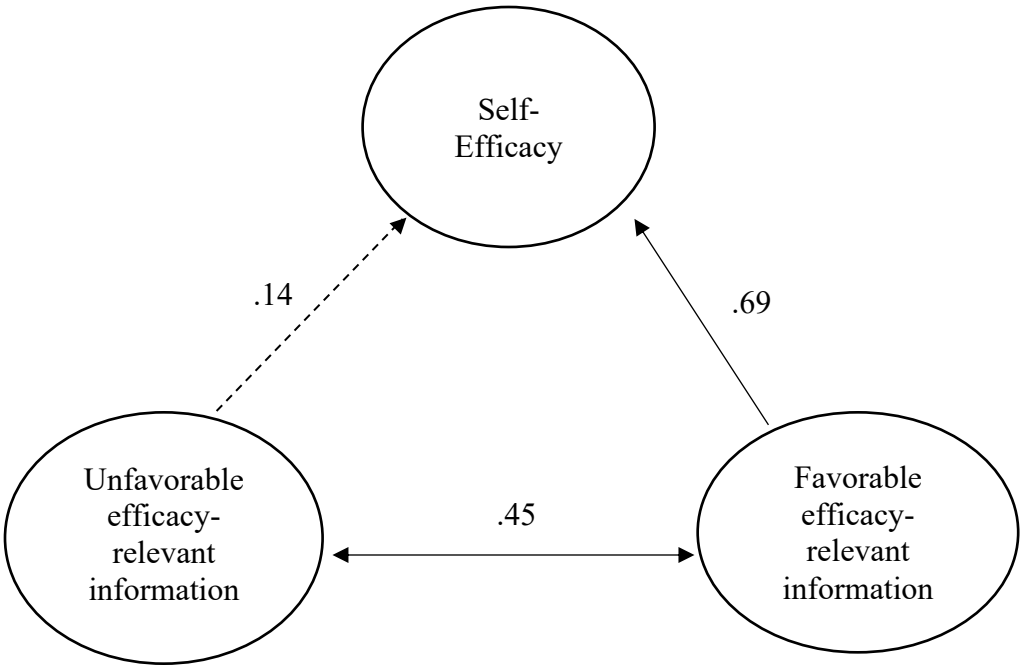

Figure 5. Structural model of self-efficacy and its' efficacy-relevant information for a self-contained placement.

CHAPTER V: SUMMARY AND CONCLUSIONS

Much research has been conducted on physical educators' self-efficacy to teach students with disabilities based on Banduras' (1977; 1997) social cognitive theory. Most of this literature base, to date, concerns integrated physical education (PE) placements, with little known about PE teachers' beliefs towards teaching students with disabilities in other contexts, such as self-contained classes (Nowland & Haegele, 2023; Winnick, 2017). Additionally, there is a lack of research examining how the four sources of self-efficacy information posited by Bandura (1997; mastery experiences, vicarious experience, social persuasion, and physiological response) interact to shape PE teachers' self-efficacy beliefs. The studies in this dissertation aimed to first, develop a scale, to then used to examine the difference in PE teachers' self-efficacy to teach students with disabilities across integrated and self-contained placements as well as the differential influence that sources of self-efficacy have on PE teachers' self-efficacy across these placements.

The purpose of the first study was to develop and validate a scale designed to measure PE teachers' self-efficacy and sources of information to teach students with disabilities across different types of instructional placements for PE. The *Self-Efficacy to Teach Students with Disabilities Across Instruction Placements for Physical Education* (SETSD-IPPE) scale was constructed in four phases: (a) item development, (b) content validity, (c) exploratory factor analysis, and (d) confirmatory factor analysis. Phases one and two, item development and content validity, resulted in a 56-item measure consisting of self-efficacy (7-items), mastery experience (5-items), vicarious experience (6-items), social persuasion (5-items), and physiological responses (5-items), across integrated and self-contained placements. EFA resulted in factor and item reduction that aided in the reorganization of sources of self-efficacy into two

efficacy-relevant information subscales, one for each instructional placement. A total of 31-items were retained after the EFA; however, two additional items were removed, one from each of the instructional placements' efficacy-relevant information subscale, following CFA procedures due to poor factor loadings. The final SETSD-IPPE contains 29-items including a 7-item (one factor) self-efficacy scale and an 8-item (two factor) efficacy-relevant information subscale for teaching students with disabilities in an integrated PE placement, as well as a 7-item (one factor) self-efficacy scale and 7-item (two factor) efficacy-relevant information subscale for teaching students with disabilities in a self-contained PE placement.

The findings of the first study provide some important contributions to the literature. First, although there are several well used self-efficacy instruments designed to measure PE teachers' self-efficacy to teach students with disabilities in integrated placements, (Block et al., 2013; Taliaferro et al., 2010), the SETSD-IPPE helps extend potential future research by allowing for comparisons in self-efficacy beliefs across teaching contexts. For example, in the previously constructed scales (Block et al., 2013; Taliaferro et al., 2010), the premise was to generate items related to teaching students with disabilities in integrated classes, and thus, the overall structure of items limits its application to other instructional placements, including self-contained classes. This is concerning given the majority of intervention-based research within this line of inquiry, utilizing integrated self-efficacy measures (e.g., SE-PETE-D), has involved structured professional training practicum or workshops consisting of only students with disabilities (Foley et al., 2020; Koh, 2021; Taliaferro et al., 2015; Tindall et al., 2016). It may be logical to suggest that professional training practicum or workshops involving only those with disabilities may be best suited to enhance self-efficacy in contexts more similar to the training arena, such as self-contained classes. The development and validation of the SETSD-IPPE may

provide the opportunity to gain insight into the differential effectiveness of such commonly used interventions (e.g., practicum, service learning, professional development) on PE teachers self-efficacy to teach students with disabilities across placement options.

Second, the addition of subscales related to theoretically relevant sources of information (Bandura, 1997), provide, for the first time to the authors knowledge, a valid measure of the types of experiences PE teachers value based on the teaching context. Despite our intention to construct a survey to measure the sources of PE teachers' self-efficacy based on Bandura's (1997) four posited theoretical constructs, our analyses resulted in the reconstruction of sources into two factor efficacy-relevant information subscales. Some researchers have cautioned scholars about the combination of sources due to the inability to understand how each source is independently interpreted (Usher & Pajares, 2008). However, other studies attempting to validate measures of the sources of teaching self-efficacy encountered similar psychometric problems as found herein, in which a clear four-factor solution corresponding with each source of self-efficacy was not found (Kieffer & Henson, 2000; Morris & Usher, 2013; Poulou, 2007; Weaver-Shearn, 2008). As such, our findings, which demonstrated cross-loadings among source items and the need to re-organize our survey, have some historical precedence. While there are shared items between the factors generated for each placement's efficacy-relevant information subscale, there are items unique to each placement, identifying differences between factors for each instructional placement. This finding highlights the degree in which certain types of efficacy-relevant information may hold value towards PE teachers' confidences in their abilities to teach students with disabilities depending on the placement that they are teaching them in. That is, when selecting, weighting, and integrating information across the four major modalities of influence (i.e., mastery experience, vicarious experience, social persuasion, and physiological

response), PE teachers may assess the relevance of certain experiences differently based on the context in which they are teaching in (Morris et al., 2017).

The purpose of the second study was to examine the differences in PE teachers' self-efficacy to teach students with disabilities across integrated and self-contained classes as well as the association between efficacy-relevant information and PE teachers' beliefs in their capabilities to teach across each placement. This study provides several unique contributions toward our understanding of PE teachers' self-efficacy beliefs to teach students with disabilities. For example, this is the first study, to the authors' knowledge, to compare PE teachers' self-efficacy to teach students with disabilities across different instructional placements. The results displayed no significant differences between PE teachers' self-efficacy to teach students with disabilities in an integrated placement compared to a self-contained placement. We consider this finding interesting and perhaps inconsistent with Bandura's (1997) theoretical assertions regarding the context-specific nature of self-efficacy beliefs. That is, while the context in which teachers are charged with teaching in is said to influence their beliefs in their capabilities to teach within that setting (Tschannen-Moran et al., 1998), in the present study, participants rated their self-efficacy similarly, despite the contextual differences in the two instructional placements (e.g., teaching students with and without students with disabilities, integrated; teaching a small group of only students with disabilities, self-contained).

While the current study design does not allow us to understand why participants' self-efficacy did not differ across settings, we can postulate that perhaps these instructional settings aren't as distinct, from the teacher's perspective, as we hypothesized. This may be particularly true for teachers who do not have experience in both settings, and therefore do not have the requisite experiences to develop accurate depictions of their efficacy to teach in both contexts.

This assertion may be supported by our ANCOVA results, which showed no distinction between the self-efficacy of participants with experience teaching in only integrated or self-contained placements, however those with experiences in both placements had a slightly higher self-efficacy in a self-contained placement. These findings indicating an interaction between PE teachers' self-efficacy across instructional placements and the placement in which they have experience teaching students with disabilities in may be somewhat encouraging given the predictive relationship between PE teachers self-efficacy and their self-reported teaching behaviors (Beamer & Yun, 2014; Kavanaugh et al., 2021). If this phenomenon is true, this may provide support for research that describes positive perceptions, increased activity participation, and greater enjoyment during PE from students with disabilities in self-contained placements (Blagrave, 2017; Pellerin et al., 2022; Yessick et al., 2020). Perhaps further qualitative research on PE teachers' experiences teaching students with disabilities across instructional placements, as well as their actual teaching behaviors within each placement, could extend our understanding of why and how self-efficacy appears consistent across instructional settings, and how or if contextual differences are perceived from the teachers' perspectives.

While previous attempts to connect theoretical underpinnings described by Bandura (1997; mastery experience, vicarious experience, social persuasion, and physiological response) to teacher self-efficacy exist (Poulou, 2007; Selickaite et al., 2018; Taliaferro et al., 2010), to the knowledge of the authors, this is also the first study to apply a psychometrically sound and theoretically based instrument on the efficacy-relevant information associated with PE teachers' self-efficacy to teach students with disabilities. Results from the SEM indicated that favorable efficacy-relevant information significantly predicted PE teachers' self-efficacy to teach students with disabilities in both integrated and self-contained placements. This finding is in keeping with

Bandura's (1997) theoretical tenets in which previous experiences deemed as positive or successful, whether conveyed through enactive attainments, vicarious informants, persuasive feedback, or physiological arousal, can significantly boost self-efficacy beliefs. While the design of the scale that was use in this study does not allow for an interpretation of how each source independently influences self-efficacy beliefs (citation anonymized for review), what may be portrayed, through the representation of distinct sources within the efficacy-relevant information subscales, are that the specific types of sources that PE teachers may weigh as relevant to teaching students with disabilities in integrated and self-contained classes. This finding offers several important implications for future research. For example, to improve this line of inquiry, intervention designs could take into consideration addressing the specific positive efficacy-relevant information that align with the contextual setting as a way to enhance PE teachers' self-efficacy. Similarly, such efficacy-relevant information can and should be embedded within pre-service training programs to help enhance pre-service PE teacher self-efficacy. Perhaps this means implementing additional APE related courses aiming to provide opportunities for various efficacy-relevant information to enhance self-efficacy, which in doing so, could help to overcome some identified limitations at the pre-service level, such as a lack of training specific to students with disabilities (Gentile et al., 2023; Haegele & Zhu, 2017; Lirgg et al., 2017). However, prior to adopting such practices, future research on the psychometric properties of the SETSD-IPPE on a pre-service PE teacher sample is needed.

Favorable efficacy-relevant information not only directly predicted PE teachers' self-efficacy in both instructional placements, but it also served as a mediator in the indirect predictive relationship between unfavorable efficacy-relevant information and PE teachers' self-efficacy to teach in integrated and self-contained placements. That is, for our participants, the

significance of an unfavorable experience on their self-efficacy may be outweighed by their attention to, or amount of, favorable efficacy-relevant information, which in turn provided a stable perception of their teaching capabilities. According to theoretical understandings (Bandura, 1997), once individuals arrive at a stable perception of their capabilities, their self-efficacy may be less susceptible to change as a result of a single failure or setback. This phenomenon may be relevant in this instance, given that a large portion (52%) of the PE teacher sample included in this study consisted of teachers with 15 or more years of teaching experience and thus, may have already established a sense of efficacy resistant to change. This phenomenon is partially supported by qualitative research on teacher self-efficacy, in which participants expressed often dismissing information resulting from a bad experience, once they had established their capability-related beliefs (Morris & Usher, 2011; Nowland, 2024; Palmer, 2011). This, again, may support future work focused more so on pre-service or early career PE teachers, where self-efficacy appears to be less stable and resilient, and more malleable to change. That is, perhaps further research exploring the predictive relationship between efficacy-relevant information and PE teachers' self-efficacy to teach students with disabilities across instructional placements can focus specifically at the early career level (e.g., first year teachers), to help us further understand the impact of these experiences at a time when self-efficacy may be less developed.

Limitations and Conclusions

Although these studies make important contributions toward this line of inquiry, several limitations should be considered. First, the sample size for the first (i.e., 268) and second (i.e., 169) dataset were somewhat low for EFA and CFA, which may have resulted in discarding items that may have been retained with a larger sample (Mundform et al., 2005). Additionally, the

psychometric properties on the SETSD-IPPE reported on herein represent only in-service teachers, therefore, it would be premature to use on a pre-service teacher sample prior to establishing validity and reliability among this population. Second, the SETSD-IPPE is a non-disability specific instrument. Authors note this as a potential limitation due to the relatively context and domain-specific nature of self-efficacy theory (Bandura, 1997), however, items can easily be manipulating in future studies by changing "students with disabilities" broadly defined to be disability specific (e.g., students with autism). Lastly, utilizing a combined measure of the four sources of self-efficacy posited by Bandura (1997; mastery experience, vicarious experience, social persuasion, and physiological response) in the form of efficacy-relevant information may be considered a limitation due to the inability to independently interpret the influence of each source on self-efficacy beliefs. Further research on the sources of self-efficacy may benefit from more diverse methodological approaches that extend our understanding on the experiences and psychological processes that provide PE teachers with confidence in their abilities to teach students with disabilities.

In summary, the results of the present study demonstrate support for the SETSD-IPPE as a valid measure of PE teachers' self-efficacy to teach students with disabilities in integrated and self-contained classes. The psychometric qualities, validity, and reliability of the newly developed instrument were supported among two in-service PE teacher samples. Additionally, the efficacy-relevant information subscales provide valid measures of the types of experiences that PE teachers value based on the teaching context. No difference in PE teachers' self-efficacy was found across integrated and self-contained placements. Further, no distinctions in self-efficacy were found among PE teachers with experience teaching in only integrated or self-contained placements. However, those with experiences in both placements reported a slightly

higher self-efficacy to teach in a self-contained placement. SEM results indicated a direct prediction between favorable efficacy-relevant information and PE teachers' self-efficacy in both integrated and self-contained classes, while unfavorable efficacy-relevant information indirectly predicted self-efficacy with favorable efficacy-relevant information serving as a mediator. This line of inquiry should be extended to examine how efficacy-relevant information influence self-efficacy of early career PE teachers (e.g., 1–3-years of experience), or perhaps, at the pre-service level. Future scholars may also consider exploring diverse methodological procedures aiming to connect PE teachers' self-efficacy across instructional placements to their actual teaching behaviors.

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APPENDICES

APPENDIX A

Self-Efficacy to Teach Students with Disabilities Across Instruction Placements for Physical Education (PRELIMINARY)

Self-Efficacy Scale		**Integrated PE** A setting in which students with and without disabilities are taught in the same space with the help of support services, such as a teacher aid.					**Self-contained PE** A PE placement option consisting of a small group of **only** students with disabilities with the help of support services, such as a teacher aid.				
		Not at all confident	A little confident	Moderately confident	Very confident	Completely confident	Not at all confident	A little confident	Moderately confident	Very confident	Completely confident
SE1	I can adapt the curriculum to help meet the needs of students with disabilities in this instructional placement.	1	2	3	4	5	1	2	3	4	5
SE2	I can use a wide variety of instructional strategies to enhance understanding for students with disabilities in this instructional placement.	1	2	3	4	5	1	2	3	4	5
SE3	I can break down a complex skill into its parts to facilitate learning for students with disabilities in this instructional placement.	1	2	3	4	5	1	2	3	4	5
SE4	I can plan for adaptations in my lessons, as needed, to meet the needs of students with disabilities in this instructional placement.	1	2	3	4	5	1	2	3	4	5
SE5	I can provide support to students with disabilities, including handling disruptive behaviors in this instructional placement.	1	2	3	4	5	1	2	3	4	5
SE6	I can implement individualized learning tasks that meet each students' diverse needs in this instructional placement.	1	2	3	4	5	1	2	3	4	5

SE7	I can facilitate physical activity engagement for all of my students in this instructional placement.	1	2	3	4	5	1	2	3	4	5

Mastery Experience Subscale		**Integrated PE** A setting in which students with and without disabilities are taught in the same space with the help of support services, such as a teacher aid.					**Self-contained PE** A PE placement option consisting of a small group of **only** students with disabilities with the help of support services, such as a teacher aid.				
		Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
ME1	I have experienced success in teaching students with disabilities in this instructional placement.	1	2	3	4	5	1	2	3	4	5
ME2	My prior success teaching students with disabilities reflects my abilities to teach students with disabilities in this instructional placement.	1	2	3	4	5	1	2	3	4	5
ME3	I've done well teaching students with disabilities who need considerable support during instruction in this instructional placement.	1	2	3	4	5	1	2	3	4	5
ME4	In the past, the adaptations I've made for students with disabilities have not been successful in this instructional placement. [R]	1	2	3	4	5	1	2	3	4	5
ME5	I have limited successful experiences teaching students with disabilities in this instructional placement. [R]	1	2	3	4	5	1	2	3	4	5

Vicarious Experience Subscale		**Integrated PE** A setting in which students with and without disabilities are taught in the same space with the help of support services, such as a teacher aid.					**Self-contained PE** A PE placement option consisting of a small group of **only** students with disabilities with the help of support services, such as a teacher aid.				
		Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
VE1	I observe other PE teachers successfully teach students with disabilities in this instructional placement.	1	2	3	4	5	1	2	3	4	5
VE2	Observing other teachers teach students with disabilities has helped me develop strategies to use when I am teaching students with disabilities in this instructional placement.	1	2	3	4	5	1	2	3	4	5
VE3	Watching other colleagues teaching students with disabilities makes me not confident in teaching students with disabilities in this instructional placement. [R]	1	2	3	4	5	1	2	3	4	5
VE4	Seeing another teacher successfully implement instructional strategies to teach students with disabilities in this instructional placement makes me feel that I can do the same for my students with disabilities in this instructional placement.	1	2	3	4	5	1	2	3	4	5
VE5	I've learned effective teaching techniques from watching videos of others teaching students with disabilities in this instructional placement.	1	2	3	4	5	1	2	3	4	5
VE6	When I see another teacher successfully teach students with disabilities in this instructional placement, I can see myself teaching such students in the same way in this instructional placement.	1	2	3	4	5	1	2	3	4	5

Social Persuasion Subscale		**Integrated PE** A setting in which students with and without disabilities are taught in the same space with the help of support services, such as a teacher aid.					**Self-contained PE** A PE placement option consisting of a small group of **only** students with disabilities with the help of support services, such as a teacher aid.				
		Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
SP1	I receive positive feedback from parents of students with disabilities about my abilities to their children in this instructional placement.	1	2	3	4	5	1	2	3	4	5
SP2	Receiving encouragement from other teachers reinforces my confidence to teach students with disabilities in this instructional placement.	1	2	3	4	5	1	2	3	4	5
SP3	My colleagues have told me that I'm good at teaching students with disabilities in this instructional placement.	1	2	3	4	5	1	2	3	4	5
SP4	My students with disabilities express enthusiasm during PE in this instructional placement.	1	2	3	4	5	1	2	3	4	5
SP5	Based on the feedback I've received from students with disabilities, I feel confident in my ability to teach students with disabilities in this instructional placement.	1	2	3	4	5	1	2	3	4	5

Phycological Response Subscale	**Integrated PE** A setting in which students with and without disabilities are taught in the same space with the help of support services, such as a teacher aid.	**Self-contained PE** A PE placement option consisting of a small group of **only** students with disabilities with the help of support services, such as a teacher aid.

		Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
PR1	I feel anxious when preparing to teach students with disabilities in this instructional placement. [R]	1	2	3	4	5	1	2	3	4	5
PR2	I enjoy teaching students with disabilities in this instructional placement.	1	2	3	4	5	1	2	3	4	5
PR3	I worry about meeting the needs of students with disabilities in this instructional placement. [R]	1	2	3	4	5	1	2	3	4	5
PR4	I feel excited when thinking about teaching a new skill to students with disabilities in this instructional placement.	1	2	3	4	5	1	2	3	4	5
PR5	I feel hopeless after teaching students with disabilities in this instructional placement. [R]	1	2	3	4	5	1	2	3	4	5

APPENDIX B

Self-Efficacy to Teach Students with Disabilities Across Instruction Placements for Physical Education (DATA COLLECTION 2)

Self-Efficacy Scale		**Integrated PE** A setting in which students with and without disabilities are taught in the same space with the help of support services, such as a teacher aid.					**Self-contained PE** A PE placement option consisting of a small group of **only** students with disabilities with the help of support services, such as a teacher aid.				
		Not at all confident	A little confident	Moderately confident	Very confident	Completely confident	Not at all confident	A little confident	Moderately confident	Very confident	Completely confident
SE1	I can adapt the curriculum to help meet the needs of students with disabilities in this instructional placement.	1	2	3	4	5	1	2	3	4	5
SE2	I can use a wide variety of instructional strategies to enhance understanding for students with disabilities in this instructional placement.	1	2	3	4	5	1	2	3	4	5
SE3	I can break down a complex skill into its parts to facilitate learning for students with disabilities in this instructional placement.	1	2	3	4	5	1	2	3	4	5
SE4	I can plan for adaptations in my lessons, as needed, to meet the needs of students with disabilities in this instructional placement.	1	2	3	4	5	1	2	3	4	5
SE5	I can provide support to students with disabilities, including handling disruptive behaviors in this instructional placement.	1	2	3	4	5	1	2	3	4	5
SE6	I can implement individualized learning tasks that meet each students' diverse needs in this instructional placement.	1	2	3	4	5	1	2	3	4	5
SE7	I can facilitate physical activity engagement for all of my students in this instructional placement.	1	2	3	4	5	1	2	3	4	5

Efficacy-Relevant Information Subscale for an Integrated Placement		**Integrated PE** A setting in which students with and without disabilities are taught in the same space with the help of support services, such as a teacher aid.				
		Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
ME1	I have experienced success in teaching students with disabilities in this instructional placement.	1	2	3	4	5
ME2	My prior success teaching students with disabilities reflects my abilities to teach students with disabilities in this instructional placement.	1	2	3	4	5
ME3	I've done well teaching students with disabilities who need considerable support during instruction in this instructional placement.	1	2	3	4	5
ME4	In the past, the adaptations I've made for students with disabilities have not been successful in this instructional placement. [R]	1	2	3	4	5
VE3	Watching other colleagues teaching students with disabilities makes me not confident in teaching students with disabilities in this instructional placement. [R]	1	2	3	4	5
SP3	My colleagues have told me that I'm good at teaching students with disabilities in this instructional placement.	1	2	3	4	5
PR1	I feel anxious when preparing to teach students with disabilities in this instructional placement. [R]	1	2	3	4	5
PR4	I feel excited when thinking about teaching a new skill to students with disabilities in this instructional placement.	1	2	3	4	5
PR5	I feel hopeless after teaching students with disabilities in this instructional placement. [R]	1	2	3	4	5

Efficacy-Relevant Information Subscale for a Self-Contained Placement		**Self-contained PE** A PE placement option consisting of a small group of **only** students with disabilities with the help of support services, such as a teacher aid.				
		Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
ME4	In the past, the adaptations I've made for students with disabilities have not been successful in this instructional placement. [R]	1	2	3	4	5

ME5	I have limited successful experiences teaching students with disabilities in this instructional placement. [R]	1	2	3	4	5
VE3	Watching other colleagues teaching students with disabilities makes me not confident in teaching students with disabilities in this instructional placement. [R]	1	2	3	4	5
SP1	I have received positive feedback from parents of students with disabilities about my abilities to their children in this instructional placement.	1	2	3	4	5
SP3	My colleagues have told me that I'm good at teaching students with disabilities in this instructional placement.	1	2	3	4	5
SP4	My students with disabilities express enthusiasm during PE in this instructional placement.	1	2	3	4	5
PR1	I feel anxious when preparing to teach students with disabilities in this instructional placement. [R]	1	2	3	4	5
PR3	I worry about meeting the needs of students with disabilities in this instructional placement. [R]	1	2	3	4	5

APPENDIX C

Self-Efficacy to Teach Students with Disabilities Across Instruction Placements for Physical Education (FINAL VERSION)

Self-Efficacy Scale		**Integrated PE** A setting in which students with and without disabilities are taught in the same space with the help of support services, such as a teacher aid.					**Self-contained PE** A PE placement option consisting of a small group of **only** students with disabilities with the help of support services, such as a teacher aid.				
		Not at all confident	A little confident	Moderately confident	Very confident	Completely confident	Not at all confident	A little confident	Moderately confident	Very confident	Completely confident
SE1	I can adapt the curriculum to help meet the needs of students with disabilities in this instructional placement.	1	2	3	4	5	1	2	3	4	5
SE2	I can use a wide variety of instructional strategies to enhance understanding for students with disabilities in this instructional placement.	1	2	3	4	5	1	2	3	4	5
SE3	I can break down a complex skill into its parts to facilitate learning for students with disabilities in this instructional placement.	1	2	3	4	5	1	2	3	4	5
SE4	I can plan for adaptations in my lessons, as needed, to meet the needs of students with disabilities in this instructional placement.	1	2	3	4	5	1	2	3	4	5
SE5	I can provide support to students with disabilities, including handling disruptive behaviors in this instructional placement.	1	2	3	4	5	1	2	3	4	5
SE6	I can implement individualized learning tasks that meet each students' diverse needs in this instructional placement.	1	2	3	4	5	1	2	3	4	5
SE7	I can facilitate physical activity engagement for all of my students in this instructional placement.	1	2	3	4	5	1	2	3	4	5

Efficacy-Relevant Information Subscale for an Integrated Placement		**Integrated PE** A setting in which students with and without disabilities are taught in the same space with the help of support services, such as a teacher aid.				
		Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
ME1	I have experienced success in teaching students with disabilities in this instructional placement.	1	2	3	4	5
ME2	My prior success teaching students with disabilities reflects my abilities to teach students with disabilities in this instructional placement.	1	2	3	4	5
ME3	I've done well teaching students with disabilities who need considerable support during instruction in this instructional placement.	1	2	3	4	5
VE3	Watching other colleagues teaching students with disabilities makes me not confident in teaching students with disabilities in this instructional placement. [R]	1	2	3	4	5
SP3	My colleagues have told me that I'm good at teaching students with disabilities in this instructional placement.	1	2	3	4	5
PR1	I feel anxious when preparing to teach students with disabilities in this instructional placement. [R]	1	2	3	4	5
PR4	I feel excited when thinking about teaching a new skill to students with disabilities in this instructional placement.	1	2	3	4	5
PR5	I feel hopeless after teaching students with disabilities in this instructional placement. [R]	1	2	3	4	5

Efficacy-Relevant Information Subscale for a Self-Contained Placement		**Self-contained PE** A PE placement option consisting of a small group of **only** students with disabilities with the help of support services, such as a teacher aid.				
		Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
ME4	In the past, the adaptations I've made for students with disabilities have not been successful in this instructional placement. [R]	1	2	3	4	5
ME5	I have limited successful experiences teaching students with disabilities in this instructional placement. [R]	1	2	3	4	5

VE3	Watching other colleagues teaching students with disabilities makes me not confident in teaching students with disabilities in this instructional placement. [R]	1	2	3	4	5
SP1	I have received positive feedback from parents of students with disabilities about my abilities to their children in this instructional placement.	1	2	3	4	5
SP3	My colleagues have told me that I'm good at teaching students with disabilities in this instructional placement.	1	2	3	4	5
SP4	My students with disabilities express enthusiasm during PE in this instructional placement.	1	2	3	4	5
PR1	I feel anxious when preparing to teach students with disabilities in this instructional placement. [R]	1	2	3	4	5

APPENDIX D

DEMOGRAPHIC QUESTIONNAIRE

Demographic Questions:

1. _____ Your age
2. _____ Your gender
3. _____ Your race/Ethnicity
    a. African American or Black
    b. American Indian or Alaskan Native
    c. Asian or Asian-American
    d. Hispanic or Latino
    e. Native Hawaiian or Other Pacific Islander
    f. White
    g. Multiracial
    h. Other
4. _____ Years of teaching physical education
5. _____ Current grade levels your teaching
    a. elementary
    b. middle
    c. high
6. _____ Education level
    a. Bachelors
    b. Masters
    c. Doctorate
7. _____ In what instructional placement do you typically teach students with disabilities?
    a. Integrated physical education
    b. Self-contained physical education
    c. Both
    d. Other

APPENDIX E

Study One Participant Informed Consent

INFORMED CONSENT DOCUMENT
OLD DOMINION UNIVERSITY

PROJECT TITLE: Self-Efficacy to Teach Students with Disabilities Across Instructional Placements for Physical Education Scale: Development and Validation

INTRODUCTION
The purpose of this form is to give you information that may affect your decision whether to say YES or NO to participation in this research, and to record the consent of those who say YES. This project, Self-Efficacy to Teach Students with Disabilities Across Instructional Placements for Physical Education Scale: Development and Validation, will be conducted via an online survey questionnaire.

RESEARCHERS
Lindsey A. Nowland, MEd, Doctoral Scholar, Department of Human Movement Sciences, Old Dominion University
Justin A. Haegele, PhD, Associate Professor, Department of Human Movement Sciences, Old Dominion University
Zhu Xihe, PhD, Department Chair, Department of Human Movement Sciences, Old Dominion University

DESCRIPTION OF RESEARCH STUDY
The purpose of this study will be to examine to what degree instructional placements for physical education impacts physical educators' self-efficacy towards teaching students with disabilities and the differential influence that the four sources of self-efficacy have on physical educators' self-efficacy across instructional placements for teaching students with disabilities. If you decide to participate, then you will be asked to complete an online survey questionnaire of a total of 38 questions. The survey should take approximately 15-30 minutes to complete.

EXCLUSIONARY CRITERIA
To the best of your knowledge, you should not be under the age of 18, as that would keep you from participating in this study. You should also be currently working as a physical education teacher in a school setting and currently or have previously taught students with disabilities in physical education class.

RISKS AND BENEFITS
RISKS: There are no expected or predicted potential risks associated with participation in this study. And, as with any research, there is some possibility that you may be subject to risks that have not yet been identified.

BENEFITS: There are no expected or predicted potential benefits associated with the participation in this study.

COSTS AND PAYMENTS
The researchers want your decision about participating in this study to be absolutely voluntary. Yet they recognize that your participation may pose some inconvenience. Participants who complete the survey may opt into a drawing for one of ten $25.00 amazon gift cards.

NEW INFORMATION
If the researchers find new information during this study that would reasonably change your decision about participating, then they will give it to you.

CONFIDENTIALITY

The researchers will take reasonable steps to keep private information, such as names and contact information. The researchers will delete/destroy all contact information after data are collected. The results of this study may be used in reports, presentations, and publications; but the researcher will not identify you. Of course, your records may be subpoenaed by court order or inspected by government bodies with oversight authority.

WITHDRAWAL PRIVILEGE

It is OK for you to say NO. Even if you say YES now, you are free to say NO later by not completing the survey. Your decision will not affect your relationship with Old Dominion University, or otherwise cause a loss of benefits to which you might otherwise be entitled.

COMPENSATION FOR ILLNESS AND INJURY

If you say YES, then your consent in this document does not waive any of your legal rights. However, in the event of harm arising from this study, neither Old Dominion University nor the researchers are able to give you any money, insurance coverage, free medical care, or any other compensation for such injury. In the event that you suffer injury as a result of participation in any research project, you may contact Dr. Justin A. Haegele, at jhaegele@odu.edu or 757 683 5338, Dr. John Baaki, the current chair for the DCOE Human Subjects Committee, at jbaaki@odu.edu or 757-683-5493.

VOLUNTARY CONSENT

The purpose of this form is to inform you about the study prior to participation. By agreeing to participate in the interview, you are consenting to participate in this study. This means, you are saying that you have read this form or have had it read to you, that you are satisfied that you understand this form, the research study, and its risks and benefits. The researchers should have answered any questions you may have had about the research. If you have any questions later on, then the researchers should be able to answer them:

Lindsey A. Nowland: 804 339 7217
Justin A. Haegele: 757 683 5338

If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should call Dr. John Baaki, the current chair for the DCOE Human Subjects Committee, at jbaaki@odu.edu or 757 683 5491.

By checking this box, you consent to participating in this study.

☐

APPENDIX F

Study Two Participant Informed Consent

INFORMED CONSENT DOCUMENT
OLD DOMINION UNIVERSITY

PROJECT TITLE: Physical Educators' Self-Efficacy to Teach Students with Disabilities Across Instructional Placements

INTRODUCTION
The purpose of this form is to give you information that may affect your decision whether to say YES or NO to participation in this research, and to record the consent of those who say YES. This project, Physical Educators' Self-Efficacy to Teach Students with Disabilities Across Instructional Placements, will be conducted via an online survey questionnaire.

RESEARCHERS
Lindsey A. Nowland, MEd, Doctoral Scholar, Department of Human Movement Sciences, Old Dominion University
Justin A. Haegele, PhD, Associate Professor, Department of Human Movement Sciences, Old Dominion University
Zhu Xihe, PhD, Department Chair, Department of Human Movement Sciences, Old Dominion University

DESCRIPTION OF RESEARCH STUDY
The purpose of this study will be to examine to what degree instructional placements for physical education impacts physical educators' self-efficacy towards teaching students with disabilities and the differential influence that the four sources of self-efficacy have on physical educators' self-efficacy across instructional placements for teaching students with disabilities. If you decide to participate, then you will be asked to complete an online survey questionnaire of a total of 35 questions. The survey should take approximately 15-30 minutes to complete.

EXCLUSIONARY CRITERIA
To the best of your knowledge, you should not be under the age of 18, as that would keep you from participating in this study. You should also be currently working as a physical education teacher in a school setting and currently or have previously taught students with disabilities in physical education class.

RISKS AND BENEFITS
RISKS: There are no expected or predicted potential risks associated with participation in this study. And, as with any research, there is some possibility that you may be subject to risks that have not yet been identified.

BENEFITS: There are no expected or predicted potential benefits associated with the participation in this study.

COSTS AND PAYMENTS
The researchers want your decision about participating in this study to be absolutely voluntary. Yet they recognize that your participation may pose some inconvenience. Participants who complete the survey may opt into a drawing for one of ten $25.00 amazon gift cards.

NEW INFORMATION
If the researchers find new information during this study that would reasonably change your decision about participating, then they will give it to you.

CONFIDENTIALITY

The researchers will take reasonable steps to keep private information, such as names and contact information. The researchers will delete/destroy all contact information after data are collected. The results of this study may be used in reports, presentations, and publications; but the researcher will not identify you. Of course, your records may be subpoenaed by court order or inspected by government bodies with oversight authority.

WITHDRAWAL PRIVILEGE

It is OK for you to say NO. Even if you say YES now, you are free to say NO later by not completing the survey. Your decision will not affect your relationship with Old Dominion University, or otherwise cause a loss of benefits to which you might otherwise be entitled.

COMPENSATION FOR ILLNESS AND INJURY

If you say YES, then your consent in this document does not waive any of your legal rights. However, in the event of harm arising from this study, neither Old Dominion University nor the researchers are able to give you any money, insurance coverage, free medical care, or any other compensation for such injury. In the event that you suffer injury as a result of participation in any research project, you may contact Dr. Justin A. Haegele, at jhaegele@odu.edu or 757 683 5338, Dr. John Baaki, the current chair for the DCOE Human Subjects Committee, at jbaaki@odu.edu or 757-683-5493.

VOLUNTARY CONSENT

The purpose of this form is to inform you about the study prior to participation. By agreeing to participate in the interview, you are consenting to participate in this study. This means, you are saying that you have read this form or have had it read to you, that you are satisfied that you understand this form, the research study, and its risks and benefits. The researchers should have answered any questions you may have had about the research. If you have any questions later on, then the researchers should be able to answer them:

Lindsey A. Nowland: 804 339 7217
Justin A. Haegele: 757 683 5338

If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should call Dr. John Baaki, the current chair for the DCOE Human Subjects Committee, at jbaaki@odu.edu or 757 683 5491.

By checking this box, you consent to participating in this study.

☐

APPENDIX G

Institutional Review Board Approval Letter

OFFICE OF THE VICE PRESIDENT FOR RESEARCH

Physical Address
4111 Monarch Way, Suite 203
Norfolk, Virginia 23508
Mailing Address
Office of Research
1 Old Dominion University
Norfolk, Virginia 23529
Phone(757) 683-3460
Fax(757) 683-5902

DATE:	October 4, 2023
TO:	Justin Haegele
FROM:	Old Dominion University Education Human Subjects Review Committee
PROJECT TITLE:	[2107480-1] Physical Educators' Self-Efficacy to Teach Students with Disabilities Across Instructional Placements
REFERENCE #:	
SUBMISSION TYPE:	New Project
ACTION:	DETERMINATION OF EXEMPT STATUS
DECISION DATE:	
REVIEW CATEGORY:	Exemption category #2

Thank you for your submission of New Project materials for this project. The Old Dominion University Education Human Subjects Review Committee has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

We will retain a copy of this correspondence within our records.

If you have any questions, please contact John Baaki at (757) 683-5491 or jbaaki@odu.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Old Dominion University Education Human Subjects Review Committee's records.

VITA

Lindsey Ann Nowland
Human Movement Sciences
2004 Student Recreation Center
Norfolk, VA 23529-0196

EDUCATION

2021-Present PhD, Old Dominion University
Human Movement Sciences
Health & Sport Pedagogy
Concentration: Adapted Physical Education and Activity

2020 M.Ed., University of Virginia
Kinesiology for Individuals with Disabilities
Concentration: Adapted Physical Education and Pedagogy.

2019 BS, Radford University
Exercise, Sport and Health Education
Concentration: Physical and Health Education Teaching.

SELECTED PUBLICATIONS

Nowland, L.A., Haegele, J.A., Zhu, X., Keene, M.A., & Ball, L.E. (2024). What's my value? Visually impaired student reflections about feeling valued in PE. *International Journal of Qualitative Studies in Education.* Advance online publication. https://doi.org/10.1080/09518398.2024.2318295

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