SELF-EFFICACY INFLUENCES OF PRE-SERVICE PHYSICAL EDUCATION (PE) TEACHERS WHO INSTRUCT STUDENTS WITH DISABILITIES (SWDs)

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BY

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SELF-EFFICACY INFLUENCES OF PRE-SERVICE PHYSICAL EDUCATION (PE) TEACHERS WHO INSTRUCT STUDENTS WITH DISABILITIES (SWDs)

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Abstract

The purpose of this study was to analyze what factors contribute to the self-efficacy/teacher efficacy (TE) of pre-service teachers (PSTs) as they instruct physical education (PE) to students with disabilities (SWDs). Self-efficacy theory, SET, (Bandura, 1977; Maddux, 2013) was used to make meaning of what SET tenets the PSTs found valuable as it pertained to boosting their teacher efficacy as they taught physical education to SWDs. Data collection involved three semi-structured interviews, three reflections, one critical incident account (Flanagan, 1954), ten to twelve non-participatory observations of the PSTs teaching PE in an elementary school with SWDs, informal conversations, email communication, and collection of relevant artifacts that pertained to the purpose of this study. Data trustworthiness was established through the use of multiple researchers, triangulation, an audit trail, member checks and the search for negative cases. Inductive analysis (Huberman & Miles, 1994) of the data generated themes pertaining to self-efficacy theory. Derived from SET, data analysis revealed that the PSTs highly value vicarious experiences, mastery experiences, and social persuasion when
considering factors that elevate their TE with SWDs in the PE setting. Implications for Physical Education Teacher Education (PETE) programs are discussed.
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INTRODUCTION

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Prior research shows that teachers’ beliefs and attitudes exercise influential effects on the teaching and learning process alike (Clark & Peterson, 1986; Pajares, 1992). Alderman (2008) provides further that what teachers believe about student abilities to learn coupled with confidence in their own ability to promote learning both equally affect how one teaches. Ultimately, teacher’s beliefs about the abilities of themselves and their students affect student motivation and success. However, while researchers document the importance and impact of teacher beliefs on student motivation and success, scholars (Webb and Ashton, 1986; Klassen et al., 2011; Goddard et al., 2004; Wheatley, 2005; Henson, 2002) write that student motivation has been given much attention in research while teacher motivation has not. It has been an assumption that teachers are motivated by innate skills and materials provided by the workplace and are given all they need by their campus, and administrators to be effective. More specifically as it pertains to teachers and their motivation, Friedman and Kass (2002) explain ‘teacher efficacy’ (TE) is described as a teacher believing how capable they are affecting both student behavior and academic achievement, including students who have difficulties and/or low inspiration for learning. Klassen et al. (2011) provides further that when compared to other disciplines, less TE research has been produced emphasizing physical education (PE) and sport with even fewer studies implementing qualitative research methods. Reviewing TE research as it relates to physical education with students with disabilities, there has been much quantitative inquiry dedicated to pre-service PE teachers as they work with students with disabilities (SWDs). Additionally, Richards et al. (2018) explain PE is a marginalized subject. Pre-service PE teachers grapple with many challenges as they instruct diverse students with an array of learning styles and disabilities and capabilities. Teaching SWDs in a marginalized subject is an additional challenge pre-service PE teachers approach. Considering the daily challenges of PE
teachers and the gaps within TE and qualitative research as it pertains to PE with SWDs, more qualitative research focused on pre-service PE teachers is needed to provide insight to the influences and hinderances of the TE of pre-service PE teachers to further aid in both teacher and student success.

This study was grounded in self-efficacy theory (Bandura, 1977; Maddux, 2013) which examined what different sources within self-efficacy theory influence the Teacher-Efficacy (TE) of pre-service PE teachers as they teach Physical Education to students with disabilities. Findings from this study provide insight to what factors best contribute and prepare pre-service PE teachers’ confidence as they prepare for their career teaching PE to students with disabilities.

**Factors that contribute to the self-efficacy of pre-service APE teachers**

Worldwide, the presence of SWDs in Physical Education (PE) classrooms is common. Due to SWDs existing in PE classrooms, inclusion through attention and services to SWDs needs are also present, as they should be. Each child with a disability is unique and their PE curriculum can vary when compared to typical developing students (TDSs) and even other SWDs.

As pre-service PE teachers are being prepared to work with a range of students, learning styles, and disabilities, they must be knowledgeable, possess high levels of Teacher Efficacy (TE; Friedman & Kass, 2002), and be flexible to best provide instruction that is least restrictive in nature for their SWDs (Bandura, 1997). It is critical that pre-service PE teachers develop strong teacher efficacy to meet student needs upon entry into the teaching profession. There is significant research indicating that teachers’ beliefs and attitudes exercise powerful influences on the teaching and learning process alike (Clark & Peterson, 1986; Pajares, 1992). Berman et al. (1979) define TE as, “the extent to which the teacher believes he or she has the capacity to affect student performance”. There are numerous challenges and realities of the preparation of pre-
service PE teachers coupled with previous and scarce qualitative literature on TE in the United States (Usher, 2009; Ashton & Webb, 1986), especially as it pertains to the PE discipline in general, including pre-service PE teachers who instruct SWDs (Humphries et al., 2012; Klassen et al., 2011). The sources of TE also remain significant and misunderstood (Humphries et al., 2012). Thus, this study aimed to fill the gap within TE research as it pertains to PE and contribute to the opening of qualitative inquiry (Kleinsasser, 2014) around factors (relating to self-efficacy theory) that contribute to the TE of pre-service PE teachers as they teach SWDs by using qualitative research methodology.

**Background and Rationale**

Pre-service PE teachers who will instruct SWDs that are being trained effectively are being taught to not only leave an impact in their classroom with their SWDs, but are also learning to serve as an advocate for SWDs in the general PE setting, the campus and school district as a whole, and to the community as it pertains to supporting and treating individuals with disabilities (IWDs) as capable beings. Well trained pre-service PE teachers who will instruct SWDs with high TEs will have the ability to ensure that their future SWDs are receiving a quality and appropriate PE experience while also supporting their SWDs in all areas of school and life as proficient individuals. While much quantitative research has examined and found exposure and practice with SWDs contributes to TE of pre-service PE teachers (Hutzler, 2005; Gurvitch & Metzler, 2009; Lin & Gorrell, 2001; Hand, 2014; Kleinsasser, 2014), less is known about factors that contribute to the TE of pre-service PE teachers who work with SWDs utilizing qualitative research methods. This study aimed to explore the influences that contribute to the TE of pre-service APE teachers in the Southwest United States through the lens of self-efficacy theory.
CHAPTER 2

REVIEW OF RELATED LITERATURE
**Teacher Efficacy**

The need for further inquiry in TE is supported by research. Several researchers explain there are various areas within TE investigation that merit attention in order for TE research to reach maturity (e.g., Goddard et al., 2004; Henson, 2002; Wheatley, 2005). For example, considering TE research broadly, in 2011 Klassen et al. piloted a review exploring the state of teacher self- and collective efficacy research that was carried out from 1998 to 2009. The authors evaluated 218 empirical manuscripts published in 1998-2009 and compared these to TE studies carried out from 1986-1997. Findings from the review indicated increases in overall teacher efficacy research, methodological diversity, discipline specificity, internationalization, and an emphasis on collective efficacy. It was also revealed that there is a space within TE research as it concerns the sources of TE, constant measurement and conceptual problems, a shortage of data for the association between TE and student results, and vague significance of TE research to educational practice. Particularly relating to PE and sport it was disclosed that when compared to other fields, the amount of TE research studies (n=7) conducted in the 1998-2009 window was rare. Further, it was recorded that there has been inadequate devotion given to the causes of TE. Moreover, when compared to the capacity of quantitative TE studies produced (n=167), the number of qualitative studies (n=19) conducted are narrow. Finally, the authors disclosed that research over student self-efficacy has been given much attention while no related effort has been funded to the area of TE. These findings confirm that there is still much room for growth within inquiry of TE, especially as it pertains to Physical Education and Qualitative research.

**Physical Education Teacher Efficacy**

Existing TE research within PE has primarily employed quantitative designs. Additionally, most recent TE research has also taken place outside of the United States.
Specifically, in 2013, Block et al. developed and utilized the Self-Efficacy Scale for Physical Education Teacher Education Majors toward Children with Disabilities (SE-PETE-D). Later, Alhumaid et al. (2020) used the SE-PETE-D scale to conduct research in Serbia, Greece, Lithuania, China, and Saudi Arabia, to advance inclusive PE programs and expand teacher preparation in these countries. In general, these scholars have found that PE teachers have a greater level of self-efficacy toward physical disabilities than intellectual disabilities, and courses and internships with an emphasis in APE and exposure to SWDs could foster the self-efficacy of all PE teachers.

There is inquiry around the self-efficacy/TE of pre-service teachers (PSTs) increasing after working with students with intellectual, physical, or visual disabilities, employing quantitative research methods, specifically using the SE-PETE-D scale. Hence, Foley et al. (2020) conducted a study in the United States specifically with 18 pre-service PE teachers working with students with visual, intellectual, and physical impairments at a week-long intensive sports camp called, ‘Camp Abilities’. Purposely, the authors used a pre-post study design by having the PSTs complete the SE-PETE-D scale prior to and following camp completion. Paired t-test analysis revealed that during the week-long Camp Abilities for SWDs, the efficacy of the PSTs increased as it related to working with students with visual, intellectual, and physical disabilities. Based on these results, Foley et al. (2020) suggest that teaching and learning experiences that are both sensible and disability focused can be effective in increasing the TE of PSTs when working with children with disabilities.

Similarly, Irish researchers have conducted investigation with physical activity programs pertaining to the TE of PSTs as they instruct SWDs also using the SE-PETE-D scale. For example, Tindall et al. (2016) conducted a study with the purpose of examining the effects of a
ten week-long Adapted Physical Activity (APA) program on the self-efficacy levels/TE of PSTs while teaching individuals with disabilities ranging in age from age 5-21. The APA program took place one hour a week for ten weeks. This study utilized 64 PSTs in their third year of their PETE program at a university in Ireland. Prior to and after PST participation in the APA program, the SE-PETE-D scale was completed. PSTs also participated in four focus group interviews. Repeated-measure ANOVAs were used for data analysis which showed that self-efficacy scores/TE of the PSTs significantly increased after their participation in the ten-week APA program.

From a Saudi Arabian perspective, research has been conducted to examine the TE of PSTs with students with physical disabilities also using the SE-PETE-D scale. Such as, Alhumaid et al. (2021) examined the effectiveness of a six-week intervention program on the self-efficacy/TE of 70 Saudi Arabian PSTs with including students with physical disabilities within the General PE setting. The PSTs were separated into two different groups, each group consisting of 35 PSTs. One group was the experimental group and participated in the intervention program working with SWDs. The other group was the control group which did not participate in the six-week intervention. TE was measured from the PSTs both before and after the six-week intervention using the SE-PETE-D scale. For data analysis, the one-way analysis of covariance was employed and revealed that a significant increase in self-efficacy/TE was established by the PSTs who were involved in the six-week intervention/experimental group. The results of this study support the implementation of interventions allowing PSTs to work with SWDs within Physical Education Teacher Education (PETE) programs.

Researchers have also employed quantitative scales other than the SE-PETE-D providing insight to the factors of TE to PSTs. For example, Humphries & Hebert et al. (2012) developed
their own and different instrument measuring TE using quantitative research methods known as the Physical Education Teaching Efficacy Scale (PETES). This instrument was created based on TE literature, current TE scales, and the National Association for Sport and Physical Education’s Teacher Education Standards. The authors for this study utilized 592 PSTs attending 11 different institutions studying General PE or APE teacher education. The PST participants were also at different stages within their teacher preparation and education. All PSTs completed the PETES survey for data collection for this study. After quantitative data analysis, it was revealed that there were seven different factors contributing to the TE of the PSTs in this study: 1) content knowledge (activities one might teach), 2) applying scientific knowledge in teaching (reflecting academic content), 3) accommodating skill differences, 4) teaching SWDs, 5) instruction (including management, motivation), 6) technology use, and 7) assessment.

From a Korean lens, research has been carried out analyzing the effects of PETE coursework on PSTs’ confidence as they instruct SWDs. Specifically, Koh (2017) studied the effect of APE PETE courses and practicums on the self-efficacy/TE of PSTs toward students with autism and Intellectual Disability (ID) within the General PE setting was investigated. 356 Korean APE students in APE programs participated in a survey which was analyzed using multilevel modeling and revealed that APE PETE courses in addition to practicum teaching experiences did have a significant positive impact on the TE of the Korean PSTs when working with students with autism and ID in the General PE setting. The participants also testified that taking more than 15 APE credit hours significantly improved their TE when working with SWDs.

Later on, investigation was conducted in Korea to analyze the impact of APE/PETE courses coupled with individualized education program (IEP) training on PSTs’ TE toward
SWDs. Specifically, Koh (2021) conducted a study which explored the effect of combining APE PETE courses with IEP training on PSTs self-efficacy/TE toward PE that is inclusive in nature. The author used 227 students enrolled in PETE programs in Korea. The students completed a multilevel modeling survey which was later analyzed using a quadratic growth curve model. The findings revealed that the combination of the APE PETE course with the IEP training did significantly affect the PSTs TE toward inclusive PE when compared with groups who were just enrolled in the APE course or no course at all. The results of this study show that combining the APE PETE course with the IEP training can deliver a supportable educational influence on Korean PSTs TE towards inclusive PE.

From a Chinese perspective, the effects of social support on TE has been examined. For example, Wang et al. (2020) carried out a quantitative methods study with Chinese undergraduate PETE students/PSTs through the lens of the self-efficacy theory. The authors surveyed Chinese students from eight different sports colleges and universities seeking to discover the effect of perceived social support could impact self-efficacy/TE of PSTs who are likely to come across SWDs in their future teaching career. Even further, the authors were investigating the regulating influence of APE studies and internships. Through the use of analysis of variance (ANOVA) of the survey, the authors found that perceived social support did indeed impact the TE of Chinese PSTs when working with SWDs. It was also revealed that APE studies and internships positively influence the TE of Chinese PSTs when working with SWDs. Lastly, it was discovered that APE studies and internships ultimately strengthened the TE among Chinese PSTs who would come across SWDs in their future teaching careers.

Irish researchers conducted a qualitative study observing the impact of exposure to SWDs on PSTs. Thus, Tindall et al. (2015) examined the impact of a ten-week APA program on the
attitudes and perceptions of 64 PSTs concerning teaching children and individuals with physical, intellectual, and learning disabilities. Data were collected through written pre-program expectations, weekly reflection logs, and a final written reflection. Data were analyzed through reading and rereading and by identification of similarities, differences, themes, and patterns. The findings of this study indicate a positive change in both attitude and perception toward both the idea of inclusion and working with individual with disabilities within PSTs. Particularly, pre-program anxieties decreased, confidence flourished, and the benefits of the program design were grasped. The results of this study further support PSTs being exposed to SWDs as a fundamental part of PST teacher education in Ireland.

From a Singapore viewpoint, there was a study that observed the TE of in-service core subject teachers employing self-efficacy theory. For instance, in 2016, a qualitative methods study was conducted by Wang et al. that examined the TE of teachers who worked with ‘low-achieving students’ while also acknowledging the self-efficacy theory and its tenants. However, this study was investigating teachers who taught secondary science or English, not Physical Education pertaining to SWDs. Nevertheless, this study and its findings are still important and can be applied to Physical Education research that emphasizes TE and the self-efficacy theoretical framework. Wang et al. (2015) wanted to investigate the sources of efficacy as reported from five high-efficacy teachers and four low-efficacy teachers. For data collection, the authors conducted interviews with semi-structured open-ended questions. After data analysis, the authors found that in addition to Bandura’s (1986) tenants of self-efficacy theory (i.e., mastery experiences, verbal persuasion, vicarious experience, physiological and emotional arousal) there are three additional non-psychological sources that contribute to high TE: 1) teachers’ knowledge about students, 2) rapport with students, and 3) previous working experiences.
Thus far, American scholars have paid little attention to the sources of self-efficacy/TE of pre-service PE teachers who instruct SWDs. Conducting applicable studies in this topic could help to identify current American pre-service PE teachers’ sources of TE as it applies to the tenets of the self-efficacy theory potentially predicting the effects of these influences of TE for future pre-service PE teachers as they instruct SWDs. Based on these studies, the current investigation can fill the gaps pertaining to inquiry and research methods and hopefully contribute to the development of TE within PE in the United States.

Self-Efficacy Theory

Self-Efficacy Theory (Bandura, 1978 & 1986) provided the theoretical underpinning for this study and informed all steps of data collection and analysis. Albert Bandura (1977 & 1982), defines self-efficacy as an individuals’ confidence in their own capability to complete a particular task. Self-efficacy serves a function through four moderators including: individual cognition, motivation, emotion, and selection. Fuller et al. (2018) record that typically, self-efficacy affects cognitive procedures in numerous ways, such as goal setting, attributable style, and psychological expectations. Stevens et al. (2016) explain that self-efficacy also influences motivation when an individual is met with different tasks, while emotional responses make it more complex. Lastly, self-efficacy can affect one’s choice of environment and behavior (Kang, 2007). Bandura (1978 & 1986) provides that the views of one’s personal efficacy are originated from four primary sources/tenants of information and influence: 1) mastery experience or accomplishments, 2) vicarious experience, 3) social/verbal persuasion, and 4) emotional/physiological states. In 2013, James Maddux suggested a fifth influencer/tenant to self-efficacy and the self-efficacy theory through “imaginal experiences” which as described as the art of visualizing yourself behaving effectively or successfully in a given situation.
Robert and Virginia (2014) explain that due to self-efficacy being a psychological variable, it can affect one’s individual initiative with regard to activities; one establishes this initiative through perseverance and hard work toward attaining their objectives. Hoy (2004) offers that while different from other psychological variables, such as self-esteem and self-concept, self-efficacy is associated to an exact task. Self-efficacy does not refer to one’s overall opinions of self-worth but, rather, to their judgment pertaining to future practice states where they will complete a particular task. One can exhibit a high self-esteem and self-concept by dropping their morals. Bandura (1997) explains that self-efficacy, unlike self-esteem, can push individuals to complete an exact task even if their actions do not meet their criteria. Self-efficacy drastically affects whether individuals feel they are qualified of accomplishing a specific task. Gawith (1995) clarifies that if a being has the capacity to complete a given task, they may fail to be successful if the motivation afforded by their self-efficacy is absent. Thus, self-efficacy is a vital mental encouraging element that affects whether individuals can attain victory and make self-beneficial judgements (Humphries et al., 2012).

Bandura (1986) explains that the most significant source of these beliefs is the understood result of an individual’s mastery experience. Specifically, individuals assess the effects of their actions, and their understandings of these effects help generate their efficacy beliefs. Performances viewed as successful raise self-efficacy of individuals while performances seen as failures lower self-efficacy.

Specifically in this study, mastery experiences, also recognized as performance experiences, relate to previous histories acquired by the pre-service PE teacher (PST). An optimistic mastery experience for a PST could be a victory with a specific disability, skill, or unit instructed with SWDs. This tenet could also impede the TE of PSTs if they have destructive
mastery histories. For example, if a PST possesses no previous triumphs with a student population who possess a specific disability, it is probable the unfortunate mastery experience may thwart the TE of the PST.

Social/verbal persuasion pertains to coaching and feedback offered to the PST. This tenet of TE can come in the shape of coaching or feedback relating to teaching SWDs. This advice can come from colleagues, administrators, professors, or even parents of students whom the PST instructs. Encouraging social/verbal persuasion can contribute to TE while destructive criticism can hinder the TE of PSTs.

Vicarious experiences pertain to contact with observed experiences or modeling by others. Particularly in the PE setting, vicarious experiences can come in the shape of watching peers, colleagues, or even professors delivering a lesson with SWDs. If PSTs have constructive recollections of observing peers or professors being successful with SWDs in the PE setting, it is probable their TE will be facilitated. However, if the PSTs have negative vicarious exposures to their peers executing instruction poorly with a particular disability or skill, it is expected their TE will be affected poorly.

Physiological and emotional arousal relate to PSTs undergoing physical and emotional sensations. Specifically in the PE setting, one way PSTs experience encouraging emotional stimulation is when they hold good rapport with SWDs constantly. As a result, PSTs’ feelings are positively affected leading to a greater self-assurance with SWDs. PSTs may also be exposed to unfortunate emotional arousal. For example, if a SWD is continuously bad-mannered and closed off to the PST, it is probable the TE of the educator may be hindered. Physically, PST’s TE can be affected positively in the PE classroom if they are gaining advantages to their physical health as a result of being involved physically with their SWDs. Nevertheless, if PSTs are
physically stressed as a result of participation with their SWDs, it is likely their TE will be lessened. For example, if PSTs are frequently being harmed physically by their SWDs (i.e., a student diagnosed with a severe cerebral palsy is continuously hitting the teacher), it is possible the PST’s self-confidence with SWDs will be endangered.

Imaginal experiences relate to PSTs visualizing themselves being effective teachers with SWDs in the future. Particularly in the physical education setting with SWDs this could be a PST preparing a lesson for students who are diagnosed with autism the following day and imagining the lesson going well. Imaginal experiences can also be long term in nature. For example, a PST may foresee themselves being better prepared and self-assured after five years of teaching physical education to SWDs which will allow them to picture themselves as more fruitful in the future due to collected experience and practice. If teachers are able to see themselves being successful in the future with SWDs (both short and long term), it is expected their TE will be raised. However, if PSTs cannot imagine themselves attaining victory in the near- or long-term future, it is expected their TE will be negatively affected.

While some research measuring the self-efficacy of PSTs in special education or education emphasized for SWDs (Coun et al., 2019; Baskaran et al., 2019; Wu et al., 2020; Freire et al., 2019) more is needed within PE as it pertains to pre-service teachers who instruct SWDs. The current study aims to provide insights into this and begin to fill this gap in the literature.

**Purpose and Research Questions**

Grounded in self-efficacy theory (Bandura, 1977), the proposed study aimed to explore the factors that influence the self-efficacy of pre-service physical educators who instruct SWDs. The research questions guiding this study were as follows:
1) What and how do mastery experiences contribute to the self-efficacy pre-service PE teachers who instruct SWDs?

2) What vicarious experiences contribute to the self-efficacy of pre-service PE teachers who instruct SWDs?

3) What social persuasions contribute to the self-efficacy of pre-service PE teachers who instruct SWDs?

4) What emotional and physiological states contribute to the self-efficacy of pre-service PE teachers who instruct SWDs?

5) What imaginal experiences/visualizations contribute to the self-efficacy of pre-service PE teachers who instruct SWDs?
This study employed a basic interpretive design following Merriam & Tisdell (2016) and Patton (2002). The overall purpose of this type of design is to "understand how people make sense of their lives and their experiences" (Merriam, 2002, p. 24). More specifically, Crotty (1998) offers that meaning is not discovered but constructed and that individuals construct meaning as they engage with the world they are interpreting. Worthington (2010) notes that a basic interpretive design can be used to uncover strategies, techniques, and practices of highly effective teachers and administrators. Such insight is not possible with quantitative approaches. By making meaning of people’s lives and experiences, the basic interpretive design is also inductive in nature by analyzing patterns and themes within qualitative data. This specific design also utilizes forms of data collection such as interviews, observations, and the analysis of important documents. By being naturally inductive and utilizing qualitative data collection, the basic interpretive design allowed this study to gain insight about the factors that contribute to the TE of PSTs as they instruct SWDs.

**Participants and Setting**

Participants included in this study were purposefully selected pre-service PE teachers (n=4) from a large public University located in the Southwest region of the United States. The purposefully selected pre-service PE teachers were enrolled in one undergraduate Adapted Physical Education PETE course with a teaching and field work experience with SWDs at a charter elementary school for students with hearing impairments in the Southwest United States. Along with students with hearing impairments, the charter elementary school used for field work experience for this study also possessed students with other varied disabilities (e.g., spina bifida, cerebral palsy, down syndrome, intellectual disability, autism, etc.). Additionally at the charter
school, American sign language (ASL) was employed alongside English and ASL interpreters for all academic instruction, including physical education.

Following institutional review board (IRB) approval, the consent form was read to the participants following a class meeting. The students listened to the script then decided if they were interested in participating in the study. Students were provided the opportunity to ask the Principal Investigator (PI) (the lead researcher of the study) or student researcher questions (facilitator of data collection, PETE doctoral student) before deciding whether to participate and were be assured that their decision of whether to participate had no bearing on their course grade or status in the course. Any students who wanted to participate in the study were then given a consent form to sign. Participants were then told that they can either complete the consent form on site or return it later to the PI or student researcher if they want to think about whether to participate or not first. The PI and/or student researcher were available during and after class to answer questions about the consent form and the research process more generally. The instructor of record for the PETE undergraduate course in which pre-service PE teachers are being recruited was not present during participant recruitment and had no knowledge of which students chose to participate until after the course was completed for the semester and final grades were posted.

**Data Collection**

Data sources used for this study included: 1) three face to face semi-structured interviews with pre-service PE teachers, 2) three reflections (via email) in the form of journal entries with writing prompts, 3) two non-participatory observations a week for eight weeks with informal conversations grounded in self-efficacy theory, 4) relevant documents and artifacts, 5) email
communication, and 6) one critical incident account. These six sources of data collection contribute to triangulation by utilizing multiple data sources (Merriam, 2009).

*Semi-structured interviews*

All PSTs were asked to participate in three individual interviews that lasted approximately one hour each and took place outside of regularly scheduled class time. The interviews were conducted face-to-face following a semi-structured interview guide grounded in the self-efficacy theory (Bandura, 1977; Maddux, 2013) designed to answer the research questions for the study. For example, the first interview was focused on the background of the teacher, the PST’s teaching philosophy, the PST’s teaching placement, and then current, past, future sources of TE the PST feels supply to their personal TE. An example of a question from interview one for this study comprises, “Tell me a little bit about yourself as a pre-service PE teacher, your background, your path up to now, and any experience you’ve had working with students with disabilities”. Interviews were audiotaped and transcribed verbatim for analysis. All identifiers were removed from the transcripts and participants were given a pseudonym. The student researcher conducted the semi-structured interviews for the participants. The semi-structured interviews were conducted once IRB approval was gained. Interviews were recorded and immediately de-identified with pseudonyms for names, location, and school. (See figures one through three for the semi-structure interview questions used in this study).

*Reflections*

Reflections took place in the form of journal entries with writing prompts assigned by the student researcher. All teachers were asked to answer three reflection prompts via email once IRB approval was gained. Reflections took the participants approximately 30 minutes to complete each prompt. Participants were asked to write/type their responses and return to the
student researcher at their convenience. Writing prompts for reflections were grounded in self-efficacy theory and were focused on sources that contribute to the TE of the PSTs. With each writing prompt, PSTs were informed of the meaning of TE and the tenets/sources of self-efficacy theory prior to being provided the reflection assignment. One example of a question from a writing prompt for this study includes, “What experiences currently in your teacher preparation program (i.e., this can be courses, classwork, teaching placements, professors, observations) are contributing to your sources of TE? How? What is going on currently and what factors are at play? Another writing prompt/question includes, “Of the experiences you mention that contribute to your TE, what sources/influences from self-efficacy theory do your experiences fall into?”. (See figures four through six for the reflection prompts used in this study).

Critical incident account

One critical incident account (CIA; Flanagan, 1954) was completed by each PST through the use of a writing prompt and journal entry sent from the first author. Chell (1998) provides that the critical incident account (CIA) is a qualitative interview technique which supports the inspection of significant incidents (events, incidents, processes, or issues) acknowledged by the participant, the way they are managed, and the results in terms of observed results. The aim of the CIA is to spread understanding of the incident from the viewpoint of the participant while also recognizing cognitive, affective, and behavioral influences of their experiences. Each critical incident account was employed to increase insight of events that influenced the teachers’ growth of TE. Critical incident accounts were executed individually and pre-service PE teachers returned the CIA via email to the student researcher. For example, the critical incident account prompt read: “Think of a time/experience that significantly impacted your Teacher Efficacy (TE) positively as a pre-service teacher as you work with students with disabilities. Tell me everything
you can remember and paint me a picture. Make me feel like I’m there: tell me who was there, who said what to whom, what you did, and how you felt. Also tell me why this event/incident was so significant. Writing style/quality is irrelevant. What matters most is how much you describe, tell, and how much you go into why this event was so significant”. Critical incident accounts will be executed individually and pre-service PE teachers will return the CIA via email to the primary researcher. (See figure seven for the critical incident account prompt used in this study).

Non-participatory observations and informal conversations

All pre-service teachers were observed by the outside student researcher who also collected field notes to document PST teaching behaviors, interactions with students, body language, and any other action or behavior that spoke to the purpose of the study. The observations and fieldnotes took place two times a week for the entire study until saturation was reached. After each observation the teacher observational and field note data were collected as relevant for additional information. Further, through informal conversations between PST and researcher, after each observation the PSTs were asked which of the five sources from self-efficacy theory contributed to their confidence as they instructed SWDs that day. PSTs were also asked which of the five sources from self-efficacy theory would contribute further to their TE in the future as they instruct SWDs.

Relevant documents and Email communication

Documents and artifacts included a journal of activities delivered during PE classes, reflections of lessons related to success and areas of improvement regarding factors that contribute to TE. Other related documents collected were lesson plans and any resources applied during classes, and any other information that is valuable to the participants that relates to the
research questions. Email communication with any/all participants were collected in instances when applicable to the purpose of the study and communication that speaks to the research questions.

**Data Analysis**

Data were analyzed inductively following Merriam & Tisdell’s (2017) four steps process involving: open coding, axial coding, categorization, and theme development. Merriam (2009) provides insight concerning the inductive research process offering researchers collect data to construct ideas, assumptions, or philosophies rather than deductively challenging hypotheses compared to what takes place in positivist research. Inductive research focuses on casualty and testing theory, while inductive research aims to generate theory from data collected (Williams & Moser, 2019).

The principal investigator and student researcher conducted two phases of coding: open and axial coding (Strauss & Corbin, 1990). Open coding was conducted first following Williams and Moser’s (2019) description: “Open coding is the first level of coding and that in open coding, the researcher is identifying distinct concepts and themes for categorization”. During open coding, individual pieces of data were labeled with a word or phrase that best represented the passage or expression. Following this, the second level of coding, axial coding, occurred. Axial coding consisted of coding clusters of open codes to portray the analysis more precisely in the data collection. After axial coding, categories were generated based on concept construction (inductive reasoning) and the research questions and the theoretical framework (deductive reasoning) employed for the study. The categories constructed from axial coding operated as themes. Quotes from data collection that illustrate themes were pulled and displayed using a pseudonym for the participant who provided the quote.
Trustworthiness and Credibility

Data trustworthiness, credibility and rigor were established using the following strategies: the use of multiple researchers, data triangulation, an audit trail, the search for negative cases, and member checking. Data sources and researcher triangulation were achieved by implementation of six data sources (i.e., reflections, CIAs, semi-structured interviews, non-participatory observations and informal conversations, relevant documents, email communication) and two researchers (Lincoln & Guba, 1985). Flick (2018) explains that the concept of triangulation was conceptualized by Denzin in the 1970s. An audit trail, as suggested by Lincoln and Guba (1985), was implemented to, “describe in detail how data were collected, how categories were derived, and how decisions were made throughout the inquiry” (Merriam, 2009, p. 223). Next, the search for negative cases was executed. The Qualitative Research Guidelines Project defines the process of ‘searching for negative cases’ as, “This (searching for negative cases) involves searching for and discussing elements of the data that do not support or appear to contradict patterns or explanations that are emerging from data analysis” (p. 223). Finally, a member check was conducted after data were collected and analyzed to confirm that the researchers are portraying the experiences of the participants accurately. Flick (2018) defines a ‘member check’ as, “an assessment of results (or of data) by asking the participants for their consensus.”
CHAPTER 4

RESULTS
The purpose of this study was to explore the factors that influence the self-efficacy of pre-service physical educators who instruct SWDs. Analysis of the data revealed several experiences and factors influenced the PSTs efficacy toward teaching SWDs. Overwhelmingly, the PSTs in this study described that previous experiences (prior to the APE course in which the study was focused) provided important sources of knowledge and information that supported them in feeling comfortable in teaching SWDs. The PSTs explained that both vicarious experiences and feedback contributed to their efficacy as they used both of these sources when engaging in reflection in order to enhance their preparedness for subsequent lessons and teaching experiences.

**Previous personal and professional experiences contribute most to confidence**

The first and most dominant theme to emerge from the data was that previous personal and professional experiences contributed the most to the teacher efficacy of the PSTs as they instruct SWDs in the physical education setting. For example, the PSTs in this study describe that having prior experiences that are both personal and professional in nature aided their confidence as teachers because it provided situations to refer back to while teaching as opposed to arriving to a lesson with no prior related experiences. Further, the previous experiences boosting the PSTs’ TE allowed the participants to feel somewhat seasoned and experienced in comparison to feeling completely like a novice teacher.

**Previous professional and personal experiences**

The PSTs in this study described how experiences prior to their enrollment in the PETE program supported their comfort and confidence in teaching SWDs. Experiences where they had the opportunity to interact with children, provide instruction to groups of learners, For example, personal training (for both children and adults with disabilities), serving as a pre-school teacher,
coaching soccer to athletes with disabilities, previous athletic participation, engaging in personal fitness, possessing a sibling with a disability, and even serving as a supervisor for adults in previous professional positions. The PSTs believed that these experiences aided their TE as they found similarities in the roles and duties of these positions that they drew upon when teaching physical education to SWDs.

About this, Ashley wrote the following reflection entry:

I trained a client that was wheelchair bound her whole life. Learning what works for her and makes her comfortable and asking questions to help me be a better trainer for her transfer to skills needed when working with students with disabilities. (Reflection 1)

Ashley also described how her previous experience as a pre-school teacher provided her with confidence:

I've done preschool teaching, so that just in kind of like classroom management situations to like be specific about that part that has helped contribute to today to my personal teacher efficacy and just having that confidence. (Interview 2)

Ashley described how working with students with unique home lives in a fitness setting adds to her confidence as she instructs SWDs in the PE classroom:

And then I also did in my past with personal training. So, with that I've also worked with kids for kid fitness. We called it Kid Fit was the class, and it was just like a little program that I would do, and it would last six weeks, and it was once a week, and it was forty-five minutes and sometimes depending on the numbers. I'd have five, five to eight, five-year-olds to eight-year-olds, and then eight-year-olds to twelve-year-olds. So, it just kind of depended the eight-year-olds, like if they were on the mature end, or if they were on the more immature end of spectrum and a lot of those kids definitely had things that made
them different than your normal kid. So, I think a couple of them were in like the foster system that would come. So, they were very different than your typical kid that would be participating in a fitness. So, we play whatever the fun PE games I’d make the fitness fun. So, with that experience it's, and I was on my own doing that So it was just like trial and error what worked what didn't work, and then kind of change it and go from there. So that experience with students who aren’t typical in nature plays a part in where I’m at currently with my teacher efficacy. (Interview 2)

Similar to Ashley, Nancy mentioned how being in a supervisory role in a different profession helped her feel more confident working with SWDs:

I do not have any coaching or certifications in the past but I do have experience in the military with 12 years of being Security Forces and held a bunch of certifications like Medical and supervision, so this helps with supervising the students in the class. My past experiences are a contributor to my teacher efficacy since I have the experience and even though I did not supervise students, I supervised people that needed guidance and direction.  (Reflection 2)

Some of the PSTs describe performing coaching and instruction and that these experiences clearly and directly transferred to their teaching SWDs. Two reflection entries by Aidan illustrate this:

Because of my history in soccer and coaching, when I started PE and went into the classroom, my projection voice was already developed. I already had methods for gaining attention or projecting my voice in a way that was commanding and demanded attention. These tools were immensely helpful in the classroom and definitely gave me a leg up. (Reflection 2)
I coached soccer for about 2 years before I joined the PETE program. The experience I gained in handling children and projecting my voice as an authoritative figure really helped me get a leg up when I went into schools and started teaching. I also gained tons of fun little games and strategies to keep students occupied, and because of this my TE definitely benefited positively. (Reflection 1)

Aidan shared that youth sport experience and being physically fit contributes to his confidence further as a PE teacher:

Participating in youth sports all the way up until college and using that experience to maintain my physical fitness helps me feel like a legitimate PE teacher. Because I am physically fit and I know how to keep myself fit, I feel like it adds legitimacy to what I am teaching. (Reflection 1)

Noelle described how past experiences as an athlete aids her confidence:

I am well knowledgeable in volleyball, basketball, softball due to playing high school sports. So when teaching these units, I feel confident I can deliver a quality physical education lesson. I also feel confident that I can teach students what I learned from the coursework and previous experience and modify it into a lesson. (Reflection 1)

PETE coursework and field experiences

PSTs in this study described the significance of PETE coursework they had completed prior to the study (and the APE course and field experience) as a source that supported their developing TE. They listed PETE course work and textbooks relevant to teaching APE, general PETE coursework, and field experiences as contributing to their efficacy in teaching students with disabilities. For example, Aidan wrote the following in his first reflection entry:
Overall, every class I have taken in the PETE program has helped contributed to my TE. The field experiences we have had, the course work, making lesson plans, and consistent feedback from almost every individual that is in the program has been immensely helpful in contributing to my confidence as a physical educator. (Reflection 1)

He goes on to describe how field experiences with SWDs were more influential to his confidence than course readings and textbooks:

My current teaching placement in the APE class is something that has been invaluable to my TE. The experience of teaching students with disabilities is something that is so important and I am grateful that as a part of this program I get real experience in teaching and adapting to a classroom like that. Without a field experience like this, I really do not think I would be nearly as confident as a teacher compared to if I just read the textbook and got no real practice with the strategies. (Reflection 1)

Noelle explains how applying content from her PETE APE course within the field experience setting enhances her TE:

I am currently at a teaching placement at the Sign Language Academy. Here, I am putting what I have gained so far in course work to a real-life work setting. I am definitely happy that the course (Adapted Physical Education) really helps me out a lot more here. At this placement, I engage with students with disabilities in each class period. The course enabled me to learn more about the types of disabilities as well as how I can modify a PE lesson to their needs. (Reflection 1)

This PST elaborates how he values his past hands-on experience with SWDs and working with interpreters. Each experience he had was a building block for the next experience which ultimately provided confidence for him.
At first I wasn’t super comfortable with it, because I didn’t know how to approach it. I was scared of messing up. I was scared of ruining a kid’s day because I moved in the wrong way, or I said the wrong thing. Doing it once or twice, and going through it and building on the past. Experiences really built up my confidence, and working with these kinds of students (SWDs) and and the interpreters, and the years in the class and how to approach them, and the kind of working relationship we need to have to make a functional pe classroom. (Interview 2)

**Observations of effective teaching behavior with SWDs**

The second theme to emerge from the data was the importance of observing others enact effective teaching behavior with SWDs. All of the PSTs expressed that when they had the opportunity to see PETE faculty modeling the instruction and delivery of modifications to tasks for SWDs, these observations provided a blueprint that they would use and attempt to replicate in later teaching episodes. The PSTs also mentioned that observing their peers provided similar examples which allowed them to have multiple strategies to try to emulate or draw upon in subsequent lessons.

To illustrate how vicarious experiences contribute to the TE of PSTs, consider the following:

Always playing off of the lessons I did last time, and that sort of thing every time I see my peers teach, or if I’m in an education class, and I see one of those teachers discuss a teaching method or a way they taught, or even coaching, seeing the way the other coaches that I’m around the way they coach, the way they address the players, or set up a drill, or or x y and z , I mean all of it. I feed off of it. I’m like if I see that a way that one of my co coaches is setting up a drill and the players obviously hate it. I’m like, Okay,
Well, don't do that. Just little things like that all the time really help aid in the educational instruction I give and the way I deliver it. (Interview 2)

Aidan explains how past experiences vicarious experiences have really been beneficial for his teaching journey pertaining to instructing SWDs. His vicarious experiences provided him foundations to build off of when instructing SWDs:

And then it also really helped watching for those first couple of weeks watching my coordinating teacher teach those classes, and I was able to observe and model my approach and behavior to teaching these kinds of students by watching that (the coordinating teacher) for the first couple of weeks, and that was really helpful. And when I got started, and kind of the platform I was able to build off of (Interview 2)

Nancy explains that observing one of her PETE professors perform teaching strategies followed by her modeling the tactics shown boosted her TE:

I would say, vicarious experience (fuels her TE). For example, Observing experiences or modeling by others. Specifically, I was taught by Dr. Z. Dr. Z would show us strategies to use for teaching in general through our lab days. Those vicarious experiences helped me with my teacher Efficacy, just by just Dr. demonstrating those teaching strategies to us as well. Dr. Z would model the strategy and then I would model after her. We would model after her because she would say, repeat this, or repeat that Dr. Z modeled when to line up the students like she taught us. She modeled lining students up by their favorite color, by their birth dates if they know it. Dr. G also modeled strategies for distributing equipment to students as well. (Interview 2)

Noelle explains that observing her peers learn through trial and error helps her to reflect on what practices will be best for her:
vicarious experiences (fuels her TE). I really like to pretty much watch how my peers teach, and I take what worked well, and what didn’t work well for students pertaining to me peers’ teaching. I reflect my teaching experience based off of my peers’, and what I can do to better myself. (Interview 1)

**Feedback from valued sources as a positive contributor to TE**

The third theme to emerge from the data was the feedback from valued sources as a positive contributor to TE as the PSTs instruct SWDs. All of the PSTs expressed that social persuasion/feedback contributed to their teacher efficacy as they instruct SWDs. The PSTs valued feedback from professors, cooperating teachers, and their peers. Conversely, PSTs expressed that feedback from sources whom they did not view as credible could potentially mitigate their efficacy. To illustrate how feedback contributes to the TE of PSTs, consider the following:

Then, after every class getting feedback from coordinating teachers and the other students that i’m teaching with is great. It's like, hey! The way you talked really loud and got the students organized in that line, using the cones, the way you did that was really good. You should use that again. You're like, okay, you know what that was really good. I will use that again, or maybe, you know the way you organize those cones was way too close to the loud noises of the street. They're kind of distracted. Maybe, move it a little further next time, you know. I didn't even pick up on that, because I was so busy focusing on the kids. Thank you for bringing that to my attention. Boom! I can build. I can build on that. I can build myself up. (Aidan Interview 1)
Aidan explains how he values feedback from classroom teachers and paraprofessionals when working with SWDs in his field experience teaching placement. He finds the feedback from these individuals pertinent and sees it motivating him as he works with SWDs:

(Feedback from) the educational assistants and the teachers of the classroom (aids his TE), You know, if I do something wrong, or if I maybe move my hands in the wrong way, and I hold up a sign that means something else that they give me feedback, and they tell me they're like, hey, (referring to use of American sign language for students with hearing impairments) You know, if you hold up three in the middle, that means W, so make sure it's the your thumb and the first three fingers things like that, or silent clapping and here's how you can do it, and stuff like that. So that's super helpful, and that feedback back and forth between their actual teachers and the interpreters to me is super essential. (Interview 2)

Aidan elaborates how feedback from an outside perspective provides him clarity on how one of his lessons really went compared to how he thinks he performed personally:

I think feedback is always important and pretty much anything you can really do. You know it’s always important to get objective feedback and have someone be able to tell you their perspective. Maybe you thought that lesson went awful. Maybe like this is the worst lesson I've ever taught. Everything was everywhere. I feel so bad about that. I'm really like that (lesson he taught) was one of the worst. I like having objective feedback. With objective feedback I’ve been told, you know it (the lesson he taught) really wasn't that bad. You're beating yourself up over this, and in all reality it's probably like middle of the road. You probably had worse lessons, but maybe you had a better day that day, and your view of the lesson was skewed because of the experiences you had. So, I think
it's important to be able to get the objective feedback of what was actually not that bad, or maybe it wasn't that good. You might have thought you just taught the best lesson ever, and you could have done this way better. You did this one thing that was not appropriate for what you're supposed to be teaching. Maybe you had five kids sitting the whole time because you weren't paying attention to stuff like that. (Interview 1)

Aidan provides further how regular feedback from his PETE program (i.e., professors and classmates) has helped aid his TE:

Consistent feedback from almost every individual that is in the program (PETE program) has been immensely helpful in contributing to my confidence as a physical educator. (Reflection 1)

Aidan explains how conversation and feedback from his peers has been one of the most valuable tools shaping his individual teaching style, which fuels his TE further:

“Talking with them (peers) about my ideas and getting their feedback has been one of the most important resources when it comes to my current teaching style. (Reflection 3)”

Ashley offers that social persuasion motivates her to continue forward when being a teacher is difficult:

“Social persuasion (aids her TE), just getting that feedback from others is just extremely helpful. And gives me a sense to continue. (Ashley Interview 3)”

Just as the PSTs value and apply positive feedback to their teaching as they instruct SWDs, the PSTs also revealed that negative feedback from people they do not respect or value can potentially hinder their TE. The PSTs also mentioned not having social persuasion in the form of feedback at all (once they become in-service teachers) could also hinder their TE. For example:
Noelle explains how lacking social persuasion in the future as an in-service teacher could possibly hinder her TE while also forcing her to be more independent as a teacher when it comes to instructing SWDs:

(She predicts lacking social persuasion in the future as an in-service teacher may hinder her future TE) I would probably say social persuasion. Right now, I'm heavily relying on feedback from my peers and professors. In the future, being on my own, I won't be able to have that (feedback). So it's just self-reflection as feedback in the future. I pretty much would have to learn how to be more independent. (Interview 3)

Aidan offers that just like there are bad coaches, there is also bad feedback provided sometimes. Aidan feels poor feedback has the potential to hinder his TE:

You know there's such thing as bad coaches, so bad feedback, bad performance experiences and stuff like that could definitely hinder uh what I think about teaching and what I think about a lesson and um stuff like that. So uh, I think exclusively, I would say physical and emotional states and social persuasion would be the only two that I think could hinder (my TE). (Interview 3)

Lastly, Aidan provides that altogether, mastery/performance experiences, vicarious experiences, and social persuasion/feedback provide him a ‘backbone’ as a teacher:

Most of my experiences throughout my current teaching career fall into performance experience, vicarious experience, and social persuasion. I am very much a visual learner, so watching others practice good PE helps me develop my own teaching styles, when I get feedback, I love to implement is and see how it helps, and finally all the curriculum I have learned has given me a solid backbone for my current teaching practices.

(Reflection 3)
Conclusion

Data from the PSTs reveal that there are previous personal and professional experiences aiding the TE of PSTs. Past professional experiences took place within and outside of PETE. Past non-PETE professional and personal experiences consist of careers prior to entering the PETE program, exposures to SWDs and individuals outside of PETE, and personal experiences as an athlete. Previous PETE professional experiences such as PETE coursework pertaining to all courses in the PETE program, including the APE course which focuses on disabilities and modifications applied in the PE setting aided the TE of the PSTs. Field experiences, another professional past experience supplying TE, consisted of the APE experience in the PETE course for this study along with general PE field placements in other courses in the PETE program. Next, data also revealed that social persuasion provided to the PSTs in the form of coaching and feedback from peers, professors, coordinating teachers, and administrators also aided the TE of the PSTs. Additionally, data revealed that inaccurate feedback may compromise TE of PSTs. Hindering feedback came from individuals the PSTs may not respect or value. Lastly, data also revealed that vicarious experiences boosted the TE of the PSTs. When the PSTs observed peers, instructors, professors, coordinating teachers, and administrators teach SWDs, this was a source that enabled the PSTs to feel more confident as they instruct SWDs because they had an experience of good modeling and teaching to reflect on and apply to their own teaching.
Through the lens of self-efficacy theory, the current study aimed to contribute to the literature by investigating what factors contribute to the TE of PSTs who instruct SWDs. Altogether, self-efficacy theory (Bandura, 1977; Maddux, 2013) offers that there are five sources (i.e., mastery experiences, vicarious experiences, social persuasion, emotional and physiological states, and imaginal experiences) fueling the self-efficacy of individuals. In order to fill gaps within the TE literature, this study sought to identify what additional sources fuel the TE of PSTs as they instruct SWDs alongside of what the present literature already states: mastery experiences aid the confidence of PSTs as they teach PE to SWDs.

**Mastery experiences**

Bandura (1986) provides that the most significant source from SET is the understood result of an individual's mastery experience. Specifically, individuals evaluate the effects of their actions, and their understandings of these effects help generate their efficacy beliefs. Performances viewed as successful raise self-efficacy of individuals while performances seen as failures lower self-efficacy. Specifically in this investigation, mastery experiences, also viewed as performance experiences, correlate to previous histories obtained by the PST.

Answering research question one and consistent with previous research, data indicated that the TE of the participants was elevated as they instruct SWDs in the PE setting due to their mastery experiences. In this study, data revealed that mastery experiences fueling the PSTs TE consisted of experiences both prior to entering their PETE program (i.e., possessing and assisting a sibling with a disability, serving as a soccer coach, serving as a personal trainer to individuals with disabilities, exposure to individuals with disabilities) and during their PETE program (taking a PETE course aimed at instructing SWDs along with field experiences teaching SWDs). The mastery experiences from the data that boost TE of the participants relate to Bandura’s
definition of mastery experience by being past experiences that were successful and aid in the confidence of the PSTs as they instruct SWDs. Bandura’s conception also documents that successful past experiences elevate one’s confidence. Other TE literature also document the positive influence of mastery experiences through APE PETE courses and field work experience with exposure to SWDs has on PSTs as they instruct SWDs.

As conducted in some literature, this study did not examine the degree to which mastery experiences in the form of exposure to SWDs at an adapted physical activity (APA) sports camp for SWDs (Foley et al., 2020; Tindall et al., 2015) impacted the TE of this PSTs. However, it could be hypothesized that if the PSTs of this study were exposed to SWDs through an APA sports camp, their TE would be elevated as a result of the mastery experience due to the findings of this study and others. Similarly, the results of this study highlight that exposure to SWDs (mastery experiences) were valued and played a role in aiding the TE of the PSTs like in other studies addressed earlier (Wang et al., 2020; Koh, 2021; Alhumaid et al., 2021; Koh, 2017; Tindall et al., 2016; Humphries & Hebert et al., 2012). Parallel to other studies discussed earlier (Wang et al., 2020; Koh, 2021; Koh, 2017; ), this project also revealed the positive impact of PETE coursework with an APE focus on the TE of PSTs as they instruct PE to SWDs. Additionally, like other researchers also found (Wang et al., 2020; Alhumaid et al., 2021; Foley et al., 2020), data from this investigation also revealed the importance of exposure to SWDs though field experiences in a PETE program as it concerns the TE of PSTs.

Specifically comparing and contrasting past research to this project, the most central theme to arise from the data of this study was that previous personal and professional experiences aided the most to the teacher efficacy of the PSTs as they instruct SWDs in the physical education setting. For instance, the PSTs in this study explain that having previous
experiences that are both personal and professional fueled their TE because it afforded situations
to refer back to as an instructor as opposed to being immersed in the PE setting with SWDs with
no prior related experiences. Additionally, the previous experiences boosting the PSTs’ TE
allowed the participants to feel experienced to a degree which ultimately fueled their TE. The
findings of this study differ from those in past literature because this study acknowledges all past
experiences within PETE and outside of PETE as potential factors that can aid one’s confidence.
Prior studies only acknowledge past experiences within the PETE program as contributors to TE.

Altogether, the findings of this study are similar to previous TE literature because this
study does also acknowledge previous professional mastery experiences (i.e., field experiences
with SWDs and PETE coursework targeted at APE) as a contributor to one’s TE. In other
studies, conducted, it is also recognized that field experiences, APE PETE courses, and exposure
to SWDs do benefit the TE of PSTs. However, this study differs from past literature in that it
acknowledges the importance of all exposures and experiences (i.e., personal and professional
experiences inside and outside of the PETE program) elevating the TE of PSTs as they instruct
PE to SWDs.

Vicarious experiences, social persuasion, emotional/physiological states, imaginal
experiences

According to Bandura (1986), vicarious experiences correlate to contact with observed
experiences or modeling by others. Particularly in the PE setting, vicarious experiences can come
in the form of watching peers, colleagues, or even professors delivering a lesson with SWDs. If
PSTs have positive memories of observing peers or professors being successful with SWDs in
the PE setting, it is likely their TE will be aided. However, if the PSTs have destructive vicarious
experiences to their peers implementing instruction inadequately with a particular disability or
skill, it is expected their TE will be affected negatively. Pertaining to this study, data showed that vicarious experiences are valued by PSTs (answering research question two). The findings of this study relate to Bandura’s meaning of vicarious experiences because the PSTs valued vicarious experiences from peers, colleagues, and professors. Due to possessing vicarious experiences, the PSTs had a higher TE.

Bandura (1986) offers that social/verbal persuasion relates to coaching and feedback offered to the PST. This tenet of TE can come in the shape of coaching or feedback provided to the PST as they teach SWDs. Bandura explains encouraging social/verbal persuasion can contribute to TE while destructive criticism can hinder the TE of PSTs. Specifically in this investigation, data revealed that social persuasion elevates PSTs’ TE as it comes from peers, professors, administrators, etc. (answering research question three). The findings of this study relate to Bandura’s definition of social/verbal persuasion because the PSTs valued feedback from their peers, professors, and colleagues. As a result of receiving valuable feedback, the PST’s felt more confident when instructing SWDs.

Bandura (1986) elaborates that physiological and emotional arousal correlate to PSTs feeling physical and emotional sensations. Further, Bandura offers that if one possesses positive physical and emotional states, one’s self-efficacy can be boosted. Concerning emotional and physiological states in this study, the tenet was valued, but did not hold the impact on TE that mastery experiences, vicarious experiences, and social persuasion held. The findings of this study relate to Bandura’s definition of physiological and emotional states because the PSTs valued possessing positive physical and emotional states. The PSTs felt the presence of positive physical and emotional states boosted their confidence.
Maddux (2013) offers that imaginal experiences relate to PSTs visualizing themselves being effective teachers with SWDs in the future. Additionally, Maddux provides that if one is able to visualize themselves being successful, their self-efficacy will be elevated. Concerning imaginal experiences in this study, the tenet was valued, but did not hold the impact on TE that mastery experiences, vicarious experiences, and social persuasion held. The findings of this study relate to Maddux’s definition of imaginal experiences because the PSTs valued being able to visualize themselves in success as they taught PE to SWDs. These positive visualizations boosted the TE of the PSTs.

After conducting a review exploring TE research in 2011, Klassen et al. explains there is a gap concerning the sources of TE. Outside of mastery experiences, there is still a large gap within the literature concerning the influence of vicarious, social persuasion, emotional and physiological states, and imaginal experiences on PSTs as they instruct PE to SWDs. However, this study was able to contribute to this gap in research by discovering that vicarious experiences are valued by PSTs (answering research question two). PSTs’ TE in this study was boosted by observing peers and professors instructing SWDs in the PE setting. This study also found that social persuasion elevates PSTs’ TE as it comes from peers, professors, administrators. (answering research question three). Concerning emotional and physiological states and imaginal experiences, these two sources were valued by the PSTs as well. However, specifically in this study, mastery experiences, vicarious experiences, and social persuasion were the most valued and influential sources on the TE of the PSTs instructing SWDs within PE.

**Implications for PETE programs**

The results of this study signal that there are still large gaps to be filled within research. As a result, PETE faculty need to continue to contribute to the gaps within TE research as it
pertains to PE to help contribute to findings that can support PSTs in possessing more confidence as they teach a marginalized subject to SWDs.

Next, PETE faculty need to consider the overall personal and professional backgrounds of their students and apply these as necessary to the teaching and learning process to further aid in the TE of their PSTs. Further, as found in this study, there are also various aids and avenues that can influence the TE of a PST as they work with SWDs in the PE setting. As a result, PETE faculty need to acknowledge that while mastery experiences are beneficial, the impact of vicarious experiences and social persuasions on the TE of PSTs is also equally powerful. Sources outside of mastery experiences should not be overlooked within PETE programs and fieldwork experiences of the PSTs.

Additionally, as self-efficacy theory (Bandura, 1977; Maddux 2013) offers and this project discovered, there are five sources in total that fuel the TE of PSTs. Each of the five sources from self-efficacy theory should be considered holistically when PSTs are sent out to their field experiences to instruct SWDs. PETE faculty must implement all five sources instead of relying on mastery experiences alone when attempting to boost the confidence of PSTs with SWDs in their fieldwork experiences and education in general.
Appendix

Figure 1.

_Semi-structured interview one questions_

1. Tell me a little bit about yourself as an undergraduate pre-service teacher, your background, your path up to now, and any experience you’ve had working with students with disabilities.

2. Describe your philosophy and approach to teaching Adapted PE (APE).
   
   A) What do you want your students with disabilities (SWDs) to learn and be able to do by the time they leave your APE instruction?
   
   B) What do you believe are the most important things in a quality APE program/instruction?
   
   C) What do you believe the purpose of adapted physical education is?
   
   D) What exposure do you currently have to SWDs in the PE setting? If any, how long have you been a part of this experience?

3. What teaching placement are you currently in with SWDs in the PE setting? How long have you been a part of this teaching placement for? What are the age groups/grade levels you are currently exposed to? What disabilities are you currently working with in your teaching placement?

   (Show participant TE definition and TE sources and walk participant through each of the TE sources).

   Teacher Efficacy (TE): Friedman and Kass (2002) explain ‘teacher efficacy’ is described as a teacher believing how capable they are of influencing both student behavior and
academic achievement, including students who have difficulties and/or low motivation for learning.

Sources/Influences that contribute to Teacher Efficacy (Bandura, 1977) and (Maddux, 2013):

1. Performance experience: past experiences
2. Vicarious experience: observed experiences or modeling by others
3. Social persuasion: coaching and feedback
4. Imaginal experience: visualizations of future success
5. Physical and emotional states: experience of physical and emotional sensations

4. Which of these sources would you say contribute currently to your teacher-efficacy (TE) when working with SWDs? Why?
   A. Talk to me about things from this source that provide you confidence when working with SWDs. Give me specific examples of how this source/influence boosts your confidence when working with SWDs now.

5. Which of these sources would you say contributed to your TE when working with SWDs in the past Why?
   A. Talk to me about things from this source that provided you confidence when working with SWDs in the past. Give me specific examples of how this source/influence boosted your confidence when working with SWDs in the past.

6. Which of these sources would you say may contribute to your TE when working with SWDs in the future? Why?
A. Talk to me about things from this source that may provide you confidence when working with SWDs in the future. Give me specific examples of how this source/influence may boost your confidence when working with SWDs in the future.

7. What goals do you currently have as a teacher working with SWDs with your current source(s) of TE? at this career stage?

8. Is there anything I didn’t ask you about that is important about your sources of TE and your work as a PE teacher with SWDs that you feel is important?

Figure 2.

_Semi-structured interview two questions_

(Show participant TE definition and TE sources and walk participant through each of the TE sources).

Teacher Efficacy (TE): Friedman and Kass (2002) explain ‘teacher efficacy’ is described as a teacher believing how capable they are of influencing both student behavior and academic achievement, including students who have difficulties and/or low motivation for learning.

Sources/Influences that contribute to Teacher Efficacy (Bandura, 1977) and (Maddux, 2013):

1. Performance experience: past experiences
2. Vicarious experience: observed experiences or modeling by others
3. Social persuasion: coaching and feedback
4. Imaginal experience: visualizations of future success
5. Physical and emotional states: experience of physical and emotional sensations
1. What exposure/PE teaching opportunity with SWDs are you currently in now? How long have you been in this current teaching placement? What age groups/grade levels are you currently working with? What disabilities are you currently working with in your teaching placement?

2. Reflecting on your TE in your past, tell me about what sources listed above and other sources that were present that contributed to your personal TE? Why? Provide me specific examples of how these sources improved your TE.

3. Reflecting on your TE in your past, which of these sources listed and other sources were missing that could have boosted your TE and confidence as a teacher? Why? Provide me specific examples of how these sources could have improved your TE if they were present. What negative sources were present that hindered your TE? Provide me specific examples of how the negative sources were present and how they hindered your TE.

4. Reflecting on your TE in the present, what sources listed above and other sources are contributing to your personal TE? Why? Provide me specific examples of how these sources are improving your TE.

5. What disabilities within APE contribute to your TE? Why? Provide me specific examples of how certain disabilities you work with enhance your TE.

6. What disabilities within APE hinder your TE? Why? Provide me specific examples of how certain disabilities you work with hinder your TE.

What resources and source(s) listed above could be provided to enhance your TE within APE and SWDs? Within general PE?
7. Do you have a higher TE in the APE or general PE setting? Why? Provide me specific examples in each PE setting of why your TE is the way it is. What resources and source(s) listed above could be provided to make your TE within both the general PE setting and APE setting equal?

8. Is there anything I didn’t ask you about that is important about your sources of TE and your work as a PE teacher with SWDs that you feel is important?

**Figure 3.**

_Semi-structured interview three questions_

(Show participant TE definition and TE sources and walk participant through each of the TE sources).

Teacher Efficacy (TE): Friedman and Kass (2002) explain ‘teacher efficacy’ is described as a teacher believing how capable they are of influencing both student behavior and academic achievement, including students who have difficulties and/or low motivation for learning.

Sources/Influences that contribute to Teacher Efficacy (Bandura, 1977) and (Maddux, 2013):

1. Performance experience: past experiences
2. Vicarious experience: observed experiences or modeling by others
3. Social persuasion: coaching and feedback
4. Imaginal experience: visualizations of future success
5. Physical and emotional states: experience of physical and emotional sensations
1. What exposure/PE teaching opportunity with SWDs are you currently in now? How long have you been in this current teaching placement? What age groups/grade levels are you currently working with? What disabilities are you currently working with in your teaching placement?

2. Reflecting on your TE in the present, what sources listed above and other sources are contributing to your personal TE? Why? Provide me specific examples of how these sources are improving your TE.

3. Reflecting on your TE in the future, what sources listed above and other sources could contribute to your personal TE? Why? Provide me specific examples of how these sources could improve your TE.

4. Reflecting on your TE in the future, what sources listed above and other sources could hinder your personal TE? Why? Provide me specific examples of how these sources could hinder your TE.

5. How does your TE now differ from your TE in the past? Is your TE higher in the present compared to your past? Why? Provide me specific examples of the differences (if any), and what source(s) listed above along with other sources that contribute to the difference in your TE now and your TE in your past.

6. How do you think your TE will differ now compared to your TE in the future? Why? Do you think your TE will be higher in the future than it is now? Why? Provide me specific examples of the differences (if any), and what source(s) listed above along with other sources that may contribute to the difference in your TE now and your TE in your future.

7. Is there anything I didn’t ask you about that is important about your sources of TE and your work as a PE teacher with SWDs that you feel is important.
Reflection/Writing Prompt one

Please read the Teacher Efficacy (TE) description and TE sources below. Then reflect on your own teaching journey before completing the journal prompts below.

- Teacher Efficacy (TE): Friedman and Kass (2002) explain ‘teacher efficacy’ is described as a teacher believing how capable they are of influencing both student behavior and academic achievement, including students who have difficulties and/or low motivation for learning.

- Sources/Influences that contribute to Teacher Efficacy (Bandura, 1977) and (Maddux, 2013):
  1. Performance experience: past experiences
  2. Vicarious experience: observed experiences or modeling by others
  3. Social persuasion: coaching and feedback
  4. Imaginal experience: visualizations of future success
  5. Physical and emotional states: experience of physical and emotional sensations

1) What experiences currently in your teacher preparation program (i.e., this can be courses, classwork, teaching placements, professors, observations, etc.) are contributing to your sources of TE? How? What is going on currently and what factors are at play?

2) What experiences currently in your teaching placement (i.e., student teaching, class field experiences, etc.) are contributing to your sources of TE? How? What is going on currently and what factors are at play?
3) What experiences PRIOR to your current teacher preparation program contribute to your sources of TE? How? What was going on at that time and what factors were at play?

4) What experiences PRIOR to your teaching placement contribute to your sources of TE? How? What was going on at that time and what factors were at play?

5) What other experiences that aren’t mentioned in the questions above (this can be anything) contribute to your sources of TE as a pre-service APE teacher?

6) Of the experiences you mention that contribute to your TE, what sources/influences of TE listed above do your experiences fall into?

**Figure 5.**

*Reflection/Writing Prompt two*

Please read the Teacher Efficacy (TE) description and TE sources below. Then reflect on your own teaching journey before completing the journal prompts below.

- **Teacher Efficacy (TE):** Friedman and Kass (2002) explain ‘teacher efficacy’ is described as a teacher believing how capable they are of influencing both student behavior and academic achievement, including students who have difficulties and/or low motivation for learning.

- **Sources/Influences that contribute to Teacher Efficacy (Bandura, 1977) and (Maddux, 2013):**
  1. Performance experience: past experiences
  2. Vicarious experience: observed experiences or modeling by others
  3. Social persuasion: coaching and feedback
  4. Imaginal experience: visualizations of future success
5. Physical and emotional states: experience of physical and emotional sensations

1) What teaching, coaching, etc. certifications do you currently hold OR what certifications are you working on (i.e., National APE certification, special Olympics certifications, state PE certification, national PE certification, etc.) that contribute to your TE? How? What was going on at that time and what factors were at play?

2) What teaching, coaching, etc. certifications have you held in the past (i.e., National APE certification, special Olympics certifications, etc.) that contribute to your TE? How? What was going on at that time and what factors were at play?

3) What teaching, coaching, etc. certifications do you plan to hold in the future (i.e., National APE certification, special Olympics certifications, etc.) that you believe will contribute to your TE? How? What do you feel will be going on at the time and what factors do you feel will be at play?

4) What other experiences that aren’t mentioned in the questions above (this can be anything) contribute to your sources of TE as a pre-service APE teacher?

5) Of the experiences you mention that contribute to your TE, what TE sources/influences listed above do your experiences fall into?

Figure 6.

Reflection/Writing Prompt three

Please read the Teacher Efficacy (TE) description and TE sources below. Then reflect on your own teaching journey before completing the journal prompts below.

- Teacher Efficacy (TE): Friedman and Kass (2002) explain ‘teacher efficacy’ is described as a teacher believing how capable they are of influencing both student behavior and
academic achievement, including students who have difficulties and/or low motivation for learning.

• Sources/Influences that contribute to Teacher Efficacy (Bandura, 1977) and (Maddux, 2013):
  1. Performance experience: past experiences
  2. Vicarious experience: observed experiences or modeling by others
  3. Social persuasion: coaching and feedback
  4. Imaginal experience: visualizations of future success
  5. Physical and emotional states: experience of physical and emotional sensations

1. From what you do know of being an in-service APE teacher, tell me about any colleagues inside PE (i.e., fellow PE teachers, PE coordinator, etc.) that you predict may contribute to your TE once you become an in-service teacher. How? Please provide me with specific scenarios and examples of how these people and situations may contribute to your TE.

2. From what you do know of being an in-service APE teacher, tell me about any colleagues outside PE (i.e., fellow campus teacher, campus administrator, etc.) that you predict may contribute to your TE once you become an in-service teacher. How? Please provide me with specific scenarios and examples of how these people and situations may contribute to your TE.

3. From what you do know of being an in-service APE teacher tell me about any situations or sources outside of PE that you predict may hinder your TE (i.e., administrator not prioritizing PE, PE instruction being cut due to testing or presentations, professional
development topics not applying to you and your discipline, etc.). Please provide me with specific scenarios and examples of how these factors and situations may hinder your TE.

4. What other experiences, people, factors, etc., that aren’t mentioned in the questions above (this can be anything) contribute to your sources of TE as a pre-service APE teacher?

5. Of the people, situations, and factors you mention that may contribute to/hinder your TE, what sources/influences of TE listed above do your experiences fall into?

Figure 7.

Critical Incident Account prompt

1) Think of a time/experience that significantly impacted your Teacher Efficacy (TE) positively as a pre-service teacher as you work with students with disabilities. Tell me everything you can remember and paint me a picture. Make me feel like I’m there: tell me who was there, who said what to whom, what you did, and how you felt. Also tell me why this event/incident was so significant. Writing style/quality is irrelevant. What matters most is how much you describe, tell, and how much you go into why this event was so significant.

2) Of the experience you mention that impacts your TE, what sources/influences of TE listed above do your experiences fall into?
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