2015

Self-Efficacy, Cultural Competence, and Perception of Learning Environment in Traditional and Interprofessional Education Physical Therapy Curricula

Laura Smith
Walden University

Walden University

College of Education

This is to certify that the doctoral dissertation by

Laura Smith

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Alice Eichholz, Committee Chairperson, Education Faculty
Dr. Daniel Salter, Committee Member, Education Faculty
Dr. Cynthia Davis, University Reviewer, Education Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2015

Abstract

Self-Efficacy, Cultural Competence, and Perception of Learning Environment in Traditional and Interprofessional Education Physical Therapy Curricula

by

Laura Jean Smith

BA, Trinity Christian College, 2000

DPT, University of St. Augustine for Health Sciences, 2003

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Adult Education

Walden University

July 2015

Abstract

Interprofessional education (IPE), a concept that brings students from different health care professions together in the learning process, has been adopted by some physical therapy (PT) schools as an alternative to traditional PT-only curricula. Both approaches have the goal of improving patient outcomes for an increasingly diverse population. There was a void in the research comparing IPE and traditional curricula in PT education. Grounded in the theoretical frameworks of adult and social learning theory, the purpose of this study was to examine differences in students' self-efficacy, cultural competence, and perceptions of the learning environment based on curricular type and prior to their first clinical internship. The nonexperimental, causal-comparative research design was used to test a single research question about differences in the 4 dependent variables based on curriculum format (IPE or traditional) for a balanced, random sample of 218 preclinical students from 6 different PT programs. The results of Hotelling's T^2 and post hoc analysis revealed statistically significant, higher self-efficacy scores for students in IPE curriculum than ones in the traditional curriculum. No significant differences were found related to cultural competence and perception of learning environment. Results suggest that future research could examine the relationship between self-efficacy and cultural competence. The positive social change implication for this research was that preclinical PT students' in an IPE curriculum had increased self-efficacy as compared to those in traditional curricula. This information can be used to provide direction for PT programs as they work toward delivering exceptional educational experiences in order to improve patient outcomes and better society.

Self-Efficacy, Cultural Competence, and Perception of Learning Environment in Traditional and Interprofessional Education Physical Therapy Curricula

by

Laura Jean Smith

BA, Trinity Christian College, 2000

DPT, University of St. Augustine for Health Sciences, 2003

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Adult Education

Walden University

July 2015

Dedication

I dedicate this dissertation to my son, Carson, and to my wonderful husband, Mike. Carson, I started this journey long before you were born, but you have been with me every step of the way, giving me the energy and focus—the *purpose*—for finishing this degree. Right now, you are too young to know what an inspiration you have been to me; someday I hope you will. Just as my mom instilled the value of education to me, I hope to pass it forward to you. May you grow to love learning and appreciate that education is one of the most valuable keys to a rewarding life.

Mike, you are the love of my life, and my PhD journey would have been incomplete without you by my side. We dated, got engaged, married, purchased a home, started new jobs, and had our amazing son—all while I was working on this degree. You sacrificed, listened, encouraged, and celebrated with me every step of the way. Thank you for believing in me and our future; our best is yet to come.

Acknowledgments

I would like to express my deepest appreciation to my mentor of almost 5 years, Dr. Alice Eichholz. Your support, encouragement, and guidance have kept me on track. You are one of the primary reasons that I was able to achieve my goals. Dr. Eichholz, you have influenced my professional development more than you know, and I am forever grateful for your unconditional investment in me.

Dr. Salter, you have a gift for explaining statistics, and you made my dissertation experience so much better than I imagined it would be. Your energy for scientific inquiry is contagious and your style has motivated me to want more as a researcher. Thank you for your commitment to both me and my endeavors.

Mom, thank you for instilling in me the value of education, the power of knowledge, and the reward of independence. I would not have embarked this PhD journey without your lifelong guidance. Thank you to my sister and best friend, Jeanne, for the daily doses of encouragement and sound reality checks. You remind me of what is important in life: family. Cynthia, thank you for all of your help and for being my professional role model.

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction to the Study

Healthcare providers entering the workforce have particular educational needs in meeting the healthcare needs in today's culturally diverse, economically challenged society (World Health Organization, 2010). Two challenges for healthcare providers are the rising number of racial and ethnic minorities in the healthcare system and the need to provide quality, cost effective patient care (World Health Organization, 2010). Healthcare professionals have designed interventions to meet these needs in the form of interprofessional collaboration, interprofessional education (IPE), and collaborative teaching models (Gilbert, 2005; Reeves et al., 2011; World Health Organization, 2010). The goal of IPE is to provide an education for healthcare providers that will prepare them for working in a collaborative team environment to address the diverse health care needs of society (Institute of Medicine, 2003; World Health Organization, 2010).

The Interprofessional Collaborative Expert Panel (IPEC, 2011) identified the core competency domains of IPE and collaborative practice as values/ethics for interprofessional practice, roles/responsibilities, interprofessional communication, and teamwork. Self-efficacy, cultural competence, and learning environment are competencies within the core domains of IPE and collaborative practice. The Cultural Competence Committee of the American Physical Therapy Association (APTA, 2008) identified cultural competence and self-efficacy as important characteristics of physical therapy (PT) practitioners. There is a relationship between cultural competence education and students' self-efficacy (Jeffreys & Dogan, 2012). This supports the need for culturally competent health care professionals identified by the World Health

Organization (WHO). The WHO (2010) suggested that IPE models address the need for professional development of healthcare students; therefore, it may be beneficial to develop a learning environment that fosters these behaviors.

I examined differences in student's perceived self-efficacy, cultural competence, and perceptions of learning environment as they relate to IPE in PT education in this dissertation. IPE models are not well established in the area of PT education in the United States (Arenson, Rose, & Lyons, 2010; Bridges, Davidson, Odegard, Maki, & Tomowiak, 2011; Thiele, 2007). Furthermore, students' perception of their learning environment may influence learning and motivation (Fisher & Kent, 1998; Salter, 2012). Self-efficacy and cultural awareness are skills needed in the culturally competent practitioner (APTA, 2008). Additionally, students' perception of the learning environment and the teacher's personality may influence what they learn (Fisher & Kent, 1998).

The overarching positive social change implication for this research was that learning more about PT students' self-efficacy, cultural competency, and perceptions of the learning environment prior to their clinical internship experience with the healthcare team might provide direction for more PT programs to take steps toward IPE and the vision of the WHO (2010). If students feel more confident in their learning environment as it relates to development of self-efficacy and cultural competence as a healthcare provider, the better the patient outcomes.

The major sections of Chapter 1 include the background and identification of a gap in the literature, the problem statement, the purpose of the study, the research

questions, theoretical framework, nature of the study, operational definitions, assumptions, delimitations, limitations, and study's significance.

Background

Interprofessional collaboration, IPE, and collaborative teaching practice models are of growing interest as a means of providing cost-effective, quality patient care (Gilbert, 2006; Reeves et al., 2011; WHO, 2010). Professionals in PT have embraced models of IPE and interprofessional collaborative practice in order to be a part of the comprehensive healthcare team (Bainbridge, Nasmith, Orchard, & Wood, 2010). Historically, PT education has developed student competencies based on uniprofessional standards rather than interprofessional competencies (Bainbridge et al. 2010). Fortunately, the Canadian Interprofessional Health Collaborative developed core competencies that support patient-centered practice, and the United States has joined forces with the Interprofessional Education Collaborative (IPEC, 2011) to work toward the WHO's (2010) vision of teamwork. The IPEC (2011) identified the core competency domains of IPE and collaborative practice as values/ethics for interprofessional practice, roles/responsibilities, interprofessional communication, and teams and teamwork (p. 16). Self-efficacy and cultural competence are within the core domains of IPE and collaborative practice. Recently, the American Physical Therapy Association (APTA) has also collaborated with IPEC to advance the collaborative practice models within the United States (IPEC, 2011).

The profession of PT is supportive of IPE and collaborative practice models; however, such frameworks are not well established in PT education (Arenson, Rose, &

Lyons, 2010; Bridges, Davidson, Odegard, Maki, & Tomowiak, 2011; Thiele, 2007). IPEC is advancing healthcare education and collaborative practice through partnerships with various organizations. PT education in the United States is currently at an entry-level doctor of PT degree. Students complete a combination of didactic courses and clinical internship experience as part of graduation requirements. During clinical internships, students have hands-on patient care experiences as part of the healthcare team under the supervision of a licensed physical therapist.

In this dissertation research, I investigated the self-efficacy, cultural competence, and students' perception of their learning environment. To identify preclinical differences between students in programs that are IPE and those that have a traditional curriculum was valuable to advancing healthcare education for physical therapists. If students enter the clinical internship more prepared, they will likely deliver better patient care and be more active member of the collaborative healthcare team. Commonly, clinical internships of 6 weeks or longer are a part of the curriculum at the end of the first year of didactic work. In this dissertation research, researching students before the internship provided specific insight to the impact of the traditional versus IPE learning environment. Educational institutions may learn that there is a dynamic nature of an IPE curriculum related to development of core competencies of self-efficacy and cultural competence as compared to a traditional curriculum, both which aim to foster student success. Additionally, a comparative assessment of student perceptions of the learning environment between IPE and traditional curricula suggested that there is little difference of how students perceive their learning environment.

Gap in Knowledge

Self-efficacy has been associated with behavior change, learning, and success in medical education (Goldenberg et al., 2012; Townsend & Scanlan, 2011). Studies exploring the self-efficacy of pharmacy students (Dahl & Hall, 2013; Jungert & Rosander, 2010), nursing students (Darkwah, Ross, Williams, & Maddill, 2011; Jungert & Rosander, 2010), and general health care students (Norgaard, Ammentorp, Kyvik & Kofoed, 2012) have all demonstrated positive change. There was some evidence that self-efficacy is also important for PT students (Ateah et al., 2011; Davies et al., 2011; Goldenberg et al., 2005; Mann et al., 2012); however, there appeared to be a void in the research related to self-efficacy of PT students prior to their clinical internship.

The Institute of Medicine (2003), WHO (2010), and the committee for cultural competence of APTA (2008) similarly stated that there is a need for culturally competent health care providers. The APTA (2006) developed the Physical Therapy Clinical Performance Instrument (CPI) that is a valid and reliable tool to measure the cultural competence of physical therapy students during an internship experience. Some studies have examined the effects of cultural competence training (Beach et al., 2005; Campinha-Bacote, 2002; Hawala-Druy & Hill, 2012; Pecukonis, Doyle, & Bliss, 2008); yet, few studies are specific to physical therapy students prior to clinical internship.

The general attitudes of faculty and students in health professions programs toward IPE are positive and well established in the literature (Aziz et al., 2011; Bennett et al., 2011; Bottenberg et al., 2013; Coster et al., 2008; Curran et al., 2007; Curran et al., 2008; Hoffman & Redman-Bentley, 2012). There is value in understanding the student's

perspective of the learning environment (Persaud & Salter, 2003). There were no studies found that reported the perception of the learning environment of PT students in traditional or IPE curricula. Overall, there were limited reports on cultural competence, self-efficacy, and perception of learning environment of PT students in IPE and traditional curricula.

Significance of Study

Several reports in the literature identified a positive impact of IPE on healthcare teams, interprofessional collaborative care, role identity, self-confidence, and cultural competence in healthcare education (Beach, et al., 2005; Campinha-Bacote, 2003; Dahl & Hall, 2013; Hawala-Druy & Hill, 2012; Jackson, 2011; Jungert & Rosander, 2010; Pecukonis, Doyle, & Bliss, 2008). However, after an exhaustive review of the literature, I found no reports of uniprofessional programs as compared with IPE for the variables of self-efficacy, cultural competence, and student perception of the learning environment. I examined these topics in this dissertation.

Successful healthcare providers in a collaborative practice setting must demonstrate the competencies of self-efficacy and cultural competence, which are within the domains of IPE and collaborative practice identified by IPEC (2011). The development of these skills often takes place in the educational setting, and IPE frameworks are being used to develop self-efficacy and cultural competence within medical education. The sooner these skills develop and the earlier their clinical application, the sooner the patient will benefit. Students' perception of their learning environment learning may be related to students' motivation to learn (Steinart, 2007).

This is especially valuable for the programs with traditional PT curriculum because some simple changes may lead to improved student and, eventually, patient outcomes.

The results from the research for this dissertation contribute to the body of knowledge in PT education as related to IPE in the United States. Knowledge about the differences between IPE and traditional curricula on the constructs of core competencies of self-efficacy and cultural competence prior to clinical internship may enhance the future learning and performance on clinical internships, better preparing students for working in a collaborative workplace.

Problem Statement

The increasing numbers of racial and ethnic minorities in the healthcare system place an added demand on health care providers to be culturally competent in providing comprehensive care to patients (WHO, 2010). IPE is an emerging approach to teaching and learning that brings together students from two or more professions to learn about, from, and with each other in service of enabling effective collaboration (World Health Organization, 2010). The WHO (2010) suggested that IPE models address the need for professional development of healthcare students; therefore, it may be beneficial to develop a learning environment that fosters these behaviors. IPE is becoming an increasingly significant issue in healthcare education (Gilbert, 2005; WHO, 2010). The WHO (2010) has demonstrated that comprehensive quality patient care has become a more significant issue in recent years but the problem is unresolved. In order to address the need for improved healthcare, it is necessary to know more about IPE. This study, which investigated self-efficacy, cultural competence, and the impact of the learning

environment on physical therapy education, helps work toward improving health care education.

The overriding goal of IPE is to improve clients' health through the education of a collaborative, practice-ready workforce that is responsive to local health needs (WHO, 2010). Collaboration logically supports cultural competence because it brings together differing perspectives on the best ways to serve a diverse client population (Curran, Sharpe, Forristall, & Flynn, 2008; Gilbert, 2005); although promising, IPE models are not well established in PT education in the United States. Therefore, a gap existed in understanding the differences between programs with and without IPE as they relate to key student characteristics. Self-efficacy and cultural competence are skills that are needed to be a culturally-competent practitioner (Committee for Cultural Competence of the APTA, 2008), and they are competencies within the core domains of IPE and collaborative practice. Additionally, students' perception of their learning environment may influence how they learn in traditional and IPE curricula. The more that is known about the learning environment and outcomes for PT students in traditional and IPE curricula, the better informed educators will be as they work to implement IPE interventions and emphasize the value of collaborative care in a culturally diverse society. Therefore, I examined differences in students' perceived self-efficacy, cultural competence, and perceptions of their learning environment, as they relate to IPE in PT education.

Purpose of the Study

The purpose of this study was to examine differences in PT curricula related to students' self-efficacy, cultural competence, and perception of learning environment, prior to their first clinical internship. This new knowledge could be used to improve the educational delivery methods in PT learning environments and emphasize a cultural competence skillset needed for interprofessional collaboration during clinical internship. The result could improve service to a diverse population in need of health care, first on the students' clinical internship and then in their clinical practice. Little seems to have been done to research the relationship between the students' self-efficacy, cultural competence, and perception of learning environment of the entry level PT students in traditional and IPE programs prior to their first clinical internship. This study contributed by providing understanding about preclinical students' perception of self-efficacy, cultural competence, and the learning environment in both traditional and IPE physical therapy schools. This understanding is beneficial to PT curriculum faced with the challenges of educating PT professionals to meet the needs of the changing population base.

Research Questions and Hypotheses

Research question: Are there differences in self-efficacy, cultural competence, and perception of learning environment for a sample of preclinical PT students based on curriculum format (IPE or traditional)?

Null hypothesis (H_o): There are no significant differences in self-efficacy, cultural competence, and perception of learning environment for a sample of preclinical PT students based on curriculum format of IPE and traditional.

Alternative hypothesis (H_A): There are significant differences in self-efficacy, cultural competence, and perception of learning environment for a sample of preclinical PT students based on curriculum format of IPE and traditional.

Theoretical Framework

The theoretical frameworks in this dissertation research are social and adult learning theory. Specifically, Bandura's (1977) social learning theory, Kegan's (1994) adult learning theory, Brookfield's (1995) reflective lenses for learning, and Salter's (2000) environmental type indicator theory provided the foundation for this study. The major theoretical proposition for this dissertation study was that there may be a relationship between self-efficacy, cultural competence, and students' perception of their PT learning environment that may have implications for their future success as clinicians. The aforementioned social and adult learning theories lend some support to this hypothesis and are analyzed in depth in Chapter 2 of this dissertation.

One of the guiding aspects of Bandura's (1977) social learning theory is self-efficacy and the positive impact of modeling and observational learning. A strong relationship between self-efficacy and individual success has been identified (Bandura, 1977), and this theoretical framework has been used in previous research on healthcare students (Jeffreys & Dogan, 2012; Roessger, 2012). The WHO (2010) suggested that IPE models address the need for professional development of healthcare students;

therefore, it may be beneficial to develop a learning environment that fosters these behaviors. There may be a relationship between IPE and self-efficacy as related to social learning theory for PT students—if they do not possess the confidence in their ability to work with an interprofessional team, they will likely struggle to apply the core competency skills of a collaborative practitioner.

The social cultural aspects of the adult learning theory of Kegan (1994) were also part of the foundation for this study. In theory, Kegan's work supports the position from the Cultural Competence Committee of the APTA (2008) that identified cultural competence as a needed skill of physical therapists. Kegan (1994) described education as a transformative process in which decision making and communication is both an individual and shared process. Furthermore, he suggested that there is a relationship between people and their environment that relates to behavior and connectedness to society. For this dissertation research, the relationship examined was between students and their learning environment. Kegan's (1994) theory supported Gilbert's (2006) position on IPE that students and educators need to have a shared vision of social and cultural awareness to meet the healthcare needs of society.

Brookfield (1995) presented reflected lenses for learning that highlighted the relationships between self-reflection, intrinsic motivation, and connectedness to the learning environment and society. The reflective lenses for learning can provide both students and educators a better understanding of the transformative process of learning (Brookfield, 1995). According to Brookfield, this critical reflection process seems to be a necessary development of self within the learning environment and society. Students and

educators need this process in the classroom and as they progress to a collaborative practice work environment in physical therapy.

This dissertation research was also rooted in Salter's (2000) environmental type indicator theory. Salter's theory highlighted the relationship between the psychological types of people and their environment. Salter (2012) suggested that individual thoughts and behaviors of people can impact the learning environment, and that a teacher should be interested in the perception of classroom environment because of the relationship to learning. The culture of IPE is dynamic and interactive (Gilbert, 2005), and it would be helpful for PT educators to learn about the students perception of these environments, and to learn if there is a preferred learning environment style among PT students.

Nature of the Study

This study took the form of a nonexperimental, causal-comparative research design. A causal-comparative design best aligned with the research to make comparisons between two groups with one independent variable. The design was nonexperimental in that neither intervention nor random assignment of participants to conditions of the independent variable were indicated (Creswell, 2009; Frankfort-Nachmias & Nachmias, 2008; Trochim, 2006). That is, participants self-selected the type of program, either IPE or traditional, prior to participation. In this specific study, the independent variable, type of curricula, was categorical in nature (IPE versus traditional). The dependent variables, self-efficacy, cultural competence, and the thinking-feeling and extraversion-introversion constructs of the perception of learning environment, were continuous in nature.

A demographic questionnaire and three standardized instruments were completed by students in their preclinical time of study in both traditional and IPE programs. The Sherer Self-Efficacy Scale was used to measure self-efficacy of students (Sherer et al., 1982), the Inventory for Assessing the Process of Cultural Competence Among Healthcare Professionals–Student Version (IAPCC-SV; Camphina-Bacote, 2007), and the Salter Environmental Type Assessment (SETA, 2003) were used to measure the students perception of the physical therapy learning environment (Salter, 2002). A questionnaire was used to collect basic demographic information to support conclusions about the generalizability of the results to the broader student population. Based on the demands of this causal-comparative design, a Hotelling's T^2 was the appropriate analytic strategy for one dichotomous independent variable and four continuous dependent variables (Frankfort-Nachmias & Nachmias, 2008; Trochim, 2006).

Operational Definitions

Interprofessional education (IPE): WHO (2010) defined this concept as "when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes" (p. 13). IPE was operationally defined for this study by the program/course catalog for the each of the physical therapy programs.

Self-efficacy: A person's belief in their ability to succeed in a life situation (Bandura, 1977). Self-efficacy was operationally defined for this study by The Self-Efficacy Scale (Sherer et al., 1982).

Cultural competence: Campinha-Bacote (2002) defined this concept as "the ongoing process in which the health care provider continuously strives to achieve the ability to effectively work within the cultural context of the client (individual, family, community)" (p. 181). Cultural competence was operationally defined for this study by the Inventory for Assessing the Process of Cultural Competence Among Healthcare Professionals–Student Version (IAPCC-SV; Camphina-Bacote, 2007).

Learning environment: The learning environment within PT courses and related learning activity, not the university as a whole. Learning environment perception was operationally defined for this study by the Salter Environmental Type Assessment (SETA; Salter, 2000).

Assumptions

The assumptions for this study were that participants answered questionnaires honestly and completely. Also, that participants provided accurate demographic information. In addition, I assumed differences in the curricular formats of the IPE and traditional programs included in this study.

Scope and Delimitations

The specific aspect of IPE as an intervention to improve health care outcomes was the main theme of this dissertation research. Looking at the constructs of self-efficacy and cultural awareness of PT students provided unique insight to education preparation of PT students. Understanding how PT students perceive their learning environments was valuable as a contributing factor to their academic success and confidence entering the work force.

The sampling frame included all U.S. students enrolled in an on-campus, graduate program in PT, who are 18 years or older at the time of the study. The focus of this study was on the initial, nonclinical experiences of PT students; therefore, only students who had not completed a formalized clinical internship were targeted for inclusion in the study. Students who were on a part-time admission status or who have completed a 6-week clinical internship were excluded from the study. Adult and social learning theory was used as the foundation for this research study. Theories that were not investigated included but were not limited to: situated learning theory, emotional intelligence theory, moral development theory, complexity theory, reflective practice theory, social psychology theory, and experiential learning theory. Delimitations included that the participants are only from PT programs, and further comparisons to other medical programs of study should not be made.

Limitations

Threats to external validity were addressed by the randomized selection of PT programs participating in the study. Threats to internal validity, such as the participant's history or maturation, were not a concern for this study. Construct validity was established in the selection of instruments that were used to measure the operationally defined variables. Statistical conclusion validity was addressed through the selected research design and statistical tests used in the data analysis. These were reasonable measures taken to address the limitations and biases in this study.

Significance

The purpose of this study was to determine whether for entry level PT students in both in traditional and IPE curricula there were differences in perceived self-efficacy, cultural competence, and perception of learning environment prior to first clinical internship. This knowledge can be used to improve the curriculum and teaching methods in the PT programs. This study specifically advanced the profession of PT by gaining valuable insight to the students as they prepare for entering a collaborative, culturally diverse workplace. Better understanding of PT students leads to improvements in PT education, which can enhance performance on clinical internships and later employment as a clinician.

This study advanced educational best practice methods by providing understanding about preclinical students' perception of self-efficacy, cultural competence, and the learning environment in both traditional and IPE PT curricula. The results from this dissertation research suggested that there was a significant difference in the self-efficacy of students in the IPE and traditional curricula. Additionally, learning about the students' perception of their learning environment affords educators and institutions the chance to address environmental factors that influence learning and success despite not finding a significant different in the results.

The implications for positive social change from this study suggest that better educational practices, such as those of IPE, may lead to better prepared health care providers, in this case physical therapists, who are ready to work in a collaborative practice work force with improved delivery of health care services as the result. This

research impacts the individual, programmatic, institutional, and societal level for PT students, practitioners, and patients as they benefit from more qualified healthcare professionals who are ready to work in a collaborative, patient-centered workforce.

Summary

In summary, this chapter provided information about the research problem, research questions, and research methods that were used in this dissertation research. The theoretical framework and significance were also discussed in detail. This research framework provides a foundation for exploration of some of the variables influencing possible differences in traditional and IPE PT curriculum. The next chapter of this dissertation is an in-depth literature review.

Chapter 2: Literature Review

Introduction

The increasing numbers of racial and ethnic minorities in the healthcare system place an added demand on health care professionals to be culturally competent while providing comprehensive care to patients (WHO, 2010). Interprofessional collaboration, IPE, and collaborative teaching practice models are of growing interest as a means of providing cost-effective, quality patient care (Gilbert, 2005; Reeves et al., 2011; WHO, 2010). The Canadian Interprofessional Health Collaborative developed core competencies that support patient-centered practice, and the United States has joined forces with the IPEC to work toward the vision of the WHO. The IPEC (2011) paper identified the core competency domains of IPE and collaborative practice as values/ethics for interprofessional practice, roles/responsibilities, interprofessional communication, and teams and teamwork (p. 16).

In particular, the APTA (2008) has acknowledged cultural competence as an important part of physical therapy practice and education. Although various training models exist for physical therapists, IPE is an emerging approach to teaching and learning that brings together students from two or more professions to learn about, from, and with each other for the purpose of enabling effective collaboration (WHO, 2010).

The overriding goal of IPE is to improve client health through the adequate education of a collaborative, practice-ready workforce that is not only attuned to but also responsive to local health needs (WHO, 2010). Collaboration logically supports cultural competence because it brings together differing perspectives on the best practices for

serving a diverse client population (Curran, Sharpe, Forristall, & Flynn, 2008; Gilbert, 2005). The Institute of Medicine (2003) postulated that patient needs often require more than one area of expertise. Furthermore, they recommended that healthcare teams might likely be the solution to more effective patient care. Although a promising prospect, such models are not well established in the area of PT education in the United States (Arenson, Rose, & Lyons, 2010; Bridges, Davidson, Odegard, Maki, & Tomkowiak, 2011; Thiele, 2007).

IPE models are advancing health profession education and patient care outcomes (Bridges et al., 2011). In an exhaustive review of the literature, few specific details were reported for PT educational models and the relationships between the constructs of student self-efficacy, cultural competence, and perception of classroom environment. As the following literature review demonstrates, a substantial gap exists in assessing the differences between uniprofessional programs with and without formalized IPE as they relate to key student characteristics. Self-efficacy and cultural awareness have been identified as skills needed in the culturally competent practitioner (APTA, 2008). Additionally, a student's perception of his or her learning environment and teacher personality may influence how he or she learns (Fisher & Kent, 1998). I examined differences in students' perceived self-efficacy, cultural competence, and perceptions of their learning environment—as they relate to IPE in PT education—in this dissertation.

Purpose

The purpose of this study was to examine differences in PT curricula related to students' self-efficacy, cultural competence, and perception of learning environment,

prior to their first clinical internship. New knowledge from this study can be used to improve the delivery methods in classroom environment and enhance the core competencies needed to engage in collaborative practice during clinical internship and later with entry into the healthcare field. Furthermore, the results could improve service to a diverse population in need of health care. Little seems to have been done to research the relationship between the students' self-efficacy, cultural competence, and perception of classroom environment for the entry level PT student in traditional and IPE programs prior to their first clinical internship. Research supporting IPE claims the value is measurable; however, the impact of the aforementioned variables is still unknown.

This study contributed significantly to the effective preparation of physical therapists by providing understanding about preclinical student's self-efficacy, cultural competence, and perception of the learning environment in both traditional and IPE PT schools. The effective preparation of preclinical PT students is needed to address the on-going challenges of an ever-changing demographic in the patient population. An understanding of the level of core competencies of self-efficacy, cultural competence, and perception of the learning environment of preclinical students' in both traditional and IPE curricula can add to that effective preparation. The impact of social change that resulted from this study was that traditional programs may be afforded the opportunity to make changes on a smaller scale, knowing that self-efficacy was found to be one of the key differences in students of IPE curricula. This can help students better transition into an interprofessional workforce. A better trained healthcare workforce should be able to improve efficiency and effectiveness of delivering quality healthcare.

Synopsis of Current Literature

This dissertation was rooted in the social learning theory of Bandura (1977), adult learning theories of Kegan (1994) and Brookfield (1995), and Salter's (2012) environmental type indicator theory. IPE curricula commonly use a combination of didactic learning, service learning experiences, and formalized clinical internships as the foundation of the learning (Bridges et al., 2011). Although numerous proposed frameworks for IPE (Roessger, 2012; Sargent, 2009) exist, there is a limited amount of research on IPE or interprofessional interventions that use theory as a foundation for their research (Reeves et al., 2011), which challenges healthcare education curricular developments with the application of an IPE framework in their curricula (MacDonald et al., 2010; Snow et al., 2011).

The evidence supporting the positive outcomes of IPE efforts and interprofessional care has been linked to improved delivery of healthcare (Snow et al., 2011 p. 20). Overall, health professional students and faculty have positive perceptions of IPE (Soeren et al., 2011). Research supports that changes in self-efficacy (Goldenberg, Andrusyszyn, & Iwasiw, 2005; Mann et al., 2012; Townsend & Scanlan, 2011), and cultural competence (Hawala-Druy & Hill, 2012; Jackson, 2011) happen with participation in IPE activities. However, little is known about these core competencies in PT students prior to their clinical internships in either traditional or IPE programs. Bridges, Davidson, Odegard, Maki, and Tomkowiak (2011) reviewed three interprofessional models, and two of the three did not include PT. Such studies demonstrate the void of PT representation in the interprofessional pedagogical research

and suggest the need for understanding the development of core competencies in PT students related to the IPE experience. The role of the facilitator and the student's perception of the learning environment impact the enthusiasm and motivation for learning in an IPE environment (van Soren et al., 2011); therefore, understanding more about the learning environment in IPE and traditional curricula for PT students is beneficial.

A cultural framework needs to be built on the foundation of a cultural worldview and societal values (Brookfield & Holst, 2011). Greenman and Dieckman (2004) identified a need for improved cultural awareness and transformative educational processes for teachers and students in higher education. Branscombe, Spears, Ellemers, and Doosje (2002), Kek and Huijser (2011), and Salter and Persaud (2003) each emphasized the importance of a positive classroom environment on the learning and confidence of adult learners in relation to their success.

Preview of Chapter

This chapter began with an introduction to the research problem along with a concise synopsis of concurrent literature that establishes and supports the problem's relevance. What follows includes first, the scope of literature review search strategies, and second, theoretical frameworks for the study with an analysis of current research supporting those theories. Next, an evaluation of the literature illuminates current research related to the constructs and methodologies of IPE instructional practices and identifies the potential gap in existing PT educational research related to the constructs of self-efficacy and cultural competence of students in traditional and IPE curricula as well

as their perception of the learning environment. The variables revealed in this research were contrasted against the available research on IPE and further synthesized in order to probe strengths, weaknesses, and controversies within the research. Lastly, the literature review concludes with a discussion of the research on variables of self-efficacy, cultural competence, and perception of learning environment.

Literature Search Strategy

The databases accessed during this research included MEDLINE, CINAHL, EBSCO, ERIC, and ProQuest. I conducted hand searches through the *Journal of Interprofessional Care* and the *Journal of Physical Therapy Education.* The key search terms utilized were *cultural awareness, cultural competence, cultural sensitivity, cultural diversity, self-efficacy, self-confidence, learning environments, classroom environment, and attitude toward IPE with and without physical therapy students*. Additionally, search term combinations included *interprofessional education, interprofessional collaborative care models, IPE frameworks, interprofessional theory, and interprofessional teams*. The scope of the literature review was 1985 to 2013, and included seminal and current peer reviewed literature.

Theoretical Frameworks

In this section of the chapter, I discuss Bandura's (1977) social learning theory, Kegan's (1994) adult learning theory, Brookfield's (1995) reflective lenses for learning, and Salter's (2012) environmental type indicator theory and their major theoretical propositions as the framework for the research. A review of current research on their theories provided the basis for discussion of the relationship of these theories to the

current research, including how the research questions relate to and build upon this existing theory.

Social Learning and Adult Education

Social learning and adult education theories have infiltrated much of the research on IPE and collaborative practice frameworks. The document, "Seamless Care: An Experimental Model of Interprofessional Education for Collaborative Patient-Centered Practice" (Interprofessional Education for Collaborative, Patient-Centred Practice, 2013) served as an IPE model using a framework situated learning theory of Wenger and Bandura (Mann et al., 2012, p. 93). Therefore, this dissertation further explored the relationship of Bandura's contract of self-efficacy in social learning theory with the PT students in traditional versus IPE programs. Bandura's (1977) social learning theory encompassed the values of self-efficacy, modeling, and observational learning. Similarly, Kegan (1994) theorized that a transformational process occurs in a person's self-identity, self-confidence, and communication skills over a period of time with concurrent formation of a sociocultural life perspective. Kegan suggested that educators focus on nurturing the development of others through positive, encouraging strategies that empower the recipients to take control of their lives (p. 5).

One of the guiding aspects of Bandura's (1977) social learning theory is self-efficacy where he asserted that a significant relationship exists between self-efficacy and individual success. Bandura's theory served as an anchor for this dissertation, along with the sociocultural adult learning theories of Kegan (1994) and Brookfield's (1995) reflective lenses for learning. Their theories support the position of the APTA (2008)

that identified cultural competence as a fundamental skill. This social learning theory framework provides the foundation for the assessment of the self-efficacy and cultural competence variable influencing potential differences between traditional and IPE physical therapy curriculum.

Bandura's (1977) social learning theory was deeply rooted in observational learning and modeling. The reciprocal interaction between an individual's personal, behavioral, and environmental situations influences his or her behavior and level of motivation ultimately bearing on their success (Bandura, 1977). Bandura articulated that often a person's behavior and future decision-making were swayed by the consequence of his or her decision.

Poor performance can be emotionally rooted or stem from anxiety, may hamper the confidence of a person, thus validating the relationship between self-efficacy and an individual's perception of his or her ability to be successful (Bandura, 1977). Bandura (1977) embraced the notion that each person has a unique method of interpreting situations and new information before it can be transformed into a new behavior all its own (p. 59). Bandura's social learning theory, commonly cited in educational research, serves as one of the foundational theories of the social and transformative process of a healthcare student (Jeffreys & Dogan, 2012; Roessger, 2012).

Roessger (2012) suggested that there may be more than one appropriate theory that can be applied in adult education. He identified overlaps in Bandura's (1977) social learning theory and Kolb's (1984) experiential learning theory. Roessger (2012) recommended that future research explore the relationship between learning

environments and the motor learning experience. The application of social learning theory to interdisciplinary learning environments commonly embraces the foundational principle of behavior modeling as a means of learning (Roessger, 2012, p. 383). If IPE models are striving to foster the professional development of students as collaborative practitioners (WHO, 2010), it further behooves programs to construct an environment that models the expected behavior in order to create learning environment similar to Bandura's (1977). IPE and self-efficacy related to social learning theory for adults were paramount to this study. If healthcare students are not confident about their ability to work with an interprofessional team, they will be less likely to demonstrate the core competencies of a collaborative practitioner.

Kegan (1994) articulated that as individuals experience varying levels of self-transformation, they reach a point where decision-making and communication reflect not only a sense of individuality, but also a marked connectedness to the impact on others during the process. The obligatory values of the competent, culturally savvy practitioner do not develop because of something read out of a book; rather, they are a function of a way of living and thinking defined by the culture in which a person immerses himself or herself (Kegan, 1994). These values were similarly described by the Interprofessional Education Collaborative Expert Panel (2011) values and ethics for interprofessional practice, roles and responsibilities, interprofessional communication, and teams and teamwork (p. 22).

Cultural competence is included in three different core competency domains according to the IPEC (2011). Under the values and ethics competency the IPEC stated,

"Respect the unique cultures, values, roles/responsibilities, and expertise of other health profession" (p. 19). Regarding the roles and responsibilities domain, IPEC summarized, "Engage diverse healthcare professionals who complement one's own professional expertise, as well as associated resources, to develop strategies to meet specific patient care needs" (p. 21). And about the teams and teamwork domain, IPEC included, "Engage self and others to constructively manage disagreements about values, roles, goals and actions that arise among healthcare professionals and with patients and families" (p. 25). The recommendation was that these core competencies should be achieved by the end of prelicensure or precertification education. The competences do not develop quickly, and an implementation strategy must ensure that students have time to develop these skills of IPE and collaborative practice training.

Jeffreys and Dogan (2012) examined the effectiveness of cultural competence education intervention in 272 associate degree nursing students. Students attended courses in the nursing curriculum where learner-centered strategies that emphasized cultural differences were integrated into the classes. The purpose of their research was to examine the differences in perceptions of novice and advanced students and identify if changes in confidence or perceptions followed this type of formal curriculum. Jeffreys and Dogan used pretest and posttest measurements using the Transcultural Self-Efficacy Tool (TSET) at the beginning and end of a four semester time period (2 years). The TSET uses a 10-point Likert scale rating the confidence for a number of items designed to test the cognitive, practical, and affective domains and has a total instrument reliability of .99 with Cronbach's alpha ranged from .97 to .98 for the total TSET and .95 to .99 for

the individual subscales. Data analysis revealed that a power of .80 was achieved, and statistically significant ($p < .05$) findings for ANOVA/ANCOVA. The threats to validity were maturation and history and the homogenous sample of nursing students.

Jeffreys and Dogan (2012) concluded that there was a relationship between cultural competence education and student's self-reported self-efficacy. The results indicated an improvement in the TSET scores for cultural competence with ongoing interventions in this 2-year study. Although Jeffreys and Dogan studied associate degree nursing students, I advanced the relationship to other healthcare professionals in this dissertation. Inclusion of the two of the variables in this dissertation, self-efficacy and cultural competence, was supported by Jeffreys and Dogan's work. To determine the effect of the learning environment, I surveyed students during the preclinical phase of the curriculum.

Adult education and social learning theories provide a theoretical framework that can be applied to many IPE models, although IPE research has yet to identify a single theoretical framework. Mann et al. (2009) highlighted the challenge of assessing IPE in the literature because of the lack of consistent frameworks and terminology. Another challenge that resulted from the lack of frameworks and outcome measures was measuring the effect of IPE interventions (Mann et al., 2009). Further exploration has been recommended in determining the theoretical framework best suited for an IPE model (Mann et al., 2009). If there is an agreed upon framework, there should be improvements in the quality of research related to IPE.

Reeves et al. (2011) conducted a review of 107 papers related to IPE and interprofessional collaboration; the review included 54 papers with the purpose of theoretically and empirically testing what was presented in the research for each. They attempted to identify key concepts related to IPE and interprofessional collaboration and determine if the terms were used accurately in the literature. They explored IPE theory reported and aimed to develop a conceptual framework that would bring key interprofessional constructs together.

Reeves et al. (2011) found that only 19 studies reported the use of conceptual or theoretical frameworks, which limited their ability to provide suggestions about which framework best supports IPE or interprofessional collaborative practice. There were IPE interventions reported in studies that encompassed educational, organizational, and practical setting interventions. The scope of these interventions including prelicensure, postlicensure, and format of interventions made it challenging to draw strong conclusions for the objective of their work on IPE during this review; however, it did broaden the overall knowledge of IPE. The lack of consistency in the models and frameworks used with IPE interventions and programs was identified, as well as inconsistent selection of outcomes assessment tools used to assess the effectiveness of IPE.

Based on that review of the literature, Reeves et al. (2011) proposed the interprofessional framework (p. 170) provided structure to much of the research on IPE and other interprofessional aspects. They proposed a framework that would define and organize interprofessional research in the areas of IPE, interprofessional practice, and interprofessional organization. They recommended that research related to

interprofessional practice and interprofessional organization be limited to postlicensure health care practitioners. The depth of the authors' conclusions was limited by the lack of quality research in IPE. The authors suggested that finding ways to measure changes in attitude, knowledge, or skill with long-term outcomes would advance the development of IPE programs and interprofessional health care. The value of their work, however, shed a hopeful perspective for future research and the need for well-defined theoretical frameworks and clear operational definitions that are supported by data.

For this dissertation research, both Bandura's (1977) social learning theory and Kegan's (1994) sociocultural adult learning theory provided appropriate theoretical foundations for research in self-efficacy and cultural competence as they relate to IPE. An underlying component of social and adult learning is the learning environment that fosters the transformational learning process. Understanding the students' perspective of their learning environment may help physical therapy programs develop curricula and learning cultures that students prefer. The educational experiences of health care students should be examined as professional medical education strives to apply the ideals for IPE so that students and educators embrace a social and cultural awareness that would prepare them to meet the needs of society (Gilbert, 2006). The next section of this chapter explored environmental aspects of learning, including the value of the students' perspective of their learning environment.

Brookfield's Reflective Lenses for Learning

In this section of the chapter, I discuss the relationship between self-reflection, intrinsic motivation, and perceived connectedness to the learning environment and

society. The value in understanding this relationship is important when attempting to learn about PT students in their learning environment. The section concludes with a summary of how social and adult learning theories as well as reflective lenses for learning complement learning environment theory.

Bandura (1977) and Kegan (1994) suggested that there is a relationship between an individual and his or her environment that influences behavior and connectedness to society. Both IPE and collaborative practice stress the value of autonomy and independent thinking for individuals with high levels of self-efficacy and sensitivity to societal issues. The relationship between these constructs further supports the rationale for including social and adult learning theories as interdisciplinary frameworks (Roessger, 2012) for this dissertation research on self-efficacy, cultural competence, and perception of learning environment in PT students.

Critical reflection is imperative to the quality of an educator's career (Brookfield, 1995). Brookfield (1995) shared ideas about critical reflection and posited four lenses for teaching to be viewed in facilitating the process of change to improve education. The first critically-reflective lens emphasizes the teachers' self-reflection through personal examination of their own experiences as a student and as a teacher, called autobiographies (Brookfield, 1995). Brookfield suggested that critical reflection helps teachers identify individual biases or styles based on their experiences as a student that they may now demonstrate as part of their teaching styles. This process can strengthen the relationships between teachers and students (Brookfield, 1995).

Brookfield (1995) described the second lens as the process of seeing self as a student as a way to learn more about the teacher–student relationship in the classroom. When applying the concept of the second lens, a teacher is seeking regular student feedback on their perceptions and realities of the classroom through anonymous feedback. This often helps create better communication and more impactful teaching because the teacher actually wants to know more about the student experience for both the academic and social climate that they encounter in class.

The purpose of the third critically-reflective lens is to enhance teaching practices through collegial experiences, such as peer review with self-reflection (Brookfield, 1995). Brookfield (1995) suggested that this builds on the first lens of more private assessment and reflection because here the collaborative discussion about common teaching themes and challenges is discussed in a positive, collegial way. The fourth lens of the critically-reflective process is teacher engagement with the literature and research on education. Brookfield encouraged teachers to learn from scholar educators to gain understanding on pedagogical effectiveness and learn strategies for creating an environment of student connectedness. Teachers need to master the critical reflection of understanding themselves, their students, the learning environment, and how each component is interconnected to the others.

Brookfield and Holst (2011) introduced their theory of adult education with the foundational premise that adult learning needs to encompass the worldview that the individual and society are connected. They acknowledged that there exists a multitude of learning theories; however, they elaborated on the value of educators providing s a

cultural framework emphasizing service and diversity. Brookfield and Holst described three areas of development that included individuals' self-awareness and identity and how they fit into a larger group, the ability to demonstrate socialist values in a cultural situation, and being able to hold individual values within the complexities of other societal groups.

Adult education encompasses such varied philosophical frameworks regarding thinking and human development that it becomes easy to lose sight of one of the most prevalent reasons adults seek education: the impact on their role in society and upon having a sustainable economy to survive (Brookfield & Holst, 2011). Brookfield and Holst's (2011) theory focused on the connection between transformative learning in the scope of adult education and that of globalization of social and economic developments (p. 144). In order to achieve this, adult learners must be intrinsically motivated.

In the adult learning environment, educators must create diversity both intrinsically in the interactions among the members of the group and extrinsically to society (Brookfield & Holst, 2011). They noted, "The more diverse are our work and educational practices, the more that social arrangements reflect the widest possible range of preferences and the more that the people's different passions and individual interests are encouraged, then the healthier a society will be" (p. 216). PT students need exposure to diversity in the learning environment because as they integrate into health careers they are faced with a diverse population of people to treat. The more comfortable students feel working with individuals of varying cultures, the more likely they are to deliver effective health care services and work toward the creation of a healthier society.

Brookfield and Holst (2011) similarly proposed that a democratic socialist education learning should include: "internationalism, anti-imperialism, intrinsic motivation of love and empathy, discipline, honesty, truth, self-criticism, flexibility in thinking, audacity, an orientation toward service, a willingness to sacrifice, and a rejection of privilege" (p. 89). Salter (2012) articulated the importance of the students' engagement by the teacher in an environment that stimulates thinking, collective sharing and critique, as well as motivating students to advance their commitment to the world around them. Salter and Brookfield and Holst (2011) stated alike that intrinsic motivation of students within a learning environment does not just happen; there must be a stimulus from the environment, and the teacher should attempt to ensure the adult learner actually feels motivated to work toward changes, both personally and socially. Brookfield and Holst (2011) described this intrinsic motivation as a phenomenon that develops over time and compels people to work for social justice.

The learning environment as described by Salter (2012) is a direct conduit to the energy and motivation of the people within the group and how they move forward with meaningful contributions to self-development and to society. Thereby, the environment where adults learn must synthesize the theories of adult education, with the understanding that adult learners need to be connected and committed to society and diversity to live to their full potential. Brookfield (1995) and Salter (2012) both stated the idea that people have a connection to their environment that can impact their performance, thinking, or mindset. In Brookfield's (1995) theory of critical reflection, he highlighted the influence that of teachers on the success of their students and suggested that educators should

introspectively examine their teaching styles in order to create a positive learning environment. Furthermore, Brookfield (1995) proposed that educators advance teaching expertise and effectiveness through collaborative sharing of pedagogical themes. The intercollegial experience of sharing ideas and providing feedback is an example of the critical reflection necessary both within and outside of the classroom (Brookfield, 1995, p. 36). Bridges et al. (2011) looked at three best practice models for IPE and reported that educators and institutional leaders identified commitment, attitude, and sense of community as key attributes to the success of their programs. Some of what Bridges et al. reported about the successful IPE programs is similar to the findings of Brookfield's (1995) theory of critical reflection.

Van Soeren et al. (2011) conducted a qualitative study of 152 clinicians, 101 students, and nine facilitators who participated in various simulated IPE teaching and learning experiences. Enthusiasm and motivation, professional role assignment, scenario realism, facilitator style, and background and team facilitation were the main themes associated with effective IPE teaching and learning. This type of qualitative observational research supports the message that Brookfield (1995) conveyed about critical reflection.

Salter's Environmental Types

Salter's (2012) environmental type theory highlights the relationship between the psychological types of people and the multidimensional characteristics of their respective environments. Salter developed an environmental type questionnaire (SETA), a validated instrument that can assist in evaluating an environment such as the workplace, home, or

classroom. In this dissertation, the environment was the learning environment of the learning experience as a whole, either the traditional or interprofessional curricula.

Salter (2012) looked beyond the Myers-Briggs (1998) typology of an individual's self-reported personality style and examined the role of the environment in learning. The Myers-Briggs Type Indicator categorizes individuals as extraverted, introverted, perceiving, sensing, judging, thinking, and feeling. Salter (2012) suggested that educators learn what type of personalities their students have so as to better relate to the classroom environment. Salter found it important for educators to identify and understand the dynamic nature of personal, group, and organizational culture on the processes of teaching and learning. The thoughts and behaviors of the individuals actually contribute significantly to the environment where the learning occurs (Salter, 2012). The enthusiasm and perceived cohesiveness within a learning environment can impact learning (Devlin-Cop, MacMillan, Baker, Egan-Lee, & Reeves, 2011; Fisher & Kent, 1998).

Van Soeren et al. (2011) conducted an analysis of an interprofessional teaching and learning process through a role play IPE experience during a one day, 8-hour workshop. The activities included interactive assignments that focused on role play, role identity, communication, and collaborate care. There were 152 clinicians and 101 students representing pharmacy technicians, paramedics, nursing and occupation therapy/PT assistants, social work, speech language pathology, PT, and medicine. Data were collected through video of the learning activities and interviews with focus groups. The themes identified from this IPE experience were: enthusiasm and motivation,

professional role assignment, scenario realism, facilitator style and background, and team facilitation.

The qualitative results from this study highlighted that the enthusiasm and motivation within the learning environment were essential to the quality of the educational experience (van Soeren et al., 2011, p. 439). Additionally, role play and scenario realism were valuable strategies in the IPE workshop according to the observational methods used in the study. The role of the facilitators was instrumental in the quality of the role play and interprofessional activities, and the researchers concluded that creating a positive learning environment largely depends on the facilitator. Although this study captured a unique qualitative insight to effective teaching and learning strategies for IPE, the small sample size, observational data collection, and group interviews may have limited the depth of data reported. The value van Soeren et al.'s (2011) study to this dissertation is that there is a relationship between the type of learning environment and the student's motivation to learn in an IPE environment.

Persaud and Salter (2003) explored the relationship between the thinking-feeling dimension of learning style and perceived classroom climate in 142 female college students. They also explored the relationship between the thinking-feeling dimensions on the level of participation. The participants in the study represented 72 education students who were labeled as traditional female major and 70 engineering students who were labeled as a nontraditional female major in their study.

In Persaud and Salter's (2003) study, participants completed the MBTI (Briggs & Meyers, 1998), the Salter Environmental Type Assessment–Experimental Form A2

(SETA; 2013), and the Classroom Participation Survey (CPS; 2003). The SETA was completed with the environment as the class, the people were their peers, and the tasks/activities were the subject matter of the class (Persaud & Salter, 2003). The reported reliability of the scale for the thinking-feeling category used in their study was .90. The CPS question used in the data analysis was related to the student being an active participant in class, with responses of *neutral*, *did participate*, or *did not participate*.

Results indicated that thinking women did not have a preference for either a thinking or feeling classroom environment (Persaud & Salter, 2003). Feeling women reported a positive fit in feeling classrooms (SR = 4.88 $p < .0001$) and in thinking classrooms they reported a negative fit with standard residual equal to 3.40 ($p < .0007$). This study provided insight on the relationship between learning style preferences and the atmosphere of learning environments in college women. Persaud and Salter recommended that activities that foster an interactive classroom environment should be considered by faculty to engage students in interpersonal interactions and in courses where that may be more difficult out of class support should be encouraged. The authors stated the importance of understanding different learning and teaching styles to enhance learning and promote interactions among individuals.

The work by Persaud and Salter (2003) supported the research in this dissertation on self-efficacy, cultural competence, and perception of learning environments as variables using students in both traditional and IPE physical therapy curricula because of the value in knowing the relationship between personality types and how that understanding can be related to participation in a certain type of learning environment.

IPE is a dynamic, interactive, learning culture that commonly uses group interactions and patient case simulations as a means to advance the communication and professionalism among students (Gilbert, 2005). Understanding that PT students may have challenges in an IPE environment because of their personality types may help PT educators design activities that foster a positive learning environment that slowly integrates more introverted students to this relatively dynamic extraverted learning environment.

To summarize, in this section I discussed the social and adult learning theories of Bandura (1977), Kegan (1994), and Brookfield (1995), coupled with the environmental type theory of Salter (2012), as encompassing similar principles of self-motivation, modeling behaviors, and connectedness of self to others or the environment. Teachers need to be engaged in the process of teaching and learning so that students are motivated to commit to learning (Salter, 2012) and to the world around them (Brookfield, 1995). The next section of this chapter explores how these theoretical frameworks are and are not being used in the IPE research.

Interprofessional Education

In the previous section, I analyzed environmental aspects of learning. The IPE learning environment is dynamic in nature and requires attention in the delivery format to ensure that students are learning with each other, from each other, and about each other (Gilbert, 2005). In this section of the chapter, I provide an in depth review of the IPE models and frameworks. Additionally, I highlight aspects of successful programs that build the foundation for why social and adult learning theory are best suited frameworks for this study.

Although numerous proposed theoretical frameworks complement both IPE and collaborative practice, they have been minimally addressed in the existing research (Roessger, 2012; Sargeant, 2009). In a review of the literature, Martin-Rodriguez, Beaulieu, D'Amour, and Ferrada-Videla (2005) found that a social system where collaborative practice most effectively takes place is common among successful health care teams. The PT profession needs to begin using a structured framework in the development and implementation of IPE and collaborative practice initiatives that embrace the core competencies outlined by the Canadian Interprofessional Competency framework (Bainbridge, Nasmith, Orchard, & Wood, 2011).

Martin-Rodriguez et al. (2005) also determined a distinct social cultural theme in many of the organizations they reviewed, thus quantifying a significant correlation between the preferences of individuals and the collaborative nature of an organization. In order to better grasp the interconnectedness needed for collaborative practice, there needs to be additional research conducted to examine the relationship of various determinants that foster collaboration. Sargeant (2009) reviewed IPE theories and proposed that IPE be viewed through a social learning lens because its foundation stems from various adult and experiential learning frameworks, including but not limited to situated learning, communities of practice, and reflective learning (p. 179, 182). Sargeant asserted that Kegan's (1994) learning theory summed up much of the framework for IPE, including the cognitive, physical, and emotional transformation that occurs by participating in an IPE experience (p. 182). Sargeant concluded that a common theme for IPE was that its

dynamic nature may not align with just one theoretical framework, and further, that multiple perspectives be considered.

IPE is not well-established from a research framework or methods perspective; nor did it lend itself to definitive measures related to patient outcomes (Reeves et al., 2010). However, professional development and opportunities to expand the breadth and depth of IPE were promising, suggesting that evaluation methods used to measure the impact of IPE demand exploration (Pecukonis, Doyle, & Bliss, 2008). Gilbert (2005) similarly avowed the need for higher education to collaborate with health care systems in shared responsibility of collaborative practice, building relationships, and fostering a cultural of a shared health care vision.

In 2010, the Commission on Education of Health Professions developed a model for educational systems in an attempt to connect the health and education systems (Frenk et al., 2010). The Commission identified institutional design, instructional design, and educational outcomes as three of the initial components of this model (p. 1928). IPE encompassed at least three levels of learning, including the informative, formative, and transformative levels, as well as interdependence between aides in the development of patient-centered, collaborative healthcare professionals (Frenk et al., 2010, p. 1952). This dissertation looked at some of the potential variables (self-efficacy, cultural competence, and perception of environment) that influence students in IPE curricula.

Currently, with the development of IPE and advancement of interprofessional collaborative practice, institutions are challenged with creating a single model that will work for all programs because of the varying backgrounds of each of the professions

(Graybeal, Long, Scalise-Smith, & Zeibig, 2010). Graybeal, Long, Scalise-Smith, and Zeibig (2010) conducted a qualitative study of 10 interprofessional institutions to learn more about the aspects that contributed to the success of their learning development and sustainability. Structured phone interviews were conducted and a constant comparative analysis of the responses was completed. Of the institutions included in their study, nursing and pharmacy programs were included in all 10, with social work and medicine in nine, physical and occupational therapy in seven, public health in six, with dentistry, lab sciences and communication disorders in four of the 10. In two of the 10 institutions, a dental hygiene, nutrition and nuclear medicine technology learning was represented and only one learning of audiology, clinical vision science or other related program.

Graybeal et al. (2010) reported that investment from the faculty and administrators in their willingness to potentially change the institutional culture and embrace IPE rather than have it imposed are key factors to the success of IPE (p. 234). Furthermore, the themes from the data suggested that multiple levels of support are needed from faculty, clinical preceptors, students and accrediting organizations to be successful. The participants also reported common challenges with the development and implementation of IPE such as faculty resistance, scheduling logistics, and the number of qualified clinical supervisors who can emulate the interprofessional collaborative model of healthcare.

The limited number of institutions included in this study by Graybeal et al. (2010) may reduce the generalizability of the results; however, the depth of the answers of the participants provided valuable insight into the challenges and opportunities faced by

institutions that have successfully implemented IPE programs (Graybeal, Long, Scalise-Smith, & Zeibig, 2010). Their research provides a unique insight to the challenges that programs experience and may be one of the reasons why there was a lack of physical therapy specific information in the IPE research.

One of the goals of IPE is to develop the skills of healthcare students in a way to best prepare them for a role on an interprofessional team (Bridges et al., 2011; Wilhelmsson et al., 2012). Bridges et al. (2011) identified the importance of the student's ability to embrace a professional identity through engaging in the process of understanding the roles of other professionals in a review of the three best practice IPE programs, Rosalind Franklin University of Medicine and Science, the University of Florida, and the University of Washington. The 2004 curricular courses at Rosalind Franklin University of Medicine and Science included didactic, service learning, and an interprofessional clinical component (Bridges et al., 2011). Students from allopathic and podiatric medicine, clinical laboratory, nurse, anesthetists, pathologists, psychology, and physician assistants were grouped into 16 member teams. Bridges et al. (2011) reported that in the first phase the students attended a 90 minute small group session and completed a service learning project that they presented to the community. Students were surveyed and the majority of students found it to be a positive experience. The optional component to the curriculum was a clinical internship with students from other professions; however, this was limited because of limited clinical sites. In the second phase of the curriculum, students attended a one-credit course on culture while

concurrently working on group projects related to patient education and interviews in a mock clinical scenario.

The University of Florida developed a community outreach learning experience in all first year students (Bridges et al., 2011). There were approximately 615 students representing medicine, dentistry, pharmacy, nursing, PT, psychology, public health, and nutrition programs who were grouped into teams. Over two semesters, the teams met with a family from the community for a 2-hour session. They worked on learning objectives for each meeting with the family and then present a cumulative project at the end of the second semester.

The University of Washington developed an IPE curriculum in 1997 (Bridges et al., 2011). There students from medicine, pharmacy, nursing, social work, public health, and dentistry selected electives from 50 course offerings. They were required to take a course in addition to participating in interprofessional team patient simulation labs and community outreach to rural and underserved areas throughout their time in the program. The common elements of the three best practice programs included responsibility, accountability, coordination, communication, cooperation, assertiveness, autonomy, mutual trust and respect (Bridges et al., 2011) and each aligned with the competences set forth by the Canadian Interprofessional Health Collaborative (2010).

Bridges et al. (2011) also recommended that curricular efforts supporting IPE need both quantitative and qualitative assessment of the didactic and community-based learning experiences to enhance outcomes of individual programs. Qualitative studies would afford greater depth of understanding to the experiences that students have in

interprofessional learning situations. There have been a number of quantitative research studies on IPE (Arenson et al., 2010; Bridges et al.,2011; Curran et al., 2007; Curran et al., 2008; Goldenberg et al., 2005; Reeves et al., 2010) only a few have focused on physical therapy students (Dubouloz et al., 2010; Jackson, 2011; Theile & Barraclough, 2007). In this dissertation, I will closely examine physical therapy students using quantitative analysis, which may help learning and curricular development in IPE for physical therapy curricula.

IPE and collaborative practice require commitment of individuals to the core competences – including shared respect, esteem, and trust from all members of the interprofessional team (Gilbert, 2005, p. 35). The Committee for Cultural Competence of the APTA (2008) identified excellence, professional duty, and social responsibility as Core Values of an entry-level physical therapist graduate. Thiele and Barraclough (2007) suggested that the core values of the APTA be incorporated as a part of the IPE framework as proposed by IPEC (2011).

Reeves et al. (2010) conducted a Cochrane systematic review of databases from 1999-2006, including 1801 abstracts. The inclusion criteria were that only IPE studies that used randomized controlled trials, controlled before and after, and interrupted time series designs were used (p. 231). The objectives of the study were to examine the effectiveness of IPE interventions as compared to interventions where the students were learning separately, or where control groups did not receive a separate intervention (p. 232). There were six studies fulfilling the inclusion criteria; however none of the control groups received educational intervention.

Reeves et al. (2010) did not identify any studies that examined the effectiveness of IPE interventions compared to other educational interventions where the same professions were learning separately (p. 233). This is a meaningful point because the current body of research has not done a comparison with the same group of students within one professional group of study. They also found that there was considerable variation as to when data was collected – some in four and six month intervals – and only one had a one year follow-up after the IPE intervention; most of the sample sizes were small or of unequal number of groups, which posed a threat to external validity (p. 238). Other limitations they identified in the review of studies were the varying re-assessment points after an IPE intervention or experience was introduced, such as four and six months thus limiting the exposure time to measure change.

One of the recommendations from Reeves et al. (2010) was for future studies to examine comparisons between IPE and uni-professional approaches with larger populations and a mixed method research design (p. 239). Although mixed-methodology research design will not be used in this dissertation, the quantitative data collection will scrutinize the relationship of variables in physical therapy students in IPE versus traditional curricula, and the measures will be taken during after several months in the learning but before a full time clinical internship of 6 weeks or more to ensure students have had adequate exposure to each of the programs.

In summary of this theoretical framework section, the relationship between the learning environment and socio-cultural influences on adult learners (Brookfield, 1995; Kegan, 1995) bears note as well, as does the impact of the learning environment on the

transformational learning process (Kegan, 1995). Salter's (2012) work on environmental type supplements the socio-cultural thinking of Bandura (1977), Brookfield (1995) and Kegan (1994). In the next section of chapter, the rationale for theories selected and the relationship to this dissertation are discussed.

Theory Rationale and Relationship to the Study

In this section of the chapter, I provided a summary of the theories outlined in the previous section. First, I reviewed Bandura's (1977) social learning and adult education theory (Kegan, 1994) and the reflective lenses of learning (Brookfield, 1995). Then I covered Salter's environmental type indicator theory and the relationship of each to this IPE dissertation research.

As outlined by Reeves et al. (2011) a challenge existed in identifying the best conceptual and theoretical frameworks for IPE. Social learning and adult education principles have been used as the foundation in some IPE research (Mann et al., 2012). Bandura's (1977) social learning theory was rooted in the constructs of self-efficacy, modeling, and observational learning while Kegan's (1994) transformational learning theory combines socio-cultural life perspectives to learning. The vision of IPE of healthcare students being prepared to work on interprofessional teams and face challenges in a professional way (Bridges et al., 2011; Gilbert, 2005); seemed to compliment these theories.

Brookfield's (1995) reflective lenses for learning outline relationships between self-reflection, intrinsic motivation and connectedness to the learning environment. Critical reflection of teachers and students is necessary for building interconnectedness in

the learning environment. This type of interconnectedness can be useful in developing the skills needed to work on teams and demonstrate effective teamwork skills as outline in the core values for IPE presented by the Interprofessional Education Collaborative Expert Panel (2011).

Salter's (2012) environmental type theory was valuable to this dissertation research because of the relationship between student's perceptions of their learning environment and the type of physical therapy curricula. Understanding the value of how a learning environment was perceived by the students embraces the overall learning and level of motivation of the students. IPE is conducted in a dynamic interactive learning environment (Gilbert, 2005) and understanding more about the traditional and IPE learning environments may advance teaching and practice, especially in traditional curricula.

The IPE model programs such as those at Rosalind Franklin University of Medicine and Science, the University of Florida, and the University of Washington highlighted by Bridges et al. (2011) shared a common vision that students will develop their interprofessional educational and clinical skills through transformational and service learning while participating in opportunities to apply their individual skills as part of an interprofessional team. However, there appeared a need to learn more about self-efficacy, cultural competence, and perceptions of learning environment in students prior to clinical internships as a way to help prepare them for that portion of professional study with greater confidence and a strong sense of professional role that was explored in this dissertation. In this dissertation, there was an integration of social and adult learning

theory as related to physical therapy student's self-efficacy, cultural competence, and perception of learning environment in traditional verses IPE curricula. The next section of this dissertation chapter reviewed these variables and concepts specific to this dissertation research.

Literature Review Related to Key Variables and Concepts

In this section of the chapter contains a review of the research supporting use of the social and adult learning, and learning environment theoretical frameworks in IPE research centered on self-efficacy, cultural competence, and learning environment variables for the present research. First, I reviewed self-efficacy and cultural competence, followed by research on learning environment including attitudes and perceptions.

Self-Efficacy

The role of self-efficacy in the success of physical therapy students has not been well-established in the literature. The major works, however, are highlighted in this section of the chapter. The ability of a person to change behavior or experience personal mastery has been associated with self-efficacy (Bandura, 1977) and well established in several studies. Self-efficacy has been examined in some of the research related to professional medical education and the relationship of the construct to learning and success (Goldenberg et al., 2012; Townsend & Scanlan, 2011).

Communication training for health care students has been shown to increase self-efficacy (Norgaard, Ammentorp, Kyvik, & Kofoed, 2012). Problem-based learning has been shown in nursing research to show improvements in self-efficacy as well (Darkwah, Ross, Williams, & Maddill, 2011; Jungert & Rosander, 2010). There have been studies

with pharmacy students that measure the impact of training to improve self-efficacy and ultimately enhanced patient care outcomes (Dahl & Hall, 2013; Jungert & Rosander, 2010). There have been general studies in college students where measures of self-efficacy have proven valuable in educational outcomes and application of skills (Bernadowski, Perry, & Del Greco, 2013; Goto & Martin, 2009; Kek & Huijer, 2011). Although each of these studies examined self-efficacy, none looked specifically at the variables in this dissertation. Consequently, there appeared to be a void in the research related to self-efficacy of physical therapy students prior to clinical internship.

Mann et al. (2012) examined 209 pre-licensure health professional students enrolled at a university in an intermediate educational session using a self-efficacy scale rooted in Bandura's (1977) collective self-efficacy concept. The research identified a notable relationship between the learning models of IPE and the cognitive and behavioral interactions of Bandura's social learning theory. First, Mann et al. (2012) conducted a pilot study with students grouped according to profession of study. One group consisted of diagnostic cytology, dental hygiene, dentistry, diagnostic ultrasound technology, human communication disorders, medicine, nursing, occupational therapy, pharmacy, physiotherapy, and social work with 111 participants. The other group consisted of 57 participants from health and human performance, health promotion, health services administration, kinesiology, and medical science.

Mann et al. (2012) analyzed results from the 16-item survey using MANOVA; data were compared within and between groups. The highest scored items were those that required students to work with students from other professions and the lowest scores

were for items related to communicating the role of a team and team feedback. Self-efficacy was found to be strongly influenced through interaction and role modeling experiences according to Bandura (1977). IPE in Mann et al.'s (2012) study was delivered in a dynamic learning environment where advanced social skills and individual confidence were required (p. 93).

The main limitation of the study was lack of face and content validity and the mean score being used to replace missing scores (Mann et al., 2012). Mann et al. (2012) specifically suggested that future research encompass the differences in sub-scale scores for self-efficacy among individual disciplines (p. 98). This scale was useful for this dissertation because it measures the construct of self-efficacy. Mann et al. noted, "Measures of self-efficacy may predict the willingness to persist in the difficult and challenging aspects of IPE and collaborative practice" (p. 98). Similar to Mann et al. this dissertation aimed to learn more about the self-efficacy beliefs of physical therapy students that may have impact on IPE curricular initiatives.

Case study, role play, and simulation are teaching methods common to health professions education (Goldenberg et al., 2005). In a quantitative research study rooted in Bandura's construct of self-efficacy, 66 third-year nursing students completed surveys before and after two days of patient care simulation training. The purpose was to measure changes in self-efficacy using these educational methods during a two-day training module. The Baccalaureate Nursing Student Teaching-Learning Self-Efficacy Questionnaire was the instrument used to collect the perceptions of the nursing students. The parametric test results of only 22 participants indicated that there was a statistically

significant ($p < .001$) difference between the pre- and post-workshop for overall confidence related to health teaching and their ability to assess, implement, and evaluate a health plan.

A limitation to the Goldenberg et al. (2005) study was that students were also participating in clinical practice at the same time as this study, possibly influencing changes in self-efficacy identified in the survey results. This was a consideration for this dissertation's research because the physical therapy students were surveyed prior to clinical internships. Additionally, the small sample size in the Goldenberg et al. study made it difficult to generalize results. They suggested that a future study be completed with a larger sample size, with data collection before and after interventions, and at a less-busy time of the semester. It would have been helpful to see their data presented in table form to better see the specifics of the results rather than in narrative form only.

In order to foster effective collaboration between healthcare professionals in an interprofessional setting many things must be considered. The foundation for many of the research studies in IPE and interprofessional collaborative practice are rooted in the core competencies outlined by the Interprofessional Education Collaborative Expert Panel (Ateah et al., 2011). To be an effective communicator in a group, one must be confident of their individual professional role and identify with perceptions that may exist about other professions (Ateah et al., 2011). The perceptions that professionals have about one another can impact relationships and communication between members of the healthcare team. Ateah et al. (2011) deemed this as a key construct in a pre- and posttest mixed methods experimental design used to examine if various attributes of pre-licensure

health professions students could be influenced by an IPE and/or practice immersion experience (p. 209).

The study by Ateah et al. (2011) included 51 participants representing dental hygiene, dentistry, medicine, nursing, occupational therapy, pharmacy, and physical therapy. The sample of students was randomly assigned to a control group, a classroom education group, or an immersion group. The immersion group received a two-and-a-half day classroom education on IPE and collaborate practice with the education group but they also had a clinical experience. Pre- and post-test measures using the Student Stereotypes Rating Questionnaire (SSRQ) was used to measure interpersonal skills, professional competence, leadership, academic ability, being a team player, being an independent worker, confidence, decision making and practical skills (p. 210).

Ateah et al. (2011) completed a one-way ANOVA for comparisons between groups to identify trends of demographic and learning information. A two-way repeated measures ANOVA with post hoc tests examined differences between groups with .05 as probability. The results indicated no significant differences between demographic traits or programs of study. The results specific to physical therapy student confidence were interesting.

Ateah et al. (2011) reported the average confidence of students at baseline for physical therapy was 4.14 and increased to 4.63 as compared to 4.29 to 4.56 for dental hygienists, 4.47 to 4.81for dentists, 4.73 to 4.87 for physicians, 4.15 to 4.69 for nurses, and 4.23 to 4.63 for occupational therapists. Although all groups of students in the immersion group had a statistically significant increase in scores, physical therapy

students scored the lowest in both pre- and posttest scores. All of the scores for students in the classroom only and the classroom and clinical immersion experience increased and the immersion group did not have statistically significantly higher scores than classroom only. Ateah et al. (2011) proposed that there is value in classroom only IPE and collaborative practice learning environments on the overall scores of the SSRQ. Additionally, none of the scores on the SSRQ decreased supporting the idea that interprofessional learning is valuable (p. 212).

The small sample size in the study by Ateah et al. (2011) was a limitation and statistical power was not reported despite the intervention being implemented. The authors highlighted that their work compared the effects of IPE with and without immersion and suggested that future studies should consider a design that compares the effect of an education or a clinical immersion intervention. As a result, their study highlighted the need for additional research for both physical therapy student's confidence as well as the type of intervention.

The benefits of interprofessional learning and collaborative practice are many, with much of the focus on improved patient outcomes because practitioners are more knowledgeable and respectful of each other's roles and positive attitudes promote a team approach to patient care (Davies et al., 2011) These benefits apply to physiotherapists (physical therapists), the physical therapy profession, and enhanced patient care as a part of the foundation for a study of physiotherapy student perceptions and experiences of an interprofessional learning experience at one university (Davies et al., 2011).

Davies et al. (2011) recruited 97 third year physiotherapy students in their final year of study from one university participated in a research study aimed to learn about their individual perceptions of interprofessional learning and about the IPE experiences that were beneficial. A questionnaire was completed by all of the students and 12 students volunteered to participate in a focus group, eight students were randomly selected to participate in an hour long conversation about their interprofessional experiences.

The mixed method study by Davies et al. (2011) reported the demographics of the participant's age range 20-24 years, 88% were female, and 12% were male. The first series of questions was related to how the interprofessional learning impacted other university learning and learning during clinical placements. Davies et al. (2011) discovered that 31% of students felt that interprofessional learning helped them with other courses, 58% thought the interprofessional modules were clinically relevant and 69% found that the interprofessional learning during clinical placement was significant. Interprofessional learning had a positive impact on clinical relationships in 45% of the students, and 47% found it beneficial for working as part of an interprofessional team. Only 35% of the students reported a better understanding of their professional role, and that their identity as a physiotherapist was impacted. The themes identified in the focus group were that the understanding of their roles and the roles of other members of the healthcare team resulted in better patient care. Additionally, self-confidence was not clearly defined by the questionnaire; however, in the interview students reported that

interprofessional learning had a positive impact on their self-esteem and resulted in confidence and pride when communicating with the team (p. 142).

The research by Davies et al. (2011) was one of the few studies that honed in on physical therapy (or physiotherapy) students perceptions of interprofessional learning or their IPE experiences. Interestingly, the results from the questionnaire suggested that students found the curricular experiences beneficial; however, it did not clearly report changes or perceptions of self-efficacy, cultural competence, or perception of their learning environment. The survey used was not validated and posed a threat to the internal validity of the study; and the focus group was a small number of students limiting representation of the greater whole. In this dissertation, exploring variables that influence the perceptions and experiences of physical therapy students was expected to contribute to curricular advancements though integration of IPE and interprofessional leaning activities that emphasize cultural competence and self-efficacy in a positive physical therapy learning environment prior to the internship. Davies et al. (2011) reported students felt that the pre-clinical interprofessional learning experiences were beneficial for their clinical placement and supports further investigation in this dissertation about the student perceptions in traditional versus interprofessional curricula before clinical interprofessional learning takes place.

Implementing an interprofessional curriculum is a challenge for most organizations, especially given the lack of evidence supporting educational models (Swisher, Woodard, Quillen, & Monroe, 2010; Thiele & Barraclough, 2007). Specifically, physical therapy models and curriculum have not been well established in

the literature. The University of South Florida implemented a program for physical therapy and medical students, proposing a framework that implemented a centralized and decentralized model for students during the program. They outlined a curriculum and provided an overview of some of the interprofessional learning activities. Although, the University of South Florida programs were reported successful, no specific data was collected from students or faculty as an outcome measure. Their work further confirmed the need for specific measures exploring IPE and collaborative practice initiatives in physical therapy curricula.

In summary, self-efficacy is a valuable construct that often contributes to student success in an academic environment. Furthermore, the demand for social interaction between members of the medical team requires a clinician to demonstrate a strong sense of self-efficacy. This dissertation research explored the self-efficacy of physical therapy students prior to a long term clinical internship experience. The next section presents the research literature on cultural competence.

Cultural Competence

Current cultural competence research in the medical field is addressed in this section of the chapter. First, the need for cultural competence in the medical field is reviewed. Then cultural competence models, relationship to improved clinical outcomes, and benefits of cultural competence training are presented.

Healthcare disparities for minority groups are on the rise, and health care outcomes are declining (World Health Organization, 2010). The growing health disparities of diverse ethnic and cultural backgrounds are growing and pose challenges

for healthcare providers (Campinha-Bacote, 2002; Hawala-Druy & Hill, 2012; Institute of Medicine, 2003). The Institute of Medicine further suggested that the development of cross-cultural skills of healthcare providers might be the solution to this problem. The American Physical Therapy Association (APTA, 2008) created the Blueprint for Cultural Competence Education that was rooted in the Campinha-Bacote Model (2002) to address the need for improved cross-cultural skills of healthcare providers.

The Campinha-Bacote Model advocated a framework of cultural awareness, cultural knowledge, cultural skill, cultural encounters, and cultural desire (Campinha-Bacote, 2002, p. 182). The model addressed the concern that healthcare providers need to demonstrate cultural competence to provide quality care with an absence of individual biases or prejudices that might otherwise lead to cultural imposition (Campinha-Bacote, 2002). Campinha-Bacote (2002) claimed that health care providers need to be intrinsically motivated to provide quality culturally responsive care (p. 183).

Jackson (2011) sought to determine the effectiveness of cultural competencies of 18 physical therapy students at one university, via retrospective interviews, and questionnaires. When on clinical internships, physical therapy students completed several cultural competency activities including reading research papers, journaling, volunteering at community events, clinical internships, in-services, and participation in case studies (Jackson, 2011, p. 34-35) – all rooted in the Campinha-Bacote Model (Campinha-Bacote, 2002) and Blueprint for Cultural Competence Education (APTA, 2008). The American Physical Therapy Association (APTA, 2006) considers the Physical Therapy Clinical Performance Instrument (CPI) an appropriate tool for

measuring cultural competence of physical therapy students during a clinical internship. The goal at the end of the clinical internship was that students earn a score of "entry-level practice" indicating that they were ready to perform unsupervised clinical practice. The students and clinical instructor complete the CPI self-assessment with scores between them compared.

In Jackson's study (2011), students completed the CPI items for cultural competence with Cronbach's alpha .99 and strong construct validity and convergent validity. Additionally, all 18 of the students participated in post-survey semi-structured phone interviews that revealed 16 of 18 students reading articles, writing reflection papers and case studies, volunteering at health fairs, and conducting patient interviews – all effective ways to enhance their cultural competence. The data also indicated 83% or 15 of 18 students found that presenting an educational in-service training was helpful in developing their individual cultural competence. The opportunity for hands-on interaction with a diverse patient population was most beneficial to all students, with 100% of the students reporting entry-level performance of cultural competence by the end of internship.

Jackson's (2011) study was effective in demonstrating the benefits of cultural competence training for physical therapy students during their clinical internships. There was a small sample size, and students were all from the same university. The study demonstrated the value of cultural training as related to students' clinical internship as evidenced by the self-reported improvement in cultural competence reported by the students and final score on the CPI as entry level. The lack of evidence supporting

cultural competence or student's readiness to deliver competent care prior to internship instead of post internship was not established in the research.

Similar to the student's perspective of cultural competence training in Jackson's (2011) study, Hawala-Druy and Hill (2012) designed a semester-long interdisciplinary course—3 hours per week for 14 weeks—that addressed cultural competence and diversity, as a means of measuring the effectiveness of this intervention. The 106 participants were students from one Mid-Atlantic university but represented various health professions. The mixed-methods study extrapolated data collected from pre- and post- intervention through course evaluations, student feedback, reflective assignments, and the Inventory for Assessing the Process of Cultural Competence-Student Version (IAPCC-SV) by Campinha-Bacote (2002, p. 774). The IAPCC-SV was developed in 2007 as a student version of the Inventory for Assessing the Process of Cultural Competence for health care professionals and graduate students (IAPCC-R) in 2002. The IAPCC-R had a reported Cronbach's alpha equal to .75 and test retest reliability of .87. It was a 20-item questionnaire that used a Likert scale measuring different cultural constructs. The purpose of the study was to measure the effectiveness of interdisciplinary activities that emphasized cultural competence in an effort to enhance communication between students and promote patient-centered care.

Hawala-Druy and Hill (2012) concluded that overall there was a significant increase in post-intervention scores, including a significant increase across gender (males $p < .003$, females $p <. 001$), ethnicity (black $p < .001$, other $p <. 003$), and semester (p. 775). The differences ($p < .001$) in the IAPCC-SV scores from pre- to post-test improved

as the mean increased from 60.8 (pre) to 70.6 (post). The qualitative results revealed that all students found the course helpful in understanding that cultural competence is an ongoing process. This demonstrated a need for cultural competency in health professional education in order to create a learning environment that will assist students in overcoming barriers to communication with patients and the quality of their health care (p. 776). The Committee for Cultural Competence of the APTA (2008) similarly stated that the purpose of the Blueprint for Teaching Cultural Competence in physical therapy education was to empower faculty in the preparation of students in a culturally diverse manner for the health care needs of society (p.8).

The limitations of Hawala-Druy and Hill's (2012) study were that some of the participant identification issues resulted in data exclusion to an already small sample size. Some of the data analysis was done with non-parametric testing made it difficult to generalize the findings about the impact of cultural training. Lastly, the study outlined findings for nursing, pharmacy, and allied health students; however, there was not specific data on physical therapy alone.

Interprofessional cultural competence should improve collaboration and collaborative patient care by bringing professionals together during fully integrated interdisciplinary models of education (Pecukonis, Doyle, & Bliss, 2008). Hawala-Druy and Hill (2012) had significant results demonstrating the value of competence training, the weaknesses of their study was the lack of pre-intervention qualitative interviews and that they did not describe their data coding system well. Their research provided strong ideas for outcome assessment of cultural competencies but did not provide data inclusive

to physical therapy. Rather, it clustered all health sciences together. Learning more about the significant differences in cultural competence in physical therapy students may address the gap in the research proposed by Hawala-Druy for which further research is needed to learn about students in interprofessional settings.

Greenman and Dieckman (2004) performed a small ethnographic qualitative study involving adult educators as a means of gleaning information about the transformative culture of education and the value these educators held for criticality and culture during the transformative experience. They used a purposeful sample of seven participants from a master's level program; data were collected through semi-structured interviews, evaluations, papers, and course documents from students and teachers. Thematic coding and analysis helped authors identify a relationship between criticality and culture, as teachers self-evaluated for ways to better structure their classrooms in order to address the need for cultural and critical perspectives. This compliments the suggestions made by Hawala-Druy and Hill (2012) that a cultural model was needed in education. Greenman and Dieckman (2004) proposed that there was value of the transformational education process but did not have a study yielding statistically significant data for generalization of findings that limited the impact for future studies.

Pecukonis, Doyle, and Bliss (2008) encouraged the ideal that interprofessional cultural competence was paramount to fostering the independent yet complimentary professional cultures of various health professions. Health professionals represent a variety of medical specialties, each having a unique identity that uniquely shapes the educational and professional experience a student encounters (Pecukonis et al., 2008). In

order to help health professionals develop the skill and competency to address cultural needs of patients they may need to have information about other professionals. Professional medical students should be introduced to different professional cultures early on in their education so they have time to develop a cultural competence (Pecukonis et al., 2008).

Beach et al. (2005) completed a systematic review of interventions used by health professionals to improve cultural competence from 1980 through 2003. In their review, they included 34 studies that met inclusion criteria of pre- and post-intervention assessment of cultural competence. Beach et al. concluded that cultural competence training was beneficial, as evidenced by 17 of 19 studies, demonstrating an improvement in provider knowledge, 14 of 14 studies noting improvement in skills, and 21 of 25 studies indicating improvement in attitude (p. 5). To a lesser extent, there was also an impact on patient outcomes from three studies reporting favorable patient satisfaction. Beech et al. suggested that while the review of the literature indicated a positive influence of cultural competence training on knowledge, skills, and attitude, there was no way to determine the superior training interventions (p. 7). Additionally, they concluded that there were numerous outcome measures being used to assess cultural competence, and that honing in on a single best measure or intervention was difficult.

More needs to be done to learn both about the transformative process in the adult learner and the constructs of the learning environment that do have significant impact on student's experiences (Greenman & Dieckman, 2004; Hawala-Druy & Hill, 2012). This

relative lack of knowledge supported the focus of this dissertation as related to physical therapy students and their perception of the learning environment.

In conclusion, the value of culture competence for quality health care services is clear. There are challenges with the best delivery methods and outcome measures. This dissertation aimed to add to the body of knowledge of physical therapy students perspectives on self-efficacy, cultural competence, and perception of their learning environment in both traditional and IPE curricula. For this dissertation research, cultural competence was operationally defined by the IAPCC-SV instrument, which was developed by Campinha-Bacote in 2011 as a way to measure levels of cultural competence among health professions students. The next section of this chapter reviewed the attitudes and perceptions of the learning environment.

Attitudes and Perceptions of Learning Environment

The third variable studied in this dissertation research was the student's perception of their learning environment. First, I presented a review of student and faculty attitudes toward interprofessional teams, teamwork, and IPE. Then, I reviewed student perceptions of IPE and collaborative practice. Lastly, environmental type theory is introduced and instruments used to measure these perceptions analyzed.

A number of studies explored the attitudes of faculty and students in health profession programs related to teams, teamwork, and IPE (Aziz et al., 2011; Bennett et al., 2011; Bottenberg et al., 2013; Coster et al., 2008; Curran et al., 2007; Curran et al., 2008; Hoffman & Redman-Bentley, 2012). The attitudes of health care workers and students toward various aspects of IPE may influence the success of IPE and success of

collaborative healthcare practice (Aziz, Teck, & Yen, 2011; Curran et al., 2008). Aziz et al. (2011) investigated the attitudes toward interprofessional learning of 836 undergraduate students representing medical, pharmacy, and nursing programs in Malaysia. A convenience sample of students from one university was used and the Readiness for Inter-professional Learning Scale (RIPLS; Parsell & Bligh, 1999) was administered at the beginning of a course. RIPSL measures factors related to the attitude of healthcare students prior to any experience in interprofessional learning or collaborative practice setting. The Cronbach's alpha value for the roles and responsibilities section was .90; however, the values dropped for professional identity at .79.

Aziz et al. (2011) used a 19-item survey and a one-way analysis of variance with post-hoc Tukey test with significance less than .05. The mean age of nursing students was 35.8 as compared to 20.9 for medicine and 20.4 for pharmacy. For the teamwork and collaboration subscale, ($F(2,83) = 16.35$, $p < .001$) there was not a significant difference between nursing and pharmacy but the medical students scored significantly lower than both. For the professional identity subscales, ($F(2,83) = 9.12$, $p < .001$) pharmacy students scored significantly higher than medical student but there was no difference between medical and nursing (p. 642). The analysis for the third subscale indicated that scores for medical students were significantly higher than nursing and pharmacy in the statement that they know more and have more skills than other healthcare students.

Aziz et al. (2011) suggested that all students had a generally positive attitude toward interprofessional learning; however, some nursing and pharmacy students presented positive trends in attitude toward this type of learning. The number of subjects in this study was large; however, only three professions were represented. Furthermore, because the data was collected at a Malaysian university, there may be some cultural differences, making generalization to other locations difficult. Lastly, the authors indicated that there were many more females in the study than males, which may have also contributed to the distribution of results. Although they found differences between professional students based on their learning of study, physical therapy students were not included. Additionally, while they did not compare the same program of study at different institutions, there was a high response rate because surveys were completed in class.

Curran et al. (2007) reported on the attitudes of medical, nursing, pharmacy, and social work faculty toward interprofessional teamwork and education (p. 892). Physical therapy faculties were not surveyed in this study of 190 participants. Despite not being included in the research sample, the results indicated that 79.7% of the faculty had experienced collaborative interprofessional communication in the clinical setting (Curran et al., 2007). Since faculty bring a wealth of experience and individual differences to the classroom and each can uniquely influence the message delivered, it behooves professional programs to have faculty who demonstrate strong interprofessional communication skills (Curran et al., 2007). Similarly, Steinart (2007) upheld the notion that proper attitude and understanding of IPE and collaborative practice was critical to the

success of both IPE and collaborative practice; Gilbert (2005) further maintained that proper attitudes of students and faculty were predictors of success of IPE.

Curran et al. (2008) found that medical and nursing students had less positive attitudes toward interprofessional teamwork and education than pharmacy and social work students, and that both female students and students with experience in interprofessional teamwork had better attitudes toward teamwork and IPE, as compared to other participants in the study (p. 154). They sought to examine the attitudes and contributing attributes that influenced attitude toward IPE and interprofessional teams (p. 148). A convenience sample of 1,359 pre-licensure students responded to the quantitative survey modified from the Parsell and Bligh (1999) scale. A one-way ANOVA and post-hoc comparisons were employed to determine a significant difference between the professional programs in regard to attitude toward interprofessional care, with medical students exhibiting the lowest scores among pharmacy and social work (p. 150).

The data analysis of the one-way ANOVA and Scheffe post-hoc comparison further indicated a significant difference in the scores for medical students (M = 3.70, SD = 0.59), nursing students (M = 4.03, SD = .046), pharmacy students (M = 4.07, SD = 0.40) and social work students (M = 4.18, SD = 0.42) (Curran et al., 2008, p. 153). Curran et al. presented an argument that most students had a positive attitude toward IPE; however, this may be considered a bias to the study because of the kickoff of the new interprofessional curriculum on campus. Additionally, their study acknowledged that

there were many influences on the attitudes of students toward IPE, including past experiences and gender.

Little research has been conducted for the express purpose of evaluating the IPE experience in physical therapy students (Dubouloz, Savard, Brunett, & Guitard, 2010). Dubouloz et al. (2010) examined physical therapy students from eight different IPE programs who participated in an interprofessional clinical experience. The Readiness for Interprofessional Learning Scale (Parsell & Bligh, 1999) and The Description of a Meaningful Learning Situation Tool (Dubouloz et al., 2010) were used to track student learning. These objectives addressed the individual student's ability to communicate the role of other professionals, design and implement a plan of care, and demonstrate collaboration, respect, communication, and trust among other members of the healthcare team (p. 21).

Dubouloz et al. (2010) found that the results of the Description of a Meaningful Interprofessional Learning Situation Tool (Dubouloz et al., 2010) completed by 15 physical therapy students indicated that they prefer to work in an interprofessional environment and that professional identity and competences were developed. Students reported learning new skills and had a more positive attitude toward their professional colleagues. Despite the positive qualitative reports there were no significant differences in the Readiness for Interprofessional Learning Scale scores among these students. Dubouloz et al. hypothesized that there wasn't a statistical difference because students were already receptive to interprofessional learning. Furthermore, the Readiness for Interprofessional Learning Scale was designed to measure attitude prior to exposure to

working or learning experiences in an interprofessional environment (Parsell & Bligh, 1999).

Dubouloz et al. (2010) had limitations with the measurement tools selected for their study. The Readiness for Interprofessional Scale (Parsell & Bligh, 1999) although a valid and reliable tool, was not the most appropriate measure for students who were in an IPE setting because it was designed to look at their attitudes before they start the IPE intervention. The Description of a Meaningful Interprofessional Learning Situation Tool (Dubouloz et al., 2010) was not an established outcome measure but was found useful because it captured the qualitative aspect of the student's perspective of the intervention. The research results revealed the lack of quality interprofessional educational research related to physical therapy students. Their findings may suggest that students' attitudes and degree of readiness before clinical internships was likely different than while on the clinical internship experience as evidenced by the lack of change on the scales in their study.

MacDonald et al. (2010) used a grounded theory approach and conducted a qualitative study of 24 healthcare individuals including graduate, undergraduate, faculty and clinicians representing medicine, pharmacy, physical therapy, clinical psychology, education, social work, addictions counselling, rehabilitation counselling, academia and administration. Interviews were conducted and analyzed, and key competencies of the health professionals were identified from seven undergraduate students, two graduate students, four faculty members, and 11 practitioners.

Response analysis revealed that communication, strength in and knowledge of individual professional role, leadership, teamwork, and conflict resolution were key competencies of an individual working in an interprofessional environment (MacDonald et al., p. 239). The authors suggested that interprofessional learning environments created a culture that led to the modeling, delivery, and integration of these behaviors in the program; clinical experiences would afford real life opportunities to practice the skills learned. Furthermore, they suggested that a key component to the success of interprofessional learning environments was the teachers who understood and demonstrated the qualities needed to be successful in a collaborative interprofessional practice setting.

Understanding a student's perspective of the classroom environment may impact their learning or participation (Persaud & Salter, 2003). Persaud and Salter conducted a quantitative study of 142 female college students, from either an education or engineering major. Participants completed the Meyers-Briggs Type Inventory (MBTI) Form M, the Salter Environmental Type Assessment-Experimental Form A2 (SETA), and the Classroom Participation Survey (CPS) during one of their courses where they were asked to recall one course that was a good fit and a second that was a poor fit, and then completed response forms for each. The goal of the study was to better understand the relationship between women's psychological type and preference for classroom environment.

Persaud and Salter (2003) conducted multiple analyses on this data, including asymmetrical log-linear analyses, which were used to measure the interaction between

variables. They concluded that "thinking" and "feeling" women interpret the classroom environment differently and had different reactions to different types of classrooms which impacted on their participation. The participation of thinking women was not influenced by the classroom environment, while for feeling women it was. The authors knew the experience of fit of the women in the study, but did not know if and how the fit impacted outcomes. Information on the teachers was unknown and considered a limitation to this study (Persaud & Salter, 2003).

The work of Persaud and Salter (2003) contributed to the foundation for this current research study. Their recommendations encouraged exploration of positive classroom relationships and the value of effective pedagogical assessment in addressing the possible need for a feeling-orientated classroom. In conclusion, meaningful interaction of students and faculty, and students among themselves are key components of learning (Persaud & Salter, 2003) and align with the vision of pedagogy for IPE because of the need to work in teams and have meaningful interactions with the members of the healthcare teams and patients. The next section of this chapter provides a summary and conclusion of the literature review.

Summary and Conclusions

The review of the literature suggested that there was a need for health professional education and practice to embrace an interprofessional model of education and a collaborative practice model. Theoretical or conceptual frameworks for IPE and collaborative practice models have not been universally accepted and remain a source of continual discussion in the field.

There have been a number of reports of the positive impact that IPE has on healthcare teams, interprofessional collaborative care, role identity, self-confidence and cultural competence in healthcare education (Beach, et al., 2005; Campinha-Bacote, 2003; Dahl & Hall, 2013; Evans, Mazmanian, Dow, Lockeman, & Yanchick, 2014; Hawala-Druy & Hill, 2012; Jackson, 2011; Jungert & Rosander, 2010; Pecukonis, Doyle, & Bliss, 2008; Thistlewaite, Forman, Matthews, Rogers, Steketee, & Yassine, 2014). The learning environment including communication and faculty perceptions of IPE also have an impact on the success of the programs (Aziz et al., 2011; Bennett et al., 2011; Bottenberg et al., 2013; Coster et al., 2008; Curran et al., 2007; Curran et al., 2008; Hoffman & Redman-Bentley, 2012). Physical therapy is an important component of the healthcare team, yet there were few studies that addressed the student's perception of the IPE environment.

After an exhaustive review of the literature, there were no reports of uni-professional learning in comparison with IPE for the variables of self-efficacy, cultural competence, and student perception of learning environment being examined in this dissertation. Self-efficacy is a core construct of domains of IPE and collaborative practice (IPEC, 2011) and is one the qualities needed by a healthcare provider working in a collaborative practice environment; hence identifying this in physical therapy students early in their professional studies should enhance their success in an interprofessional environment. The implication is that cultural competence may best be developed prior to clinical internships so students may apply skills needed to treat the diverse patient population receiving physical therapy services. Lastly, learning more about a physical

therapy student's perception of their learning environment in both traditional and IPE programs was valuable to curricular advancements in the field. The literature supported learning environment as important to the learning process in general (Kegan, 1994; Salter, 2012); however, the student's specific perception of the learning environment in IPE curricula for physical therapy students has not been established.

This research for this dissertation contributed to the body of knowledge in physical therapy education as related to IPE in the United States as the constructs of self-efficacy, cultural competences, and perceptions of learning environment were explored. The next chapter of this dissertation reviewed the research methodology.

Chapter 3: Research Method

Introduction

The purpose of this study was to examine differences in PT curricula related to students' self-efficacy, cultural competence, and perception of learning environment, prior to their first clinical internship. This knowledge can be used to improve the educational delivery methods in PT learning environments and to emphasize the cultural competence skillset necessary for interprofessional collaboration during clinical internship. These improvements could enhance services to a diverse population in need of health care, first during the students' clinical internship and then in their clinical practices, although little research has been conducted in this area.

Chapter 3 includes a discussion of the research design and methodology used to test differences in program format related to key student characteristics. I presented detailed descriptions of the sampling procedures and measurement instruments. Then, I discussed threats to validity and ethical procedures. The chapter ends with a summary of analytical strategies for the data collected in the study.

Research Design and Rationale

The overall research design was consistent with the quantitative approach because the purpose of the study was to examine the relationship between the variables using instruments that produce data that I then statistically analyzed (Creswell, 2009). A qualitative or mixed methods research design was not selected for this research study because individual responses to explore or understand a phenomenon, using inductive

data analysis, and interpreting meaning from the data (Creswell, 2009) do not align with the purpose or research questions in this study.

This study took the form of a nonexperimental, causal-comparative research design. A causal-comparative design best aligned with the research because I intended to make comparisons between two groups, with one independent variable. The design was nonexperimental in that was neither intervention nor random assignment of participants to conditions of the independent variable (Creswell, 2009; Frankfort-Nachmias & Nachmias, 2008; Trochim, 2006). That is, participants had self-selected the type of program, either IPE or traditional, prior to participation. In this specific study, the independent variable, type of curricula, was categorical in nature (IPE versus traditional). The dependent variables, self-efficacy, cultural competence, and the thinking-feeling and extraversion-introversion constructs of the perception of learning environment, were continuous in nature.

Research Question

To address the problem in PT education identified in Chapter 1 and after the review of the related research presented in Chapter 2, a single research question emerged: Are there differences in self-efficacy, cultural competence, and perception of learning environment for a sample of preclinical PT students based on curriculum format (IPE or traditional)? This question led to the following hypotheses.

Hypotheses

1. Null hypothesis (H_o): There will not be significant differences in self-efficacy, cultural competence, and perception of learning environment for a sample of preclinical PT students based on curriculum format of IPE and traditional.

2. Alternative hypothesis (H_A): There will be significant differences in self-efficacy, cultural competence, and perception of learning environment for a sample of preclinical PT students based on curriculum format of IPE and traditional. Based on previous research, I anticipated that PT students in an IPE curriculum will score higher in the areas of self-efficacy, cultural competence, and perception of learning environment than students in a traditional curriculum.

Methodology

Population

This study was designed to produce results that are generalizable to the population of PT students, thereby supporting development of curriculum. The sampling frame included all U.S. students enrolled in an on-campus, graduate program in PT who were 18 years or older at the time of the study. The focus of this study was on the initial, nonclinical experiences of PT students; therefore, only students who have not completed a formalized clinical internship were targeted for inclusion in the study.

Sampling and Sampling Procedures

Even though the research deign was not fully experimental, random sampling supported the external validity of the results. For this study, an assumption was made that students were relatively randomly distributed across the 220 programs in the United

States (CAPTE, 2014), and as a result, random sampling of the programs produced a random sample of students. To support interpretation of the results, I randomly selected a balanced sample of programs from within the curriculum types, with half being IPE curriculum and half being traditional curriculum. I did not make a distinction between private and public schools because most physical therapy programs are modeled on a common set of program outcomes. I obtained this list of schools from the Commission on Accreditation in Physical Therapy Education (CAPTE, 2014) website.

I determined a preliminary sample size estimate using the G*Power 3 program (Faul, Erdfelder, Lang & Buchner, 2007). Based on the variables in the study, the type of design, and parameters to assure generalizable findings ($f^2 = 0.5$, $\alpha = .01$, power = 0.80), 271 students were needed for this study with 138 in each group. Most programs have a class size of 42 students per cohort (CAPTE, 2014), and all participants met the inclusion criteria of being students who had not yet taken a 6-week clinical internship. The sample size included one group of four programs representing IPE curriculum and a second group of four programs with traditional curriculum, resulting in an estimated 168 participants in each of the two groups for a total of 336 participants. I expected an 80% response rate, which means that the total number of participants for each group will likely be 134 for a total of 268 participants. Additional programs could have been added if necessary.

Procedures for Recruitment, Participation, and Data Collection

From the list of PT universities provided by CAPTE (2014), I selected the first four universities with IPE curricular formats who agreed to participate. Traditional

university participants were selected in the same manner. I contacted leaders of the academic programs at these universities through e-mails and phone calls, with a focus on recruiting a faculty member from the program (Appendix A). The university faculty liaison assisted in formulating a letter of cooperation and delineating Institutional Review Board (IRB) guidelines for data collection at that institution.

I coordinated a date and time for the data collection with the faculty liaison from the participating university. I collected data through three paper and pencil instruments and one demographic questionnaire. On the selected day of data collection, I met with the students who were potentially interested in participating in the research. I handed out the packet of information (the informed consent cover sheet, questionnaire, and three instruments) to the students in the room. I remained in the room the entire time.

If participants wished to participate, they read the cover letter of informed consent and continued to complete the questionnaire and the three instruments. If they wished not to participate, they turned in a blank packet or nothing at all. These instructions were also clearly marked on the cover letter of informed consent. Participants exited the study by turning in the packet to a table in the front of the room or by walking out of the room if they decided to withdraw. They kept the cover letter of informed consent for their record of participation. No follow-up was required for this study.

Instrumentation and Operationalization of Constructs

The independent variable in this study, type of curriculum, was categorical in nature. The interval-level dependent variables were self-efficacy, cultural awareness, and the thinking-feeling and extraversion-introversion constructs of the student's perception

of program environment. I measured these constructs using three standardized instruments, respectively: the Sherer Self-Efficacy Scale (Sherer et al, 1982), the Inventory for Assessing the Process of Cultural Competence Among Healthcare Professionals–Student Version (IAPCC-SV; Camphina-Bacote, 2007), and the Salter Environmental Type Assessment (SETA; Salter, 2012). Written permission to use the instruments was granted. I used a questionnaire to collect basic demographic information to support conclusions about the generalizability of the results to the broader student population.

Sherer Self-Efficacy Scale. Self-efficacy has been defined as a person's belief in their ability to succeed in a life situation (Bandura, 1977). Self-efficacy was operationally defined for this study by the Sherer Self-Efficacy Scale (Sherer et al., 1982). The Sherer Self-Efficacy Scale was developed by Sherer et al. (1982) to measure an individual's general confidence level for various activities. The theory behind the Sherer Self-Efficacy Scale is Bandura's social cognitive theory, and the instrument consists of two parts: the general self-efficacy and social self-efficacy scales. For this research, only the scores on the general self-efficacy subscale were used in the data analysis because it has demonstrated acceptable psychometric quality in previous studies, reviewed below.

The Sherer Self-Efficacy Scale includes 30 statements about personal attitudes and traits. Examples of the statements on this instrument include, "I avoid facing difficulties" and "Failure just makes me try harder" (Sherer et al., 1982). The statements are coded to address social self-efficacy (6 statements), individual general self-efficacy

(17 statements), or to be a filler statement (7 statements). The answer format is a 5-point Likert-type response with answer categories of *disagree strongly*, *disagree moderately*, *neither agree or disagree*, *agree moderately*, or *agree strongly*. These ratings are scored and summed to produce a general score and a social self-efficacy score. Scores on the general self-efficacy scale can range from 17–85, with higher scores indicating a higher level of self-efficacy.

In a study of 376 undergraduates in an introductory psychology class, moderate construct validity was demonstrated, although correlations were not strong enough to confirm that the Sherer Self-Efficacy Scale measures general self-efficacy and social self-efficacy the same (Sherer et al., 1982). The reported Cronbach's alpha reliability estimates for scores were .84 for the general self-efficacy subscale and .65 for the social self-efficacy subscale (Sherer et al., 1982). The alpha for the Sherer Self-Efficacy Scale scores have been consistently reported with values .78 to .88 (Chen, Gully, & Eden, 2001), .88 (Scherbaum, Choen-Charash, & Kern, 2006), and .84 (Woodruff & Cashman, 1993).

IAPCC-SV. In this dissertation research, the variable of cultural competence was defined as "the ongoing process in which the health care provider continuously strives to achieve the ability to effectively work within the cultural context of the client (individual, family, community)" (Campinha-Bacote, 2002, p. 181). Cultural competence was operationally defined by the IAPCC-SV instrument, which was developed by Campinha-Bacote in 2011 as a way to measure levels of cultural competence among health professions students. The theory behind the IAPCC-SV is a combination of transcultural

nursing theory from Leininger (1978), Pederson's (1988) multicultural development theory, and the Campinha-Bacote (2007) model of cultural competence.

The scores for the IAPCC-SV instrument are calculated by taking the sum of the 20 items that cover the cultural constructs of desire, awareness, knowledge, skill, and encounters (Camphina-Bacote, 2011). Examples of the statements on this instrument include: "I believe that there are more differences within cultural groups than across cultural groups" and "I have a passion for caring for clients from culturally/ethnically diverse groups" (Camphina-Bacote, 2011). The answer format is a 4-point Likert-type item responses with categories of *strongly agree*, *agree*, *disagree*, and *strongly disagree*. The total scores can range from 20–80, and based on the total score for the instrument, the student is categorized at the level of cultural proficiency (highest level), cultural competence, cultural awareness, or cultural incompetence (lowest level). The reported Cronbach's alphas for IAPCC-SV scores have been largely consistent, with values such as .79 (Wilson, 2011), .75 (Okere, Gleeson, Melzer, Olson & Mitchell, 2011), and .84 (Young, 2009).

SETA Form C. The third construct measured in this dissertation research was the student's perception of the learning environment, defined as the environment within PT courses and related learning activity, not the university as a whole. Learning environment perception was operationally defined for this study by two of the four scales on the SETA (Salter, 2012). Salter (2002) developed the SETA instrument to measure an individual's perception of the "personality" (p. 2) of behavioral environments. SETA-

Form C is the fourth and current version of the instrument. The theory behind the SETA-Form C is based largely on Jung's theory of psychological types (1921/1971).

The SETA (Salter, 2012) instrument contains four subscales: extraversion-introversion, thinking-feeling, sensing-intuition, and judging-perceiving. For this research study, the thinking-feeling and extraversion-introversion subscales were used in the data analysis. Examples of the statements used on this instrument include: "The atmosphere of this environment is typically. (A) Hushed (B) Noisy" and "The usual tone of this environment is (A) businesslike (B) friendly." The scoring for the SETA entails calculating the total score for the items by selecting between two choices for each item and then matching that number to a scoring algorithm. Scores can range from -19 to +19, indicating one side or the other of the dichotomy. Although these metric scores are then normally used to sort responses into the categorical environmental types, they were used for data analysis in this study to increase the amount of available variance.

Most validity studies of SETA scores have involved college students, and some have focused specifically on outcomes in academic settings (e.g., Persaud & Salter, 2003; Salter & Persaud, 2003). In a generalizability study of the instrument with 800 college students, Salter (2003b) reported reliability estimates from .78 to .88, across four environmental domains. A factorial validity study supported the four dimensions of the instrument (Salter & Vandiver, 2002). Concurrent validity has been evidenced in studies of convergence between the SETA and instruments that measure work settings (Salter, 2002), classrooms (Salter, in press), small groups (Salter & Junco, 2007), and living environments (Salter & Irvin, 2003). The SETA has been used in other students of

academic and workplace environments (e.g., Allread & Marras, 2006; Salter, Junco, & Irvin, 2004).

Statistical Analysis

In this study, the independent variable was the type of curriculum (IPE versus traditional) and the dependent variables were self-efficacy, cultural competence, and the thinking-feeling and extraversion-introversion constructs of the student's perception of the learning environment. Based on the demands of this causal-comparative design, a Hotelling's T^2 was the appropriate analytic strategy for one dichotomous independent variable and four metric dependent variables (Frankfort-Nachmias & Nachmias, 2008; Trochim, 2006; Wiesner, 2006). Before conducting the Hotelling's T^2 analysis, I took a few preliminary, diagnostic steps.

I entered the data by hand; therefore, an initial screening of responses at the item level occurred before I computed scores on the four measured, dependent variables. I also checked the coding on the independent variable. If responses were missing for an item on any of the instruments, I retained the data for data analysis unless a participant skipped five or more items on an instrument. I reported all available demographic information although it was not included in the analysis. After total scores were computed, I generated descriptive statistics for the variables in the study.

Next, a few diagnostic tests were run. Estimates of reliability were needed with the four measured variables, and Cronbach's alpha was used for that purpose. An alpha greater than .70 was the criterion for whether scores met an acceptable level of precision (Frankfort-Nachmias & Nachmias, 2008; Tavakol & Dennick, 2011). Additionally, four

assumptions were met for the Hotelling's T^2: normality of variables, homogeneity of variance, no distinct subpopulations with different means, and that each variable was measured independently. Measures of skewness and kurtosis were screened for the first assumption, and Levene's test was used for the second. For the latter two assumptions, the design and data collection methods supported this technique.

Because all of the diagnostic tests supported moving forward, the last step in the analysis was the Hotelling's T^2. This test statistic is the multivariate extension of a basic *t*-test, and helps control for potential Type I error if the dependent variables were analyzed separately. I expected statistically significant results, and then I followed-up by examinations of the actual power achieved in the analysis. Finally, I used *t*-tests for post-hoc analysis, using a Bonferroni correction and the a priori alpha level of .01 to identify any significant differences ($p <. 003$).

Threats to Validity

The purpose of this study was to examine differences in physical therapy curricula related to students' self-efficacy, cultural competence, and perception of learning environment, prior to their first clinical internship. The overall research design was a causal comparative quantitative approach, because the purpose of the study was to examine the relationship between the variables using instruments that produce data that were then statistically analyzed (Creswell, 2009). Although most strategies were noted above, this section provides a summary of how I addressed the threats to validity.

I addressed threats to external validity by the randomized selection of physical therapy programs participating in the study. Delimitations included that the participants

are only from physical therapy programs and further comparisons to other medical programs of study should not be made. Threats to internal validity, such as the participant's history or maturation, were not a concern for this study. This causal comparative research design did not include multiple points of measurement or an intervention. Additionally, life events that could potentially affect the participant's response (history) or the physical and developmental changes that occur over time (maturation) did not need to be addressed because they did not impact the one point data collection.

Construct validity was established in the selection of instruments that were used to measure the operationally defined variables. I selected the three instruments because they have demonstrated psychometric data that support the reliability and validity of the scores they produce, and because they have been used in similar types of research studies. I generated reliability estimates for this sample of respondents before the main analysis was conducted to minimize potential measurement error.

I addressed statistical conclusion validity through the selected research design and statistical tests used in the data analysis. For this study, Hotelling's T^2 aligns with the variables and was arguably more conservative and robust than other available techniques. Additionally, I ran diagnostic tests to assure the assumptions were met for this technique, and I planned a Bonferroni correction to help control for Type I error in post hoc analysis.

Ethical Procedures

I outlined the ethical procedures for this study in this section. Agreements to gain access to participants in this study were made by the universities participating in this dissertational research through a letter of cooperation. I obtained requisite institutional permissions from Walden University and other universities as needed. Participation in this study was completely voluntary for people 18 years and older and was completely anonymous. The participants could have withdrawn from participation at any time by leaving the data collection area or by not turning in their packet of information.

The treatment of data was kept confidential through proper data storing and data access privileges. To ensure that data are protected, they were stored in a locked file cabinet in my home and will be retained for a minimum of five years. The people who will have access to this data include me and my dissertation committee. One of the data collection sites was at the university in which I am employed. Because the study is not related to any courses that I teach and because all information was anonymous, the potential conflict of interest was minimal.

Summary

In summary, I used a nonexperimental causal-comparative research design to measure the differences between entry level physical therapy students in IPE or traditional curriculum related to measures in self-efficacy, cultural competence, and perception of learning environment prior to clinical internship. I used a random sample of students of students from IPE and traditional curricula. I collected data anonymously through three paper and pencil instruments and one demographic questionnaire. I used

Hotelling's T^2 to analyze the data. The methodology described in this chapter supports this research framework and ultimately provided meaningful data in the exploration of some of the variables influencing potential differences in traditional and IPE physical therapy curriculum.

The next chapter of this dissertation provides data collection details and the results of the dissertation research. Analysis includes evaluation of statistical assumptions and tables where appropriate. The chapter concludes with a summary of postulates to the research questions.

Chapter 4: Results

Introduction

The increasing numbers of racial and ethnic minorities in the healthcare system place an added demand on health care providers to be culturally competent in providing comprehensive care to patients (WHO, 2010). IPE was identified by the WHO (2010) as a better way to prepare healthcare professionals to deliver quality healthcare. IPE models are not well established in PT education despite the need for increased understanding in order to address the need for improved health care. This research addressed the need to advance understanding of health care education.

The purpose of this study was to examine four variables seen in the literature review as potentially important concerning differences in PT curricula related to students prior to their first clinical internship: self-efficacy, cultural competence, and thinking-feeling and extraversion-introversion constructs. I used a nonexperimental, causal-comparative research design. The independent variable was the type of curricula, either IPE or traditional, prior to participation. The dependent variables were self-efficacy, cultural competence, and the thinking-feeling and extraversion-introversion constructs of the perception of learning environment. I discussed in Chapter 4 the data collection procedures including descriptive and demographic characteristics of the sample. Then, I presented detailed descriptions of the analyses used to answer the research questions. The chapter ends with a summary of the answers to the research questions.

Research Question

The need for research in this area led to a single research question: Are there differences in self-efficacy, cultural competence, and perception of learning environment for a sample of preclinical PT students based on curriculum format (IPE or traditional)? This question led to the following hypotheses.

Hypotheses

1. Null hypothesis (H_0): There will not be significant differences in self-efficacy, cultural competence, and perception of learning environment for a sample of preclinical PT students based on curriculum format of IPE and traditional.
2. Alternative hypothesis (H_A): There will be significant differences in self-efficacy, cultural competence, and perception of learning environment for a sample of preclinical PT students based on curriculum format of IPE and traditional. Based on previous research, an anticipated outcome was that PT students in an IPE curriculum would score higher in the areas of self-efficacy, cultural competence, and perception of learning environment than students in a traditional curriculum.

Data Collection

The data for this study were collected over a 12-week period between September 2014 and November 2014. For this study, an assumption was made that students were randomly distributed across the 220 programs in the United States (CAPTE, 2014), and as a result, random sampling of the programs produced a random sample of students. Hence, participant recruitment started from the list of PT programs at universities provided by CAPTE (2014), and I selected the first four universities with IPE curricular

formats who agreed to participate. I selected traditional program participants in the same manner. To the best of my understanding, nine schools chose not to participate because of the distraction it posed to the normal schedule of events on campus, 13 schools declined because there were too many research requests this year, and 14 schools provided no response.

I contacted leaders of the academic programs at these universities through e-mails and phone calls, with a focus on recruiting a faculty member from the program to aid as liaison in the data collection process. The university faculty liaison from each institution assisted me in formulating a letter of cooperation and delineating IRB guidelines for data collection at that institution. A date and time for me to collect data was coordinated with the faculty liaison from the participating university.

On the day of data collection, I met with the students who were potentially interested in participating in the research. I handed out the packet of information (the informed consent cover sheet, questionnaire, and three instruments) to the students in the room (Appendix B). If students wished to participate, they read the cover letter of informed consent and continued to complete the questionnaire and the three instruments. If they did not wish to participate, they were asked to turn in a blank packet or nothing at all. These instructions were also clearly marked on the cover letter of informed consent. Participants exited the study by turning in the packet to a table in the front of the room or by walking out of the room if they decided to withdraw. They kept the cover letter of informed consent for their record of participation.

Although eight programs were originally targeted from the a priori estimate for sample size, a higher-than-anticipated response rate suggested an initial examination of the obtained data to determine the costs and benefits of soliciting participation from additional programs. Based on this analysis, and in consultation with my supervisory committee, I made a decision to move forward with the data from six physical therapy programs, three with IPE curriculum and three with traditional curriculum. The response rate for participants in the IPE curriculum was 75.3%, and was 89.6% for participants in the traditional curriculum group. There was no indication why students elected not to participate in the research study.

Results

Sample

Packets containing scored instruments were obtained from 223 physical therapy students, although after data screening, only 218 responses were used in the analysis. Baseline descriptive and demographic characteristics of the 218 revealed 64 male participants and 152 female participants, and two nonresponses. This distribution was consistent with national statistics reported by CAPTE (2014). Because data collection stopped at six programs, the sample was slightly less than the a priori sample estimate of 271 students with 134 in each group. As discussed in the data analysis that follows, information from additional participants would have likely had little effect on the findings and obviated the need to solicit their participation.

Data Screening and Reliability Analysis

A preliminary review of 223 datasets that were collected revealed five incomplete sets of responses. A total of 218 responses were used in the final analysis, with 109 datasets for the IPE group and 109 datasets for the traditional group. The balanced sample was an unexpected but fortuitous outcome. These five responses were eliminated prior to the main analysis and not included in the results of this study. Although no reasons for their incomplete responses were apparent, the participants possibly experienced respondent fatigue because incomplete responses were toward the end of the assessments. Screening of the remaining 218 sets of responses at an item level was completed prior to generating the total scores for the four measured, dependent variables. No problems were observed.

I computed estimates of reliability using Cronbach's alpha. An alpha greater than .70 was the criterion for whether scores met an acceptable level of precision (Frankfort-Nachmias & Nachmias, 2008; Tavakol & Dennick, 2011), and each of the variables met that threshold (Sherer Self-Efficacy Scale = .81, IAPCC-SV = .82, SETA- EI = .83, and SETA-TF = .70). Scores for the two categories for the independent variable were part of the data collection strategy, and the precision for those categories was maintained as part of the data collection strategy. Based on these findings, I decided to move forward with other diagnostic tests.

Evaluation of Assumptions for the Hotelling's T^2

Independence, distinct sub-populations, homoscedasticity, and multivariate normality are the four assumptions about the variables that must be met for statistical

analysis using the Hotelling's T^2 (Frankfort-Nachmias & Nachmias, 2008; Trochim, 2006; Wiesner, 2006). I examined the observed data before the main analysis.

Independence and Distinct Sub-Populations. I randomly selected a balanced sample of programs for this study from within the curriculum types, with half being IPE curriculum and half being traditional curriculum. All students who met the sample criteria were included, and no meaningful sub-populations seemed apparent in the groups. For both types of programs, I randomized the list of schools from the list obtained from the CAPTE (2014) website and categorized into curriculum that could be identified as IPE or traditional before data collection, and no respondent was in both conditions of the independent variable. Importantly, although students self-selected their program prior to participation in this research study, the type of curricula of the program is not a variable on which students made their decision (as discussed further below in a follow-up analysis). I designed this randomization to ensure that the assumption of independence was met.

Homoscedasticity. I assessed homoscedasticity with a Levene's test. Those results are reported in Table 1. None of these tests were statistically significant, which would have indicated a possible violation of the assumption of equal variance across samples.

Table 1

Descriptive Statistics Used to Evaluate the Dependent Variables

Variable	M	SD	Skewness[a]	Kurtosis[b]	Levene's *F*	Levene's *p*
Self-efficacy	63.69	7.43	-.34	-.10	2.02	.16
Cultural Competence	61.01	6.87	-.75	4.13	.36	.56
Thinking-feeling	3.35	6.06	-.63	-.06	.09	.77
Extraversion-introversion	-14.57	5.83	1.91	3.62	1.40	.24

Note. M = mean, SD = standard deviation, [a] standard error = .17, [b] standard error = .33.

Multivariate normality. Skewness and kurtosis were calculated to determine if the distributions of the dependent variables were within acceptable ranges. Because there is not agreed upon standards for normality (Brown, 1997), I reviewed both the statistics and graph of each distribution to make relative judgments (see Table 2 and Figures 1 through 4). The extraversion-introversion (EI) scale raised some initial concern because it was noticeably skewed in comparison to the other three scales. I reviewed statistics and graphs for kurtosis and, despite a few outliers, they looked somewhat flat in some cases but not multi-modal. Still, the kurtosis values were noticeably larger for the EI construct and the cultural competence distributions. At this point, I decided to drop the EI scale from the analysis based its overall lack of normality and the fact that 94.64% of respondents saw their settings as extraverted.

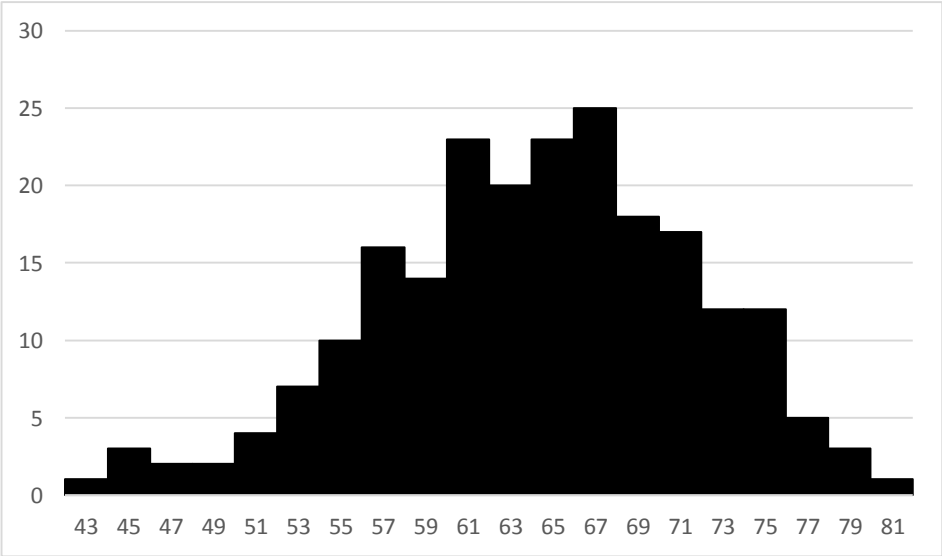

Figure 1. Histogram showing distribution for self-efficacy scores.

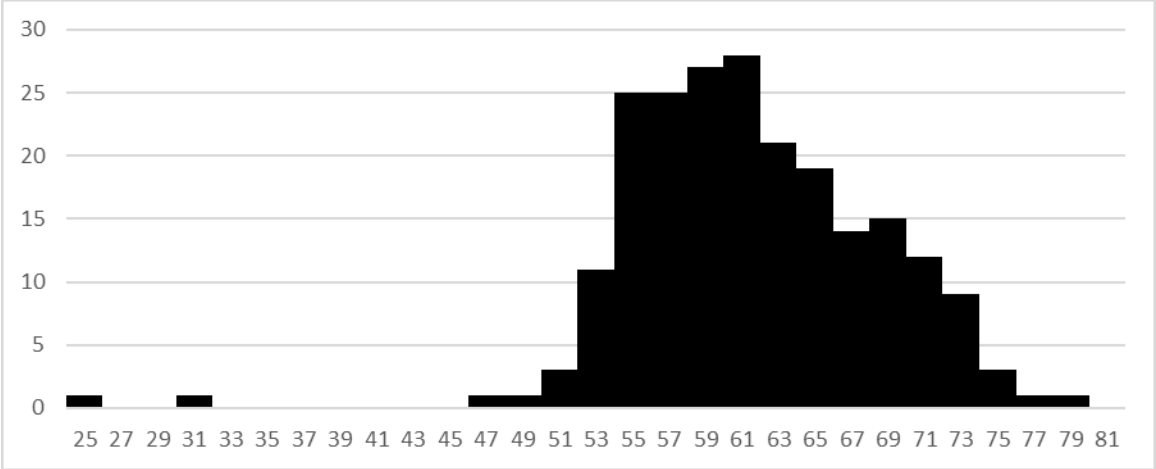

Figure 2. Histogram showing distribution for cultural competence scores.

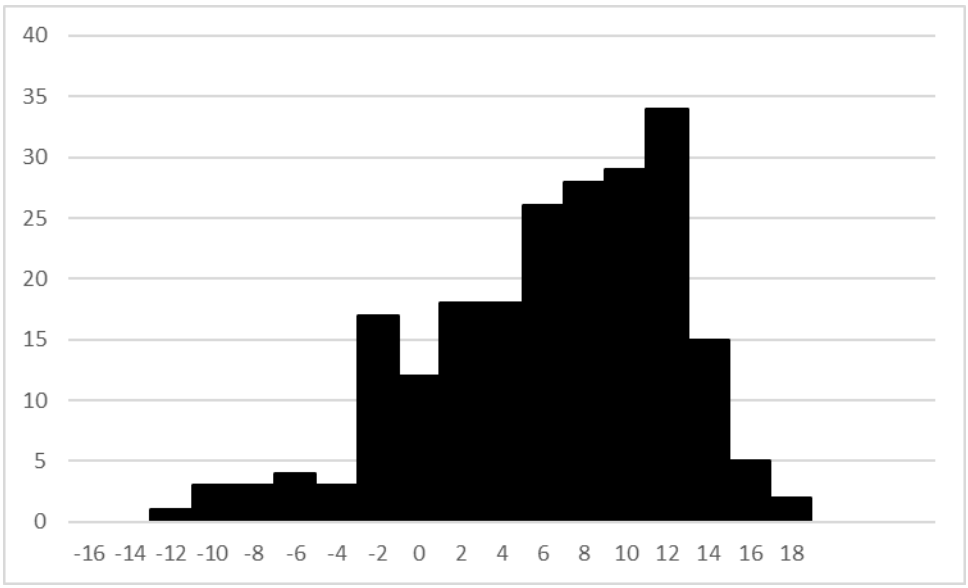

Figure 3. Histogram showing distribution for TF construct scores.

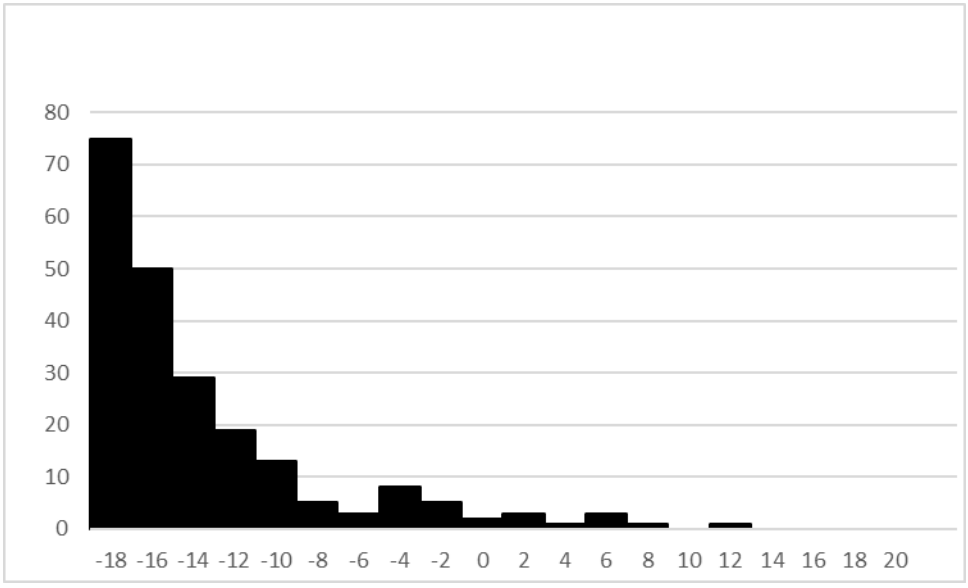

Figure 4. Histogram showing distribution for EI construct scores.

Inferential Statistics. Using the three remaining dependent variables (self-efficacy, cultural competence, and the TF scale on the SETA), I examined the differences between the two types of programs. The Hoteling's test, $T^2(3, 214) = 9.936$, $p = .02$, $\eta_p^2 = .04$, could have been stronger and was likely due to the fact that only one of the three dependent variables had any significant ($p < .01$) results in the between-subjects analysis (Table 2). This finding led me to reject the null hypothesis of no differences between the two groups. In the post hoc analysis of the SE results, $t(216) = -3.10$ (216), $p = .002$, the IPE group (M = 65.22) was significantly higher on the measure of self-efficacy when compared traditional group (M = 62.17).

Table 2

Tests of Between-Subjects Effects

Variable	*SS*	*Df*	MS	*F*	*p*	η_p^2
Self-efficacy	508.67	1	508.67	9.51	<.01	.04
Cultural Competence	88.63	1	88.63	1.88	.17	.01
Thinking-Feeling	21.21	1	21.21	.58	-.45	.00

Additional Inquiry. The results of the data analysis prompted further review into the data collected on the demographic questionnaire to suggest the reason why students selected the physical therapy program in which they are currently enrolled. Responses were coded into one of the following categories: location of program, acceptance into the

program, program quality/reputation, completed undergraduate degree at same school, wanted to help others, and cost. There were 215 responses and three non-responses with the following results: 75 answered location of program, 49 answered acceptance into the program, 45 answered program quality/reputation, 18 for completing an undergraduate degree there, 23 answered for helping others, and five for cost. This information supports the assumption in this study that physical therapy students chose the program in which they study mostly because of location and acceptance rather than type of curriculum, either IPE or traditional.

Summary

This non-experimental causal-comparative research design was used to assess the differences between entry-level physical therapy students in IPE or traditional curriculum related to measures in self-efficacy, cultural competence, and perception of learning environment prior to clinical internship. This study found that physical therapy students in IPE curriculum had significantly higher ($p < .01$) self-efficacy scores than physical therapy students in traditional curriculum. Additionally, there were no significant differences related to cultural competence and perception of learning environment between students in IPE and traditional curricula.

The next chapter of this dissertation provides a summary and interpretation of the key findings from the study. Limitations of the study and recommendations for further research are discussed. The chapter concludes with a summary of positive social change implications.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this study was to examine differences in PT curricula related to students' self-efficacy, cultural competence, and perception of learning environment, prior to their first clinical internship. This research contributes to the body of knowledge in PT education as related to IPE in the United States. Knowledge about the differences between IPE and traditional curricula on the constructs of self-efficacy and cultural competence prior to clinical internship may enhance the future learning and performance on clinical internships, better preparing students for working in a collaborative workplace.

The key findings from this study were noteworthy, although not entirely anticipated. The single significant difference from the multivariate analysis was in the self-efficacy scores of students in IPE and traditional programs. However, significant differences were not found in the scores for the thinking-feeling construct of the learning environment or differences in the cultural competence between the groups. The data also showed a high degree of homogeneity in both types of curricula on the EI dimension, with nearly all respondents describing them as extraverted learning environments.

Interpretation of the Findings

Interprofessional educational models are not well established in the area of PT education in the United States (Arenson, Rose, & Lyons, 2010; Bridges, Davidson, Odegard, Maki, & Tomowiak, 2011; Thiele, 2007). In this study, the two groups were only different on self-efficacy scores, with the IPE group scoring significantly higher.

These results indicated that an IPE curriculum in PT education may have a positive influence on student reported self-efficacy as compared to traditional curriculum. There must be something about the IPE curriculum that fosters the development of student self-efficacy more than tradition curriculum; however, the specifics within the curriculum that have the most influence remain unknown. If self-efficacy is a construct that develops while PT students are in school, it behooves educators to embrace the need for a curriculum that promotes IPE as a way to prepare students for clinical internships and eventually independence into the work force. Self-efficacy is a core construct of the domains of IPE and collaborative practice and is one the qualities needed by a healthcare provider working in a collaborative practice environment. It appears that this curricular goal is met in an IPE curricular format.

Although anticipated, no differences were observed for cultural competence. PT students may need real life experiences to have a sense of cultural competence. Jeffreys and Dogan (2012) found a relationship between cultural competence education and students self-reported self-efficacy; however, there was not a comparison between a uniprofessional IPE versus traditional curricular comparison as done in this study. This uniprofessional comparison is the first to closely examine these differences prior to clinical internship.

Finally, in this study, students described both IPE and traditional curricular learning environments as extraverted. Although no difference was noted, the results may be overall helpful for students who are entering the profession in knowing that there is a social aspect to the PT learning environment. Persaud and Salter (2003) described a

positive classroom fit as extraverted and feeling according to the SETA in their study on college engineering students. Fisher and Kent (1996) reported that a student's perception of his or her learning environment and teacher may influence how he or she learns. In this study, students reported that learning environments were both thinking and feeling and differences between the curricula were not significant. This may indicate that the PT learning environments encompass some of each of the characteristics.

Limitations of the Study

During the data collection process, I was unable to collect data at exactly the same point in time of the curriculum, and not all curricula were exactly the same. These factors may have contributed to some of the differences between program types. Threats to external validity were addressed by the randomized selection of PT programs participating in the study.

Threats to internal validity, such as the participant's history or maturation, were not a concern for this study. Construct validity was established in the selection of instruments that were used to measure the operationally defined variables. Statistical conclusion validity was addressed through the selected research design and statistical tests used in the data analysis. These were reasonable measures taken to address the limitations and biases in this study.

Recommendations

Interprofessional collaboration, IPE, and collaborative teaching practice models are a means of providing cost-effective, quality patient care (Gilbert, 2006; Reeves et al., 2011; WHO, 2010). The profession of PT has been asked to embrace models of IPE and

interprofessional collaborative practice in order to be a part of the comprehensive healthcare team (Bainbridge, Nasmith, Orchard, & Wood, 2010). In this dissertation, I examined the differences in PT curricula related to students' self-efficacy, cultural competence, and perception of learning environment, prior to their first clinical internship; several recommendations emerged as a result of the study.

As part of the analysis for this study, I looked at group difference between the dependent variables of cultural competence, self-efficacy, and the thinking-feeling and extraversion-introversion constructs of perceptions of the learning environment; however, examining correlations between the variables was not the focus of this dissertation. It may be beneficial for a future study to explore the relationships between self-efficacy, cultural competence, and student perceptions of their learning environment to enhance PT education. Future studies could look at self-efficacy and the relationship to cultural competence in traditional and IPE learning curricula. There may be specific curricular differences that support the development of self-efficacy that can be investigated as well. Further research could explore student perceptions of the learning environment as compared to their personality types. Additionally, there may be value in examining the teacher's perception of the learning environment and personality type and compare to that of the classroom.

Additional research could extend the results of this dissertation by studying the age, life experiences, and geographical location of participants as contributing factors to a person's cultural competence and perception of learning environment. Another avenue for future research could be to examine the subcomponents of cultural competence and

self-efficacy to determine if these attributes can be developed early in the PT education process.

Implications

The overarching positive social change implication for this research was to learn more about preclinical PT students' self-efficacy, cultural competency, and perceptions of the learning environment prior to their clinical internship experience. The results have impact on multiple levels. Individually, the PT student develops core competencies needed for a lifelong career serving the public through the delivery of healthcare services. Organizationally, the APTA and the PT schools are supporting the mission and vision of the WHO (2010) with the ultimate goals of improving healthcare outcomes to a culturally diverse society. Lastly, the societal implication is that individuals in need of healthcare services will receive cost effective, quality healthcare from an interprofessional team.

In summary, this study provides some direction for PT programs as they prepare students for a role within the interprofessional healthcare team. If students feel more confident in their learning environment as it relates to development of self-efficacy, it is possible that as a healthcare provider they will deliver better the patient outcomes and be an active member of the healthcare team. If the healthcare team is individually well prepared, they can collectively provide exceptional services to the people in which they serve.

Conclusion

The WHO proposed interprofessional collaboration, IPE, and collaborative teaching models as interventions to address the healthcare needs of today's culturally

diverse, economically challenged society (Gilbert, 2005; Reeves et al., 2011; WHO, 2010). Furthermore, IPEC (2011) identified the core competency domains of IPE and collaborative practice as values/ethics for interprofessional practice, roles/responsibilities, interprofessional communication, and teamwork. Self-efficacy, cultural competence, and learning environment are competencies within the core domains of IEP and collaborative practice. Additionally, the APTA (2008) identified cultural competence and self-efficacy as important characteristics of PT practitioners.

This dissertation is the first study to address the void in the research about the differences in PT curricula related to students' self-efficacy, cultural competence, and perception of learning environment, prior to their first clinical internship. This study focused on the uniprofessional (only PT) differences between students in an IPE versus traditional curricula and found that the main difference was in self-efficacy. The results indicated that students in IPE curricula had higher levels of self-efficacy than those in a traditional program; hence, the type of curricula appears to influence student self-efficacy.

It is well established that in order to be a successful healthcare provider in a collaborative practice setting, professionals must demonstrate the competencies of self-efficacy and cultural competence that are within the domains of IPE and collaborative practice identified by IPEC (2011). Hopefully, the results from this research can be used to advance the educational frameworks in PT education as related to IPE in the United States. Ultimately, having such knowledge about the differences between IPE and traditional curricula on the constructs on core competencies of self-efficacy and cultural

competence prior to clinical internship may enhance the future learning and performance on clinical internships, better preparing students for working in a collaborative workplace. I am confident that this dissertation provides a strong foundation for future research in the area IPE and PT education.

References

Allread, W. G., & Marras, W. S. (2006). Does personality affect the risk of developing musculoskeletal discomfort? *Theoretical Issues in Ergonomics Science, 7*(2), 149–167. doi:10.1080/14639220500076504

American Physical Therapy Association. (2006). Clinical performance instrument. Retrieved from: http://www.apta.org/PTCPI/Version2006/

Arenson, C., Rose, M., & Lyons, K. (2010). Model programs Jefferson interprofessional education center, Thomas Jefferson University. *Journal of Allied Health, 39*(3), e-121–123.

Ateah, C. A., Snow, W., Wener, P., MacDonald, L., Metge, C., Davis, P. …Anderson, J. (2011). Stereotyping as a barrier to collaboration: Does interprofessional education make a difference? *Nurse Education Today, 31*, 208–213. doi:10.1016/j.nedt.2010.06.004

Aziz, Z., Teck, L. C., & YenYen, P. (2011). The attitudes of medical, nursing, and pharmacy students to inter-professional learning. *Procedia Social and Behavioral Sciences, 29*, 639–645.

Baerg, K., Lake, D., & Paslawski, T. (2012). Survey of interprofessional collaboration learning needs and training interest in health professionals, teachers, and students: An exploratory study. *Journal of Research in Interprofessional Practice and Education*, *2*(2), 187–204.

Bainbridge, L, Nasmith, L., Orchard, C. & Wood, V. (2010). Competencies for interprofessional collaboration. *Journal of Physical Therapy Education, 24*(1), 6–11.

Bandura, A. (1977). *Social learning theory*. Upper Saddle River, NJ: Prentice Hall.

Beach, M. C., Price, E. G., Gary, T. L, Robinson, K. A., Gozu, A., Palacio, A. …Cooper, L. A. (2005). Cultural competency: A systematic review of health care provider educational interventions, *Medical Care, 43*(4), 356–373.

Bennett, P., Gum, L., Lindeman, I., Lawn, S., McAllister, S., Richards, J., & Ward, H. (2011). Faculty perceptions of interprofessional education. *Nurse Education Today, 31*, 571–576.

Bernadowski, C., Perry, R., & Del Greco, R. (2013). Improving preservice teachers' self-efficacy through service learning: Lessons learned. *International Journal of Instruction, 6*(2), 67–86.

Bottenberg, M. M., DeWitt, J. E., Wall, G. C., Fornoff, A., Stelter, N., Soltis, D., & Eastman, D. K. (2013). Assessment of interprofessional perceptions and attitudes of health professional students in a simulation laboratory setting. *Current Concepts in Pharmacy Teaching & Learning, 5*, 167–174.

Branscombe, N. R., Spears, R., Ellemers, N., & Doosje, B. (2002). Intragroup and intergroup evaluation effects on group behavior. *Personality and Social Psychology Bulletin*, *28,* 744–753. doi:10.1177/0146167202289004

Bridges, D. R., Davidson, R. A., Odegard, P. S., Maki, I. V., & Tomkowiak, J. (2011). Interprofessional collaboration: Three best practice models of interprofessional education. *Medical Education Online, 16,* 6035. doi:10.3402/meo.v16i0.6035

Brookfield, S. D. (1995). *Becoming a critically reflective teacher*. San Francisco, CA: Jossey-Bass.

Brookfield, S. D., & Holst, J. D. (2011). *Radicalizing learning adult education for a just world.* San Francisco, CA: Jossey-Bass.

Brown, J. D. (1997). Reliability of surveys. *Japan Association for Language Teaching Testing & Evaluation SIG Newsletter, 1*(2), 18–21.

Campinha-Bacote, J. (2002). The process of cultural competence in the delivery of healthcare services: A model of care. *Journal of Transcultural Nursing, 13*(3), 181–184.

Campinha-Bacote, J. (2007). Becoming culturally competent in ethnic psychopharmacology. *Journal of Psychological Nursing and Mental Health Services, 45*(9), 27–33.

Campinha-Bacote, J. (2011). Delivering patient-centered care in the midst of a cultural conflict: The role of cultural competence. *Online Journal of Issues in Nursing, 16*(2), Manuscript 5. doi:10.3910/OJIN.Vol16No02Man05

Chen, G., Gully, S. M, & Eden, D. (2001). Validation of a new general self-efficacy scale. *Organizational Research Methods, 4*(1), 62–83. doi:10.1177/109442810141004

Coffman, M. J., Shellman, J., & Bernal, H. (2004). An integrative review of American nurses' perceived cultural self-efficacy. *Journal of Nursing Scholarship*, *36*(2), 180–185.

Commission on Accreditation in Physical Therapy Education. (2014). Number of PT and PTA Programs. Retrieved from: http://www.capteonline.org/uploadedFiles/CAPTEorg/About_CAPTE/Resources/Aggregate_Program_Data/NumberofPTPTAPrograms.pdf

Committee for Cultural Competence of the APTA. (2008). Blueprint for teaching cultural competence. American Physical Therapy Association. Retrieved August 18, 2013, from http://www.apta.org/search.aspx?q=interprofessional education

Coster, S., Norman, I., Murrells, T., Kitchen, S., Meerabeau, E., Sooboodoo, E., & d'Avray, L. (2008). Interprofessional attitudes amongst undergraduate students in the health professions: A longitudinal questionnaire survey. *International Journal of Nursing Studies, 45*, 1667–1681.

Creswell, J. W. (2009). *Research design qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: SAGE.

Curran, V. R., Sharpe, D., & Forristall, J. (2007). Attitudes of health sciences faculty members towards interprofessional teamwork and education. *Medical Education, 41*, 892–896.

Curran, V. R., Sharpe, D., Forristall, J., & Flynn, K. (2008). Attitudes of health science students towards interprofessional teamwork and education. *Learning in Health and Social Care, 7*(3), 146–156.

Curran, V. R., & Sharpe, D. (2007). A framework for integrating interprofessional education curriculum in the health sciences. *Education for Health, 20*(3).

Dahl, J. R., & Hall, A. M. (2013). A scale to measure pharmacy students' self-efficacy in performing medication therapy management services. *American Journal of Pharmaceutical Education, 77*(9), Article 191.

Darkwah, V., Ross, C., Williams, B., & Madill, H. (2011). Undergraduate nursing student's self-efficacy in patient education in a context-based learning program. *Journal of Nursing Education, 50*(10), 570–582. doi:10.3928/01484834-20110630-01

Davies, K., Harrison, K., Clouder, D. L., Gilchrist, M., McFarland, L., & Earland, J. (2011). Making the transition from physiotherapy student to interprofessional team member. *Physiotherapy, 97*, 139–144. doi:10.1016/j.physio.2010.08.001

Dubouloz, C. J., Savard, J., Burnett, D., & Guitard, P. (2010). An interprofessional rehabilitation university clinic in primary health care: A collaborative learning model for physical therapist students in a clinical placement. *Journal of Physical Therapy Education, 24*(1), 19–24.

Evans, J., Mazmanian, P., Dow, A., Lockeman, K., & Yanchick, V. (2014). Commitment to change and assessment of confidence: Tools to the design and evaluation of interprofessional education. *Journal of Continuing Education in the Health Professions, 34*(3), 155–163.

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (207). G^Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavioral Research Methods, 39*(2), 175-191.

Frenk, J., Chen, L., Bhutta, Z. A., Cohen, J., Crisp, N., Evans, T. …Zurayk, H. (2010). Health professionals for a new century: Transforming education to strengthen health systems in an interdependent world. *Lancet Commissions, 346,* 1923–1958.

Frankfort-Nachmias, C., & Nachmias, D. (2008). *Research methods in the social sciences* (7th ed.). New York: Worth.

Gilbert, J. H. V. (2005). Interprofessional education for collaborative, patient-centred practice. *Nursing Leadership, 18*(2), 32–38.

Goldenberg, D., Andrusyszyn, M. A., Iwasiw, C. (2005). The effect of classroom simulation on nursing students' self-efficacy related to health teaching. *Journal of Nursing Education, 44*(7), 310–314.

Graybeal, C., Long, R., Scalise-Smith, D., & Zeibig, E. (2010). The art and science of interprofessional education. *Journal Allied Health, 39,* 232–237.

Goto, S. T., & Martin, C. (2009). Psychology of success: Overcoming barriers to pursuing further education. *Journal of Continuing Higher Education, 57,* 10–21. doi:10.1080/07377360902810744

Greenman, N. P., & Dieckman, J. A. (2004). Considering criticality and culture as pivotal in transformative teacher education. *Journal of Teacher Education, 55*(3), 240–255. doi:10.1177/0022487104263764

Gozu, A., Beach, M. C., Price, E. G., Gary, T. L., Robinson, K., Palacio, A.…Cooper, L. A. (2007). Self-administered instruments to measure cultural competence of health professionals: A systematic review. *Teaching and Learning in Medicine: An International Journal, 19*(2), 180–190. doi:10.1080/10401330701333654

Hawala-Druy, S., & Hill, M. (2012). Interdisciplinary: Cultural competency and culturally congruent education for millennials in health professions. *Nurse Education Today, 32*, 772–778. doi:10.1016/j.nedt.2012.05.002

Hoffman, J., & Redman-Bentley. (2012). Comparison of faculty and student attitudes toward teamwork and collaboration in interprofessional education. *Journal of Interprofessional Care, 26*, 66–68. doi:10.3109/13561820.2011.602441

Institute of Medicine. (2003). *Health professions education: A bridge to quality*. Washington, DC: National Academy Press.

Interprofessional Education for Collaborative, Patient-Centred Practice. (2013). Retrieved from http://cihc.wikispaces.com/Interprofessional+Education+for+Collaborative,+Patient-Centred+Practice

Interprofessional Education Collaborative Expert Panel. (2011). *Core competencies for interprofessional collaborative practice: Report of an expert panel*. Washington, DC: Author. Retrieved from: https://ipecollaborative.org/uploads/IPEC-Core-Competencies.pdf

Jackson, V. (2011). Cultural competence in physical therapy education: Student perceptions on the effectiveness of cultural competence education methodology. *Journal of the National Society of Allied Health, Spring/Summer*, 31–38.

Jeffreys, M. R., & Dogan, E. (2012). Evaluating the influence of cultural competence education on student's transcultural self-efficacy perceptions. *Journal of Transcultural Nursing, 23*(2), 188–197. doi:10.1177/1043659611423836

Jones, M. E., Cason, C. L., & Bond, M. L. (2004). Cultural attitudes, knowledge, and skills of a health workforce. *Journal of Transcultural Nursing, 15*(4), 283–290.

Jungert, T., & Rosander, M. (2010). Self-efficacy and strategies to influence the learning environment. *Teaching in Higher Education, 15*(6), 647–659. doi:10.1080/13562517.2010.522080

Kek, M., & Huijser, H. (2011). Exploring the combined the relationship of student and teacher factors on learning approaches and self-directed learning readiness at a Malaysian university. *Studies in Higher Education, 36*(2), 185–208.

Kolb, D. A. (1983). *Experiential learning: Experience as the source of learning and development.* Upper Saddle River, NJ: Prentice Hall.

MacDonald, M. B., Bally, J. M., Ferguson, L. M., Murray, B. L., Fowler-Kerry, S. E., & Anonson, J. M. S. (2010). Knowledge of the professional role of others: A key interprofessional competency. *Nursing Education, 10,* 238–242. doi: 10.10.1016/j.nepr.20096.11.012

Martin-Rodriquez, L. S., Beaulieu, M. D., D'Amour, D., & Ferrada-Videla, M. (2005). The determinants of successful collaboration. *Journal of Interprofessional Care, 1,* 132–147. doi:10.1080/13561820500082677

Mann, K., McFetridge-Durdle, J., Martin-Misener, R., Clovis, J., Rowe, R., Beanlands, H., & Sarria, M. (2009). Interprofessional education for students of the health professions: The "seamless care model." *Journal of Interprofessional Care, 23*(3), 1–10. doi:10.1080/13561820802697735

Mann, K., McFetridge-Durdle, J., Breau, L., Clovis, J., Martin-Misener, R., Matheson, T., Beanlands, H., & Sarria, M. (2012). Development of a scale to measure health professions students' self-efficacy beliefs in interprofessional learning. *Journal of Interprofessional Care, 26*, 92–99. doi:10.3109/13561820.2011.640759

Norgaard, B., Ammentorp, J., Kyvik, K. O., & Kofoed, P. E. (2012). Communication skills training increases self-efficacy of health care professionals. *Journal of Continuing Education in the Health Professions, 32*(2), 90–97. doi:10.1002/chp.21131

Kegan, R. (1994). *In over our heads: The mental demands of modern life.* Cambridge, MA: Harvard University Press.

Kek, M., & Huijser, H. (2011). Exploring the combined the relationship of student and teacher factors on learning approaches and self-directed learning readiness at a Malaysian university. *Studies in Higher Education, 36*(2), 185–208.

Parsell, G. & Bligh, J. (1999). The development of a questionnaire to assess the readiness of health care students for interprofessional learning (RIPLS). *Medical Education, 33*, 95–100.

Paz-Lourido, B. & Kuisma, R. M. E. (2013). General practitioners' perspectives of education and collaboration with physiotherapists in primary health care: a discourse analysis. *Journal of Interprofessional Care, 27*(3), 254–260. doi:10.3109/13561820.2012.745487

Pecukonis, E., Doyle, O., Bliss, D. (2008). Reducing barriers to interprofessional training: Promoting interprofessional cultural competence. *Journal of Interprofessional Care, 22*(4), 417–428.

Persaud, A., & Salter, D. W. (2003). Understanding women's classroom "fit" and participation as interactions between psychological and environmental types. *Journal of Classroom Interaction, 38*(2).

Quine, A., Hadjistavropoulos, D., & Alberts, N. M. (2012). Cultural self-efficacy of Canadian nursing students caring for Aboriginal patients with diabetes. *Journal of Transcultural Nursing, 23*(3), 306–312.

Reeves, S., Zwarenstein, M., Goldman, J., Barr, H., Freeth, D., Koppel, I., & Hammick, M. (2010). The effectiveness of interprofessional education: Key findings from a new systematic review. *Journal of Interprofessional Care, 24*(3), 230–241. doi:10.3109/13561820903163405

Reeves, S., Goldman, J., Gilbert, J., Tepper, J., Silver, I., Suter, E. & Zwarenstein, M. (2011). A scoping review to improve conceptual clarity of interprofessional

interventions. *Journal of Interprofessional Care, 25*, 167–174. doi:10.3109/13561820.2010.529960

Roessger, K. M. (2012). Toward an interdisciplinary perspective: A review of adult learning frameworks and theoretical models of motor learning. *Adult Education Quarterly, 62*(4), 371–392. doi: 10.1177/0741713612436598

Salter, D. W. (2013). Assessing the developmental instruction model: An exploratory study of classroom "fit" using environmental types. *Journal of Educational Research and Practice, 3*(1), 1–14. doi:10.5590/JERAP.2013.03.1.01

Salter, D. W. (2012). *Environmental types: The personalities of everyday places* [e-Book edition].

Salter, D. W. (2002). A validity study of the Salter environmental type assessment. *Journal of Career Assessment, 10*(4), 428–440. doi:10.1177/1069072702238405

Salter, D. W. & Irvin, S. D. (2003). A validity study of the Salter environmental type assessment and the university residence environment scale. *Journal of College and University Study Housing, 32*(2), 20–27.

Salter, D. W. & Junco, R. (2007). Measuring small-group environments: A validity study of scores from the Salter environmental type assessment and the group environment scale. *Educational and Psychological Measurement, 67*(3), 475–486. doi:10.1177/0013164406292083

Salter, D. W., Junco, R., & Irvin, S. D. (2004). Campus social climate correlates of environmental type dimensions. *NASPA Journal, 41*(4), 742–759.

Salter, D. W. & Persaud, A. (2003). Women's views of the factors that encourage and discourage classroom participation. *Journal of College Student Development, 44*(6), 831–844.

Sargeant, J. (2009). Theories to aid understanding and implementation of interprofessional education. *Journal of Continuing Education in the Health Professions, 29*(3): 178–184. doi:10.1002/chp.20033

Scherbaum, C. A., Cohen-Charash, Y., & Kern, M. J. (2006). Measuring general self-efficacy: A comparison of three measures using item response theory. *Educational and Psychological Measurement, 66*(6), 1047–1063. doi: 10.1177/0013164406288171

Snow, W. M., Wener, P., MacDonald, L., Ateah, C., Davis, P., Fricke, M., …Anderson, J. E. (2011). Student-identified participation barriers to interprofessional education. *Interdisciplinary Studies Journal, 1*(2), 19–28.

Swisher, L. L., Woodard, L. J., Quillen, W. S., & Monroe, A. D. (2010). Centralized and decentralized organizational models of interprofessional education for physical therapist and medical students. *Journal of Physical Therapy Education, 24*(1), 12–18.

Tavakol, M. & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education, 2*(1), 53–-55. doi:10.5116/4dfb.8dfd

Thiele, A. & Barraclough, A. (2007). The framework for physical therapist and physical assistant partnership: Interprofessional education and collaborative patient-centered care, *Journal of Physical Therapy Education, 21*(3), 47–52.

Thistlethewaite, J. E., Forman, D., Matthews, L. R., Rogers, G. D., Steketee, C., & Yassine, T. (2014). Competencies and frameworks in interprofessional education: A comparative analysis. *Journal of the Association of American Medical Colleges, 89*(6), 869–875.

Townsend, L., & Scanlan, J. (2011). Self-efficacy related to student nurses in the clinical education setting: A conceptual analysis. *International Journal of Nursing Education Scholarship, 8*(1), Article 13. doi:10.2202/1548-932x.2223

Van Soeren, M., Devlin-Cop, S, MacMillan, K., Baker, L., Egan-Lee, E., & Reeves, S. (2011). Simulated interprofessional education: An analysis of teaching and learning process. *Journal of Interprofessional Care, 25*(6), 434–440.

Weinstein, R. S., Brandt, B. F., Gilbert, J. H. V., & Schmitt, M. H. (2013). Collaborating across borders III (CAB III) "Interprofessional collaboration: from concept to preparation to practice." *Journal of Interprofessional Care, 27,* 1–5. doi:10.3109/13561820.2013.761517

Wiesner, A. (2006). Two-sample Hotelling's T^2. Unpublished manuscript, Department of Statistics, Penn State University, University Park; Pennsylvania. Retrieved from http://sites.stat.psu.edu/~ajw13/stat505/fa06/11_2sampHotel/

Wilhelmsson, M., Pelling, S., Uhlin, L., Dahlgren, L. O., Faresjo, T., & Forslund, K. (2012). How to think about interprofessional competence: A metacognitive model. *Journal of Interprofessional Care, 26*, 85–91. doi:10.3109/12561820.2011.644644

Woodruff, S. L. & Cashman, J. F. (1993). Task, domain, and general efficacy: A reexamination of the self-efficacy scale. *Psychological Reports, 72,* 423–432.

World Health Organization. (2010). Health professions networks nursing and midwifery human resources for health. Framework for action on interprofessional education and collaborative practice. Geneva, CH: author.

Zwarenstein, M., Goldman, J., & Reeves, S. (2009). Interprofessional collaboration: Effects of a practice-based intervention on professional practice and healthcare outcomes. *Cochrane Database of Systematic Reviews, Issue 1.* doi:10.1002/14651858.CD002213.pub2.

Appendix A: Recruitment E-mail

Invitation E-mail to Students to Participate in Research

My name is Laura Johnson Smith and I am a PhD student from Walden University. I would like to invite you to participate in a research study. The purpose of this study is to determine whether for entry level physical therapy students there are differences in perceived self-efficacy, cultural competence, and perception of program environment prior to first clinical internship. The benefits of participation in this study include advancement of the research in physical therapy education. Data collection entails anonymous participation by completing three short paper and pencil instruments and a demographic questionnaire that should take no longer than 20 minutes.

If you are interested, please come to room ___, at _(time), on __(date).

Thank you,

Laura Johnson Smith

Appendix B: Consent Form

CONSENT FORM

You are invited to take part in a research study to determine whether there are differences in perceived self-efficacy, cultural competence, and perception of program environment of physical therapy students in different curricula prior to first clinical internship. Data collection entails anonymous participation by completing three short paper and pencil instruments and a demographic questionnaire that should take no longer than 20 minutes.

The researcher is inviting full-time students enrolled in an on-campus entry-level doctor of physical therapy program who have not completed a formalized clinical internship of six weeks or greater in length to be in the study. Private and public institutions in the United States will be included. This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part.

This study is being conducted by a researcher named Laura Johnson Smith, who is a doctoral student at Walden University. You may already know the researcher as Assistant Professor Dr. Laura Smith but this study is completely separate from that role.

Background Information: The purpose of this study is to determine whether for entry level physical therapy students there are differences in perceived self-efficacy, cultural competence, and perception of program environment prior to first clinical internship in two different types of programs.

Procedures: If you agree to be in this study, you will be asked to:

- Read this letter of consent.
- Complete a demographic questionnaire.

• Complete three paper and pencil surveys.

• Data will only be collected once.

The total time to complete the three instruments and demographic questionnaire is approximately 20 minutes.

Here are some sample questions:

____ How old are you?

____ I like to cook. (you rate your response using the scale provided)

____ I am willing to learn from others as cultural informants. (you rate your response using the scale provided)

Voluntary Nature of the Study: Participation in this study is voluntary and anonymous. Everyone will respect your decision of whether or not you choose to be in the study. No one at (insert name of the university) will treat you differently if you decide not to be in the study. If you decide to join the study now, you can still change your mind later because you may stop completing the questionnaires at any time.

Risks and Benefits of Being in the Study: Being in this type of study involves some risk of the minor discomforts that can be encountered in daily life, such as sitting for 20 minutes and writing. Being in this study would not pose risk to your safety or wellbeing. The benefits of participation in this study include advancement of the research in physical therapy education.

Payment: There will not be any payment related to participation in this study.

Privacy: Any information you provide will be kept anonymous. Your consent will be implied through completion of the demographic questionnaire and the three instruments. The researcher will not use your personal information for any purposes outside of this research project. Also, the researcher will not include your name or anything that could identify you in

the study reports. Data will be kept secure by keeping information in a locked cabinet. Data will be kept for a period of at least 5 years, as required by the university.

Contacts and Questions: You may ask any questions you have now. Or if you have questions later, you may contact the researcher via e-mail at xxxxxxxxxxxxx. If you want to talk privately about your rights as a participant, you can call Dr. Leilani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is xxx-xxx-xxxx. Walden University's approval number for this study is **08-07-14-0232603** and it expires on **August 6, 2015.**

Please keep this consent form for your records.

Statement of Consent: I have read the above information and I feel I understand the study well enough to make a decision about my involvement. By completing the following packet of information my consent is implied, and I understand that I am agreeing to the terms described above.