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**LEADERSHIP IN PHYSICAL THERAPIST EDUCATION: INSTRUCTIONAL
STRATEGIES AND ASSESSMENT METHODS USED AMONG U.S. CAPTE
ACCREDITED PROGRAMS**

A dissertation submitted to
the Graduate College of
Marshall University
In partial fulfillment of
the requirements for the degree of
Doctor of Education

In
Leadership Studies
by

Gretchen R. Prather

Approved by

Dr. Dennis Anderson, Committee Chairperson

Dr. Charles Bethel

Dr. D. Scott Davis

Marshall University
December 2022

APPROVAL OF DISSERTATION

We, the faculty supervising the work of **Gretchen Prather**, affirm that the dissertation, **Leadership in Physical Therapist Education: Instructional Strategies and Assessment Methods Used Among U.S CAPTE Accredited Programs** meets the high academic standards for original scholarship and creative work established by the EdD Program in **Leadership Studies** and the College of Education and Professional Development. This work also conforms to the editorial standards of our discipline and the Graduate College of Marshall University. With our signatures, we approve the manuscript for publication.

<u>Dr. Dennis M. Anderson</u> Leadership Studies	<u><i>Dennis Anderson</i></u> Committee Chairperson Major	<u>7/21/2022</u> Date
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DEDICATION

This dissertation is dedicated to my husband and best friend, Chad. You are a constant source of encouragement, strength, love and understanding. I am truly thankful for having you in my life.

To my children, Aubrey, Eli, and Haley, thank you for always reminding me what is most important, for your understanding, and for inspiring me to be better. You have taught me more than any degree ever could. To my mother, Jeannie, for instilling in me a strong work ethic, grit, and resilience that have carried me through life. I love you all and could not have begun to have met this milestone without the meaning you give to my life and your unwavering support.

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ABSTRACT

The physical therapy profession has recently placed greater significance on leadership education and research at all levels of professional development. Excellence and innovation in physical therapy practice must address leadership development beginning in professional education. This call for reform has been adopted broadly, including from an accreditation standpoint. The challenge now becomes to determine the most effective ways for preparing student physical therapists to lead in today's fluid healthcare environment. This study examined leadership content among U.S. CAPTE accredited physical therapist education programs and, specifically, the instructional strategies and assessment methods frequently used to develop emerging leaders. An online survey was sent to all program directors of fully accredited programs that operate in a primarily in-person, traditional learning format. The sample consisted of 38 programs distributed among all CAPTE geographical regions. Descriptive statistics were used to analyze the data. The results suggest that group projects, business plan development, service learning, and class or small group discussion are the primary instructional strategies used in physical therapist education leadership development. The most frequently used assessment strategies include group projects/presentations, portfolios, individual leadership development plans and term papers. Physical therapist educators use discussion, analysis, and experiential teaching methods to grow leadership capacity. This sample tended to more frequently use discussion-based strategies and emphasize team-learning activities. Assessment strategies often used by participating programs were primarily reflective of self-leadership competency. These findings provide additional evidence for how leadership content can be incorporated into physical therapist education and may serve as a guide for curricular design.

Keywords: physical therapy, leadership, curriculum, instruction, assessment, strategies.

CHAPTER 1

INTRODUCTION

Worldwide, health care is changing, and systems of care are increasingly investing in developing leaders who are adaptable and visionary (Eigsti & Davis, 2018). Healthcare professionals sustain mounting pressure to provide more efficient, cost-effective, and evidence-based care for the complex health needs of society. A team of medical and rehabilitation providers, positioned to shape the current and future outlook of healthcare, must have the leadership capacity to transform the industry. A major challenge facing physicians (Blumenthal et al., 2012, Chen, 2018), pharmacists (Janke et al., 2016), nurses (Curtis et al., 2011), occupational therapists (Copolillo et al., 2010), and physical therapists (Dean & Duncan, 2016) is the insufficient leadership development in the professional education programs for these disciplines. Only recently has physical therapy research begun to acknowledge this deficit and address it through research and accreditation standards.

Not only do current and future physical therapy students need to work collaboratively in interdisciplinary teams, but also as direct access providers. Entry-level physical therapists must be equipped to handle the challenges of today's evolving healthcare environment in order to fulfill the American Physical Therapy Association's (APTA, 2018) vision: "Transforming society by optimizing movement to improve the human experience." For practicing physical therapists and faculty, the APTA offers online leadership development resources and two formal leadership training programs: the APTA Fellowship in Education Leadership and the three-part Leadership Administration Management Professionalism (LAMP) Leadership Development Certificate Program (APTA, 2020). Despite the emphasis afforded leadership development by the APTA, the practice has not trickled down to established standards for entry-level education.

Methods for preparing graduates with curriculum related to leadership in doctoral physical therapist education is ill-defined. In fact, the Commission on Accreditation of Physical Therapy Education (CAPTE, 2016) has dedicated only one curricular element to a broad inclusion of leadership to be addressed in entry-level education: “Participate in professional and community organizations that provide opportunities for volunteerism, advocacy, and leadership.” The American Council of Academic Physical Therapy (ACAPT, 2021b) recently released their Leadership Compass, an online, self-guided leadership development tool for use by physical therapy administrators, clinicians, faculty, and students. The Leadership Compass is divided into three different spheres of influence containing 12 different categories with various learning outcomes and resources (ACAPT, 2021b). Meanwhile, current research is still attempting to define the qualities and competencies related to leadership in the profession and establish a physical therapy-specific leadership framework (Sebelski, Green-Wilson, et al., 2020; Tschoepe et al., 2021). Collectively, the various stakeholders agree that leadership development is a critical component of physical therapist practice and quality patient care, which is often delivered in the context of dynamic, collaborative teams. However, a systematic approach to developing physical therapist student leaders within the academic community is evolving and, at times, inconsistent and ill-defined.

Background

Rapid and constant changes in the healthcare landscape over the last two decades have resulted in the profession of physical therapy recognizing the need to better understand and define the leadership and management skills required for entry-level and experienced clinicians. In 1999, the APTA created a task force to develop a position statement regarding professional education related to LAMP. The resulting white paper defined the values and beliefs underlying

LAMP skills and identified available educational strategies and resources. The authors provided general examples of context-specific learning experiences and expressed that all individuals involved in educating student physical therapists should facilitate development of LAMP skills throughout academic preparation (Kovacek et al., 1999).

Further investigation by Lopopolo, et al. (2004) identified 178 LAMP components, 44% of which, as identified by experts, required extensive knowledge by the entry-level clinician. Schafer, et al. (2007) further conceptualized and reduced LAMP components with more emphasis placed on professionalism and leadership as well as entry-level expectations. In recent years, physical therapist education has transitioned from a more traditional learning model to one of competency-based education. Thus, Sebelski, Green-Wilson, et al. (2020) identified 37 leadership competencies, some of which overlapped with those described by LAMP, deemed “very important” for new graduates as well as for experienced, licensed clinicians. Although the literature in the field of physical therapy supports the importance of leadership competency in education and practice, research has primarily focused on identifying competencies and building a leadership competency framework (Tschoepe et al., 2021) versus content, delivery, and teaching methods. An in-progress survey study by Sebelski (2021), however, aims to determine educational leadership practices among accredited physical therapist academic and residency programs. The survey focuses on leadership theory and models, credit hour allocation, timing of content delivery, the presence or absence of learning activities related to defined leadership competencies, assessment methods, and instructional resources.

Statement of the Problem

A clear and intentional need for formal leadership development within the didactic and clinical preparation of physical therapist students has been recognized; however, the most efficacious methods for doing so remain elusive (Jensen, Hack, et al., 2017). There is little literature that concentrates on teaching methods related to physical therapist student leadership development in doctoral physical therapist education (LoVasco, 2019). With little direction from CAPTE and ACAPT, accredited programs vary in their approach and emphasis on leadership education. This lack of guidance and standardization of curricular content results in a high degree of variability among programs, inconsistent inclusion of leadership development, and potential deficiency in preparation of doctoral physical therapist graduates. The greatest challenges to leadership development are determining teaching methods, identifying techniques for assessment of competency, and methods for best modeling and mentoring. Examining the various approaches to leadership education among accredited physical therapy programs may provide necessary pragmatic evidence for faculty as leadership becomes integrated into physical therapist education.

Purpose of the Study

The purpose of this study was to examine the teaching and assessment methods currently used for leadership development in physical therapist entry-level education programs and the most frequent means for doing so. The research findings in this study will fill a gap in the literature regarding entry-level physical therapist leadership preparation. The investigation will provide guidance about curricular development and assist programs in preparing future generations of physical therapists for the demands of leading in today's evolving healthcare delivery systems.

Research Questions

This investigation aims to answer the following research questions.

1. What signature pedagogy is utilized by accredited physical therapist education programs to prepare graduates to lead?
2. At what level of assessment (self, others, community/organizations) are Doctor of Physical Therapy programs measuring student physical therapists' leadership competency?

Significance of the Study

Effective leadership is essential for healthcare professionals to address the needs of patients and the shifting healthcare environment in which patients are encountered. As providers of primary care, physical therapists are faced with many challenges that require leadership at the personal, interpersonal, and community levels. Physical therapists often function in multi-disciplinary teams that require efficiency, decision-making, and collaboration. Many physical therapists are private practice owners, clinical educators, professional advocates, public wellness facilitators, and supervisors. The autonomy and responsibility gained by the profession over the last century as well as the unique complexities of the current healthcare environment have resulted in a need for increasing leadership capacity for physical therapy practitioners.

Historically, professionalism, which embodies many leadership qualities, has been the focus of physical therapy from an educational and practice perspective. Green-Wilson calls for redefining “professionalism” as “leadership,” recognizing that leadership is action-oriented and leadership development must be explicit and intentional in physical therapist education programs (Tschoepe & Davis, 2015). However, little evidence exists to guide and support the physical therapy educator in developing young leaders as they prepare to enter the profession. Recent research in

PT education has focused on recommendations to ensure excellence, identify leadership competencies, and develop conceptual frameworks (Jensen, Hack, et al., 2017, Sebelski, Green-Wilson, et al., 2020, Tschoepe et al., 2021). Currently, core leadership competencies are being defined in the profession for both the entry-level and experienced clinicians (Tschoepe et al., 2021). Curricular design surrounding leadership knowledge, skills, and behaviors is inconsistent and wanting among many accredited programs. Furthermore, the practical integration of leadership into entry-level education and related outcomes has not been widely studied, save a select few programs. This study attempts to identify the teaching and assessment methods used by CAPTE accredited schools and the frequency with which such methods.

Physical therapy educators and accrediting bodies seem to agree that addressing leadership development in physical therapist education is compulsory, although clear standards and formal guidelines have not been established. The most effective pedagogical strategies and curricular design are unknown. While some programs are meeting minimum requirements, other programs demonstrate exceeding levels of commitment to leadership education. The research findings in this study can be used to guide curricular development and provide insight into effective strategies for preparing entry-level leaders in physical therapy during didactic education and clinical experiences.

Definition of Terms

The following are definitions of terms used throughout this study:

American Council of Academic Physical Therapy (ACAPT) - A not-for-profit association dedicated to excellence in physical therapist education programs as a whole (ACAPT, 2021a).

Assessment methods – a variety of methods and tools used to systematically evaluate, measure, and document evidence of student learning, knowledge, skill acquisition, and readiness.

Cohort – a group of students admitted into the same academic program, progressing through the same curriculum, and who will earn their degree together.

Commission on Accreditation in Physical Therapy Education (CAPTE) - United States agency recognized to accredit education programs for the preparation of physical therapists (CAPTE, 2016).

Competency - An observable ability of a health professional, integrating multiple components including knowledge, skills, and abilities that result in behaviors required to effectively perform a job. Competencies can be either technical or affective and can be assessed and measured to ensure acquisition (Frank et al., 2010; SHRM, 2021; Englander et al., 2017).

Entry-level – At the completion of the DPT program, including both didactic and clinical education coursework.

Instructional strategies – “help facilitate learning experience and can be defined as a set of tools (e.g., self-assessments, readings, media), methods (e.g., discussion, reflection, role play, and activities), and content (e.g., theories, models, and competencies), that, when combined, create an instructional approach” (Jenkins & Allen, 2017, p.3-44).

Leadership – “Leadership in health care involves influencing the actions of others toward accomplishing goals, setting the pace and direction of change, and facilitating innovative practice” (Desveaux et al., 2016, p.54).

Pedagogy – The theory and practice of education.

Limitations of the Study

This study involved a non-experimental design, which did not allow for true randomization of participants. As with any survey, responses were self-reported and may reflect a lack of honesty, the inclination toward the socially desirable response, or the halo effect. More

importantly, response rate is also a concern with any survey-based research. CAPTE accredited physical therapy schools are required to survey their graduates upon exiting the program, at 1-year and 5-years post-graduation. At Marshall University School of Physical Therapy response rates for the surveys are approximately 100%, 45%, and 30%, respectively. Response rates for external surveys are 10-15%. The sample size may potentially be too small to allow for adequate power from which to draw conclusions. A low response rate, as well as a potential lack of diversity in the characteristics of the respondents, may limit external validity. For example, respondents from public institutions of higher education may not generalize to private schools or to schools with more socially or economically diverse student bodies. Variations in types of curricula (e.g., hybrid, traditional, problem-based learning.), program size, location, and type may also limit generalizability and confound data analysis.

Temporal variables exist which may affect the findings. CAPTE did not include “leadership” in the required curricular standards until 2016. Some programs may still be defining their leadership curriculum, which may limit the leadership development capacity for the entry-level graduate.

Some programs may resist the completion of the survey for the purposes of appraisal. They may fear concern for breach of confidentiality, critical feedback which may reflect negatively on the program, or lack of desire or time to devote to participation.

Sample

Purposeful sampling methods were employed to recruit faculty from accredited DPT programs to participate in the study. Email addresses of program directors at accredited physical therapist education programs were obtained from the CAPTE website. An electronic solicitation letter was sent to each of the program directors explaining the importance of the investigation in

adding to the body of knowledge related to physical therapist leadership education and requesting participation. Purposive sampling will allow for surveying the population of interest: core faculty responsible for leadership content, program curriculum committee chairs or program directors at accredited physical therapist programs. The population (N=251) will consist of all accredited U.S. programs that fit the inclusion criteria.

The criterion for participating in the study are faculty designees or program directors from accredited physical therapist programs in the United States. Non-accredited physical therapist programs and those undergoing candidacy were excluded from this study, as are physical therapist assistant (PTA) programs and PTA to PT bridge programs, regardless of accreditation status. Additional exclusions include programs that offer the majority of courses in a distance education/online format and those that offer part-time, evening or weekend learning arrangements.

Chapter Summary

The demands of the current healthcare landscape as well as the evolving identity of a young profession appeal to physical therapists to enter their careers equipped to lead. In order to meet the APTA's mission statement, one must not only possess the clinical skills required to address movement and function, but must also emulate the skills, behaviors, and attitudes of a leader. "Transforming society" and "improv[ing] the human experience" transcends technical standards and professionalism, the call implores physical therapists to lead. The profession has made great strides in leadership development initiatives for licensed physical therapists and clinicians who wish to transition to academia, the entry-level leadership curriculum continues to lag. Physical therapist education programs would benefit from an investigation of the inputs, processes, and outcomes of adopting leadership content that may guide future curricular design

and competency-based learning. This study will provide a review of current leadership curriculum and instruction among CAPTE accredited programs in order to advance the evidence and continue the path towards more intentional development of young leaders in the profession.

CHAPTER 2

LITERATURE REVIEW

The healthcare environment is rapidly evolving, evidenced by vast changes in healthcare legislation, systems of delivery, composition of the inter-professional team, and professional entry-level preparation. The need for leadership skills among healthcare professionals, including physical therapists, is unquestionable and critical. However, the incorporation of leadership development into the education of healthcare professionals is a relatively new concept with methods for doing so varying between professions and among programs within the same profession. Little evidence and guidance are available for incorporating leadership principles and skills into graduate professional programs and is particularly true for physical therapist education programs. This chapter begins with a broad overview of academic leadership programs, including instructional methods often utilized and their efficacy. Next, the infusion of leadership into various health professions' curriculum is explicated. Then, curricular design in physical therapist education is explored, including the progress of leadership initiatives. The chapter also explores the leadership competencies that are expected of entry-level physical therapists. Finally, the review will identify the gaps that remain in entry-level physical therapist leadership development.

Leadership Studies

For nearly a century, scholars have studied leadership with different definitions, theories, and frameworks evolving over the years (Northouse, 2015). Leadership is a complex, multidimensional concept which is difficult to define. Northouse (2015, p.6) broadly defines leadership as “a process whereby an individual influences a group of individuals to achieve a common goal.” Leadership studies has evolved as an interdisciplinary field of study which

prepares individuals for transforming complex work environments, navigating professional relationships and interactions, and ensuring organizational growth and success (Roberts & Bailey, 2016).

Academic leadership development programs were founded in the late 1980's and early 1990's (Riggio et al., 2003). Since that time, undergraduate and graduate-level leadership program growth has soared to over 2000 (ILA, 2020). This proliferation supports the notion that leadership can be acquired and educational programs which develop, and train leaders are important (Guthrie et al., 2018; Brungardt, 1996). With the growth in leadership education, the last decade has seen more focus on the importance of studying instructional and assessment strategies used by leadership educators to identify signature pedagogies and educational imperatives (Jenkins, 2012; Williams et al., 2005). Priest & Jenkins (2019) propose that leadership education must be intentional, inclusive, experiential, and relational in both design and delivery. Further exploration of the methods for teaching and assessing leadership is required.

Using a web-based questionnaire sent to U.S. and international leadership educators, Jenkins (2012 & 2018) examined instructional and assessment strategies used in undergraduate and graduate leadership studies. Based on his findings (Jenkins, 2012 & 2013), undergraduate instructors used discussion-based pedagogies most frequently. Upon further comparison with similar methodology, Jenkins (2018) found that graduate level instructors used the following teaching strategies more frequently than their undergraduate counterparts: small group discussion, case studies, problem-based learning, debates, and storytelling. On the other hand, undergraduate leadership educators preferred games, in-class short writing, and service learning more so than the graduate educators. From an assessment standpoint, graduate instructors placed

more weight on term papers, research projects and presentations, quizzes, and individual leadership development plans. Meanwhile, undergraduate instructors relied on reflective journals and exams as tools to assess student learning. Again in 2020, Jenkins used a mixed methods design to confirm that discussion-based pedagogies, group projects/presentations, and case studies were most frequently utilized while quizzes, tests, role play, games, and simulation were typically avoided in higher education. Despite the evidence for the value of the latter highly experiential instructional strategies, Jenkins (2020) concluded that costs and challenges may have motivated their limited use. Other investigators (Williams & McClure, 2010) have agreed that an understanding of instructional methods which incorporate experiential learning and public pedagogy is not only essential for effective teaching and learning but is also required to move leadership education forward.

Many scholars posit that the study of leadership prepares students, regardless of profession, and transcends disciplines (Doh, 2003; Zimmerman-Oster & Burkhardt, 1999). Based on leadership research in healthcare-related fields over the last two decades, this statement holds weight. Faced with growing challenges of the modern healthcare workforce, health professionals need to not only embody the technical competencies signifying expertise in their respective fields, but they must also be equipped with the managerial skills and leadership capacity to effect change, ensure quality, and promote efficiency (Ladhani et al., 2015).

Leadership Curriculum in Healthcare Professions

When delivering care, all practitioners assume leadership responsibilities at various levels of the healthcare organization and system (Blumenthal et al., 2012). Leadership roles for health professionals have emerged and advanced over time. Formerly, leadership responsibilities outside of direct patient care took the form of management and administrative tasks such as

scheduling, staffing, organizing, and directing discipline-specific departments. Now, clinical leadership roles extend beyond technical expertise and managerial processes. Healthcare professionals must be prepared to lead and coordinate collaborative interdisciplinary teams, solve complex problems, and challenge service delivery models. Regardless of title or position, leadership is required at all levels of healthcare (Haverfield et al., 2020; Tschoepe et al., 2021). This shift in demand placed on healthcare professionals by the industry and policymakers calls for reform in entry-level preparation expectations. Furthermore, high-quality, safe, and cost-effective healthcare reflecting superior clinical outcomes is dependent on the leadership skills and abilities of health professionals (Chen, 2018; Blumenthal et al., 2012).

The Quadruple Aim of healthcare was introduced in 2014 with goals to enhance the patient and provider experience, reduce costs, and improve population health (Haverfield et al., 2020). Fulfillment of the Quadruple Aim requires that frontline providers demonstrate leadership healthcare outcomes (Blumenthal et al., 2012). In a cross-sectional study using an online questionnaire, nearly 85% of medical students in the United Kingdom recognized the significance of leadership responsibilities in practice with over 60% desiring more training during medical school (Rouhani et al., 2018). According to Sadowski and colleagues (2018), physician competence requires leadership, but resources regarding the best approaches for leadership development of physicians in undergraduate and residency training remain scant and undefined. Undergraduate medical education lacks evidence for leadership and management education as well as the means for curriculum incorporation (Quince et al., 2014). To be effective, leadership development initiatives need to commence early in medical training (Chen, 2018). Instructional methods including experiential learning, mentoring, coaching, small group teaching, reflective practice, projects and 360-degree evaluations were shown to be preferred and

effective while interprofessional training opportunities were lacking in graduate medical education (Sadowski et al., 2018). The same researchers also recommended utilization of a leadership framework to assist with curricular development. Medical schools are encouraged to consult the Medical Leadership Competency Framework (Academy of Medical Royal Colleges, 2010) to design curriculum and leadership training courses, provide self-assessment measures with structured feedback, and assist with personal leadership planning and career development. Despite this framework, many medical education programs are deficient in formal leadership programs (Chen, 2018). This may be attributable to the wide variation in expectations for competencies, standards, and outcomes as well as time-constraints of a dense curriculum (Till et al., 2020).

Like medical curricula literature, nursing studies advise integration of leadership content into pre-licensure nursing education programs (Morrow, 2015). Teaching strategies are presented to facilitate leadership in undergraduate nursing education: service-learning experiences, classroom simulation, use of video resources, films and television, and internships (Lins et al., 2018). Additionally, Morrow (2015) identified the use of problem-based learning, video cases, role play, use of social media, peer-assisted learning, and critical reflection as instructional tools that facilitate leadership development in nursing students. Researchers conclude that nurses must possess the necessary leadership knowledge and skills embedded in a longitudinal fashion, yet half of those surveyed noted that nursing education programs should, but failed to, assist in developing leadership qualities (Ozturk & Kahrman, 2013). A gap exists in the literature and translation of the available evidence to curricular design and teaching methods in undergraduate preparation for nurse and physician leaders.

Pharmacy education has faced a similar call to reform curricula with leadership development as a desired goal (Tucci et al., 2019). Using a Delphi process, Traynor et al. (2013), identified 12 guiding principles that describe the why for investing in leadership development, fundamental precepts, and the core tenets for student leadership education. Using the Delphi results as a foundation, Janke et al. (2016), described the envelopment of the competencies into a student leadership development initiative within a pharmacy program beginning with matriculation. Janke et al. (2016) advocated for not only the longitudinal incorporation of leadership development into the pharmacy curriculum, but that “leadership is a professional obligation.” Furthermore, he cautioned that when considering infusion of leadership content into curriculum, educators must realize that professionalism, management, leadership, and advocacy are interrelated, but not all-encompassing of each other (Janke et al., 2016). Despite much progress in developing leadership competencies for pharmacy education, variability in implementation exists as well as lack of clear expectations for degree of demonstration of knowledge, skills, and abilities (KSAs) and the means for assessing and measuring KSAs (Reed et al., 2019).

Medicine, nursing, and pharmacy literature report the presence of leadership content in entry-level curriculum. While the depth and breadth of leadership content and teaching strategies employed may vary considerably, all agree that leadership development should begin early in educational preparation, with longitudinal content delivery preferred, and is required for addressing patient outcomes and driving change within the healthcare system (LoVasco et al., 2016).

Leadership in Physical Therapy: Higher Education

A national study of physical therapist academic and clinical education was published in 2017 using a multiple case study qualitative design (Jensen, Nordstrom, et al.). The study, from idea conception to publication, spanned eight years. The methodology applied elements of previous Carnegie-style investigations used to assess excellence and innovation in education of other professional programs, to physical therapist education. In part 2 of the study, the same researchers made recommendations, based on their conceived conceptual framework, which provide a transformative prescription for physical therapist education (Jensen, Hack et al., 2017). The action items and recommendations primarily focus on developing leaders at the faculty, program director, and institutional levels with little direct emphasis on entry-level physical therapist preparation (Jensen, Hack et al., 2017). In 2020, Jette and colleagues found parallels between Jensen et al.'s Model of Excellence in Physical Therapist Education and the Engagement Theory of Program Quality, the latter of which has been validated in other doctoral degree programs. Based on the Engagement Theory framework and in alignment with the model, a survey and portal were designed by ACAPT to provide a tool for participating DPT programs to discover and benchmark standards of excellence in physical therapist education (ACAPT, 2021a). From a leadership perspective, the focus has primarily been on the interaction between the program leadership and that of internal and external stakeholders. Despite this emphasis, the authors assert that leadership development initiatives must “begin in professional education and continue across a professional’s career” (Jensen, Hack, et al., 2017). However, the community of physical therapy educators have not historically participated in standardized processes to measure quality and excellence in a collective manner (Jette et al., 2020). This presents a

challenge for sharing instructional strategies, examining assessment measures, and developing strong, effective leadership curriculum for entry-level students.

Leadership in Physical Therapy: Program Curriculum

Updated CAPTE (2016) standards require that physical therapist education programs provide opportunities for students to engage in leadership, volunteerism, and advocacy (7D13). Beyond a single, explicit required element, other requisites involve effective communication with a variety of stakeholders (7D7) and professional advocacy through engagement in political and legislative processes (7D14). Arguably, all three of these essential elements are targeting skills and suggesting experiences which serve to facilitate leadership development in various realms. Despite the inclusion of leadership in the accreditation standards, the integration into physical therapist curricula remains inconsistent (Tschoepe et al., 2021). A couple of examples exist in the literature which describe the adoption and integration of leadership content into individual physical therapist education programs in the U.S. and beyond. These programs act as case reports, low-level evidence of efficacy, and inspiration for present and future leadership curricular endeavors.

Dean & Duncan (2016) present a Doctor of Physical Therapy program outline that is delivered over six semesters and aimed at not only developing exemplary clinicians, but also creating innovative leaders who understand the challenges of healthcare and are equipped to transform policy and practice. Driven by the important role of physical therapists in chronic disease management and improving public health, the faculty at Macquarie University in Australia describe their stepwise, connected curriculum that utilizes various active learning opportunities and teaching strategies: debate, reflections, networking, presentations by renowned researchers and clinical specialists, policy development and advocacy activities (Dean &

Duncan, 2016). Similarly, Regis University integrated a leadership thread throughout their curriculum to grow transformational leaders during entry-level physical therapist education (Eigsti & Davis, 2018). Over the three-year period, students engage in a progressive curriculum targeted at leading self, others, teams, and ultimately broader change. Pre- and post-assessments, using a well-researched, reliable, and valid tool, found that DPT students report stronger relationship-oriented leadership behaviors in the domains of self and others. On the other hand, traits that support inspiring a shared vision and challenging processes which are required as change agents at the community, organizational, and systems level are less developed. The success of Regis' curricular thread on student leadership development encourages accredited physical therapist education programs to incorporate related content into didactic and clinical education. Consistent with the assertions of other investigators, intentional leadership development in physical therapy curricula is necessary to promote behavior change and facilitate growth of emerging leaders (Eigsti & Davis, 2018; Larin et al., 2011). Eigsti & Davis' (2018) leadership curricular thread utilized several instructional strategies to develop entry-level physical therapist leaders: self-assessment, peer and faculty assessment, personal leadership development plans, written case studies, simulation, motivational interviewing, service-learning, group/team projects, reflections, leader interviews, and oral presentation. Active and highly experiential learning strategies were primarily represented in these few examples of entry-level leadership development courses that we find in physical therapy literature. These findings are encouraging based on the previous work by Jenkins (2012 & 2018) which places great value and efficacy on the use of such strategies.

Defining leadership and the methods for modeling and teaching leadership pose great challenges for physical therapy faculty who are developing leadership curriculum (McGowan &

Stokes, 2017). Beyond limited published examples and broad CAPTE requirements, a leadership competency framework that can assist in guiding leadership curriculum in entry-level education has been proposed. In March 2021, Tschoepe et al. published the LCF-PT that stratified 57 leadership competencies for physical therapists into three tiers (self, others, community/organizations) and 11 clusters. These competencies were derived from a previous Delphi study (Sebelski, Green-Wilson, et al., 2020) that differentiated between leadership competencies expected of entry-level/novice clinicians (<1-year post-licensure) and those with more clinical experience (>1-year post-licensure). While the LCF-PT is in the early stages of validation and will likely see improvements, the tool begins to lay the foundation for standardizing essential leadership content in physical therapist education. Leadership is a non-technical skill that intersects various levels and environments of physical therapy practice presenting challenges for teaching and assessment. Much like medicine, nursing and pharmacy education, physical therapist education is moving towards competency-based education (CBE) frameworks and the incorporation of entrustable professional activities (EPAs). Within a CBE structure, competency models are essential to map a spectrum of specific knowledge, skills, and abilities to broader domains of competency and EPAs that serve to define the actual work of the profession (Englander et al., 2017). Researchers propose that professional core documents and physical therapist education must begin to incorporate and prioritize leadership as an essential domain of competency in order to fulfill our professional identity and meet the APTA's vision of transforming society (2018).

CHAPTER 3

RESEARCH DESIGN & METHODOLOGY

While leadership skills are widely accepted requisites for healthcare professionals, the translation to entry-level physical therapy curricular preparation lags. Few resources are available for how to effectively incorporate leadership development content into physical therapist education. This chapter describes the research design and methodology employed in this quantitative investigation designed to examine leadership pedagogies and assessment approaches in doctoral-level physical therapist education and their relationship to program characteristics. The research questions, sample population, survey instruments, and plan for data collection and analysis are explained.

Research Design

This study used a quantitative, descriptive, non-experimental design to gather data and investigate potential associations between variables. Quantitative research is an approach to inquiry that aims to describe trends and explore relationships between phenomena (Creswell, 2003). Surveys are often utilized for the purpose of descriptive research in non-experimental studies. Surveys provide an opportunity for investigators to collect a wide range of data from a population of interest to better understand a broad concept (McMillan, 2016).

For this study, an online survey was preferred over interviews in order to capture a broader sample of the population of accredited physical therapist education programs. The survey method also allowed for enhanced efficiency and conservation of resources. The survey utilized in this investigation was administered online via Qualtrics software system (Provo, UT). The software was free to the investigator and participants, with ease of use and response storage, providing additional benefits. The survey time was limited to approximately 15 minutes to

encourage participation and completion while reducing response fatigue. Skip logic was employed when appropriate to limit items; multiple responses functionality was engaged to provide breadth; and open text options were provided, yet limited in use, which allowed for saturation of responses without significantly increasing survey completion time.

Research Questions

Entry-level physical therapist education primarily focuses on preparing clinicians who are proficient in physical therapy practice. The overarching question remains: how are physical therapists education programs equipping students to lead in the dynamic healthcare environment that demands leadership skills? For this study, the primary research questions were:

1. What signature pedagogy is utilized by accredited physical therapist education programs to prepare graduates to lead?
2. At what level of assessment (self, others, community/organizations) are Doctor of Physical Therapy programs measuring student physical therapists' leadership competency?

Instrumentation methods will be discussed in the next section culminating with a matrix linking research questions to survey items and data analysis plan.

Participants (or Sample Population)

Two hundred forty-seven institutions comprising 264 CAPTE accredited programs were identified on the CAPTE portal. Filters were used to determine participant eligibility. The sample was drawn from an eligible population (N=242) of CAPTE accredited physical therapist education programs in the United States who deliver most of their curriculum in a traditional learning format. The researcher's program of employment as well as survey pilot institutions and duplicate programs were eliminated from inclusion resulting in the final population number. The

participants were program directors, faculty or hold an administrative role within the respective program and have some knowledge of the leadership content within the program's curriculum. Full online or majority online programs, PT to PTA bridge programs, and unaccredited and developing programs were excluded from participation.

Faculty and program participants were recruited through the CAPTE directory of accredited physical therapy programs on the accreditation website (CAPTE, n.d.). Program chairs were recruited through email and asked to complete a survey or share the survey with a faculty designee most familiar with the leadership content within the curriculum. The faculty were asked to complete the survey (Appendix B), which included demographic information as well as items addressing instructional and assessment strategies.

Instrumentation

The Faculty/Program Survey (Appendix B) consisted of seven demographic questions describing the name, size, and location of the program, total credit hours, and type of curriculum. Four additional questions addressed curricular and program emphasis on leadership and leadership framework adopted by the program. The second block of questions used a sliding scale response technique to determine the frequency of defined instructional strategies implemented by the program to deliver leadership content. Each instructional strategy was anchored to a definition as described by Jenkins (2018) with additional definitions for physical therapy specific examples provided. Assessment methods used to measure leadership competency in physical therapist educational programs, each with explicit definitions, were similarly presented with a sliding scale option. The investigator was graciously granted permission to copy and use the definitions for the instructional strategies and assessment methods (Appendix C). Modification and additional descriptors were provided as needed to

capture physical therapy-specific curriculum. Beyond instructional strategies and assessment methods, survey items address extra-curricular and co-curricular leadership opportunities as well as objectives tied to pro bono or program clinic exposure, full-time clinical education experiences, and intra- and inter-professional events that are characteristic of physical therapist academic preparation. The survey concludes with two questions regarding additional post-graduate learning prospects offered by the program and methods for tracking leadership pursuits of program alumni.

Table 1

Methods & Data Analysis Plan Linked to Methodology

Research Question	Methods	Data Analysis
<u>Research Question 1:</u> What signature pedagogy is utilized by accredited physical therapist education programs to prepare graduates to lead?	<u>Faculty/Program Survey:</u> The Instructional Strategies block (Question 12) of questions addressed 25 instructional strategies and provided anchoring definitions to reduce ambiguity and standardize interpretation. The follow-up question (#13) served to saturate responses.	Data was analyzed individually and categorically. <u>Categories:</u> Discussion-based pedagogies Analysis-based pedagogies Highly experiential activities <u>Descriptive Statistics:</u> Mean Standard Deviation Frequency Percentage
<u>Research Question 2:</u> At what level of assessment (self, others, community) are Doctor of Physical Therapy programs measuring student physical therapists' leadership competency?	<u>Faculty/Program Survey:</u> The Assessment Methods block (Question 14) of questions addressed 18 instructional strategies and provided anchoring definitions to reduce ambiguity and standardize interpretation. The follow-up question (#15) served to saturate responses.	Data was analyzed individually and categorically. <u>Categories:</u> Self Others Community/Organizations <u>Descriptive Statistics:</u> Mean Standard Deviation Frequency Percentage

Pilot Study/Validation

Development of the faculty/program survey included review by two experienced leadership studies academicians and a physical therapy program director. Modifications were completed to refine the survey questions and flow, based on the expert review. The newly revised survey was piloted by a single program director and an additional faculty member, from a separate institution, with over 25 years of experience in physical therapy professional practice education. Suggested survey modifications from the faculty pilot participants were considered and incorporated into the design. The updated survey was resubmitted to the IRB for approval. Once the final version of the survey was approved, the survey was widely disseminated to CAPTE accredited program directors who met inclusion criteria.

Procedures for Data Collection

Upon approval from the Marshall University Institutional Review Board (IRB), the investigator obtained current email addresses for program chairs at accredited physical therapists education programs via the CAPTE website and data collection began. An electronic solicitation letter was sent to the program chairs that outlined the study and instructed the chair to forward the letter to the primary faculty member responsible for teaching and coordinating the leadership content. The email invitation explicated the importance of the study to advancing the body of knowledge surrounding leadership development in physical therapist education programs. In order to adequately address ethical considerations involving human subjects a standard informed consent statement (Appendix D) consisting of study purpose, population being investigated, reason for participant selection, risks and benefits of participation, instructions regarding right to withdraw consent, safeguards for guaranteeing anonymity of responses, and a link to access a web host site (Qualtrics) that contained the survey. Consent was assumed upon survey initiation

and completion. For undeliverable email responses and non-specific email addresses, the associated programs' websites were accessed to identify a valid email address for the current program director and a follow up email request was provided. Two to three weeks after the initial survey distribution, a follow-up email, with a survey link, was sent to programs that had not yet responded. Qualtrics distributed and collected the survey responses.

Faculty/program survey questions focused on a comprehensive examination of the pedagogical strategies employed by physical therapist education programs to teach leadership concepts as well as techniques utilized to impart and assess leadership skill development. Previously published and newly developed definitions for each of the pedagogical and assessment strategies were provided in the survey to reduce ambiguity and an "other" option with a free text box was provided to capture inclusivity (Jenkins, 2018). Basic faculty demographic information, as well as the leadership framework providing the foundation for content delivery by the program, was ascertained.

Data Analysis

Survey data were exported to Excel (2016) and analyzed. Descriptive statistics were performed to measure the mean, standard deviation, and confidence intervals of the survey item responses. Frequency and percentage of responses related to instructional and assessment strategies were calculated. Chi-square analysis was employed for dichotomous variables. Statistical significance was set at $p > 0.05$.

Chapter Summary

Surveying program faculty proved to be the most efficient means of collecting data from a large sample of programs with demanding and conflicting schedules. The findings from this study are expected to add to the body of knowledge in physical therapist education leadership

development and may be used to guide curricular decisions and adoption of leadership initiatives.

The goal of this chapter was to describe the study methodology used to answer the research questions. A discussion of the research design, participants, survey instruments, data collection procedures, and data analysis outlined the study and how the study was conducted. Chapter 4 provides the results of the study based on adherence to the aforementioned methodology.

CHAPTER 4

RESULTS

The purpose of this study was to examine the teaching and assessment methods currently used for leadership development in accredited physical therapist entry-level education programs and the most frequent means for doing so. In the spring of 2022, the survey instrument was sent electronically to all program directors of accredited Doctor of Physical Therapy programs in the United States (N=242) that met inclusion criteria. The survey remained open for a total of seven weeks. Following the first email requesting participation in the study, 19 responses were recorded for an 8% response rate. A two-week reminder was sent to the initial group. Simultaneously, a review of the CAPTE email addresses revealed 59 non-specific usernames. Specific program directors' email addresses were determined following a review of associated program websites and initial emails were sent to those program directors at the two-week mark. This group of program directors also received a two-week participation reminder. The primary researcher also directly and indirectly reached out to a personal network of peers to bolster survey completion and participation. With these combined efforts, 38 surveys were attempted with an overall response rate of 16% (38/242).

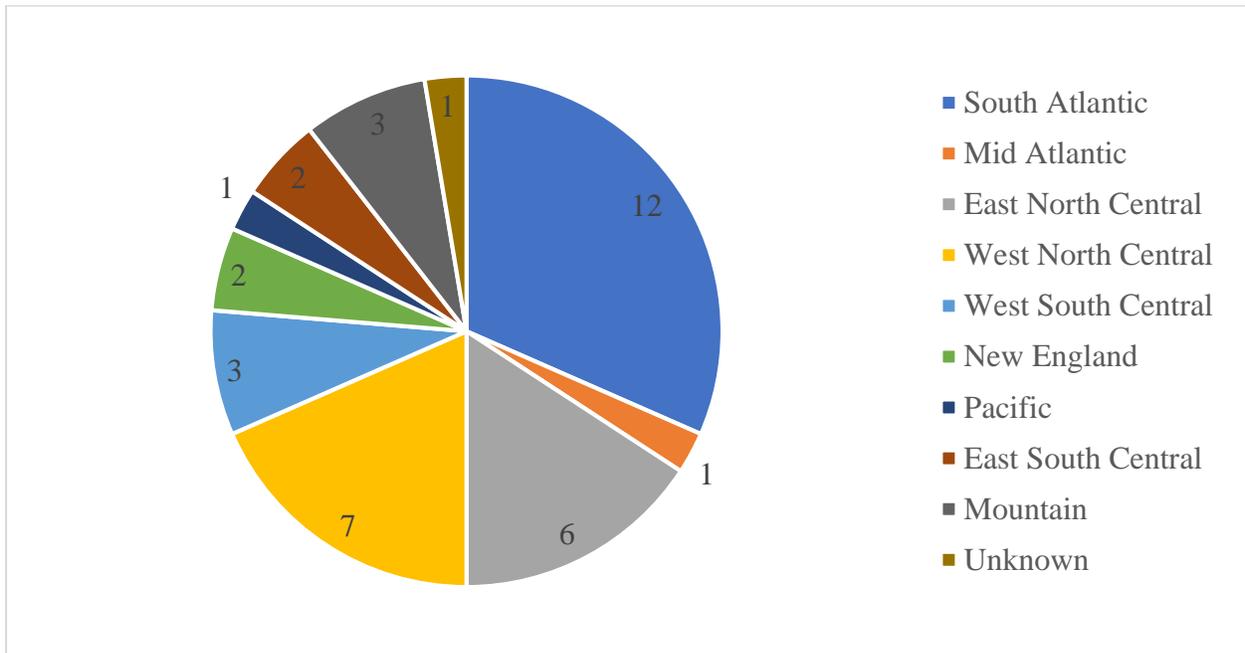
Sample Demographic Information

Fifty program directors accessed the survey. Of those, 38 completed all or portions of the survey. The respondents were drawn from all CAPTE geographic regions, based on 2020 aggregate data (CAPTE, 2020), with the South Atlantic (n=12, 32.4%), West North Central (n=7, 18.9%), and East North Central (n=6, 16.2%) regions disproportionately represented. One participant program did not disclose location or program name (See Figure 1). Comparatively,

CAPTE regional distribution of programs is 20.4% in the South Atlantic states, 10% in the West North Central region, and 14.1% in the East North Central designation.

Figure 1

Survey Respondents by CAPTE Geographical Region

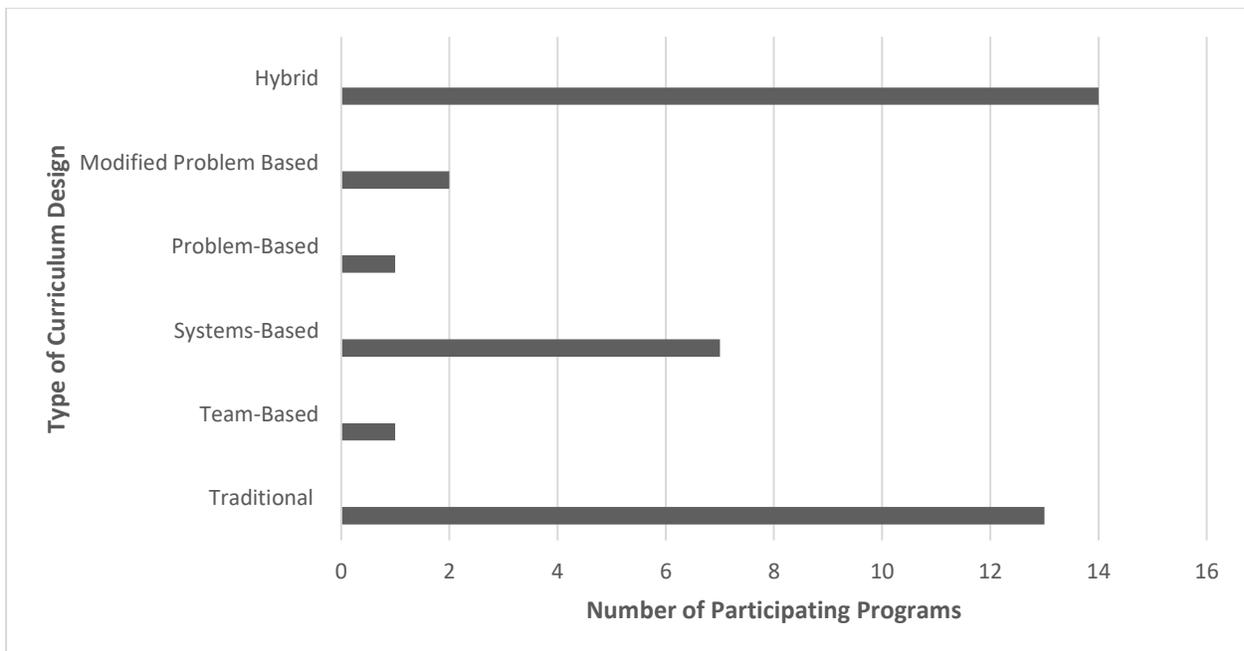


Physical therapy programs within private institutions (60.5%) responded to the survey and represent a slightly larger demographic as compared to the national average of CAPTE accredited programs (54.9%). Public institutions with associated physical therapy programs responded to the survey at a rate of 39.5%. Most of the sample programs graduate one cohort per year (92.1%) with an average cohort/year size for the entire sample (n=39, one program graduates 60 traditional and 90 hybrid cohorts each year) of 85 student physical therapists. The number of students per cohort demonstrated a wide range from 28 to 108. Among the sample, post-professional credit hours required to obtain the Doctor of Physical Therapy degree range from 99 to 172 with a mean of 116.2 credit hours, which is comparable to the national average

(115 credit hours) for accredited programs. Twenty-three of thirty-seven (62.2%) respondents exceeded the CAPTE national average in credit hours for the degree program. One survey item addressed the basis for the program’s curricular approach (See Figure 2). Fourteen programs (36.9%) describe their curriculum as a hybrid, which was interpreted as a blend of approaches. Traditional curriculum is provided by 34.2% of programs while seven programs (18.4%) apply a systems-based approach, two programs use a modified problem-based learning curriculum, one program uses a pure problem-based learning curriculum, and another single participant program uses a team-based learning model.

Figure 2

Curriculum Design in Participating Programs

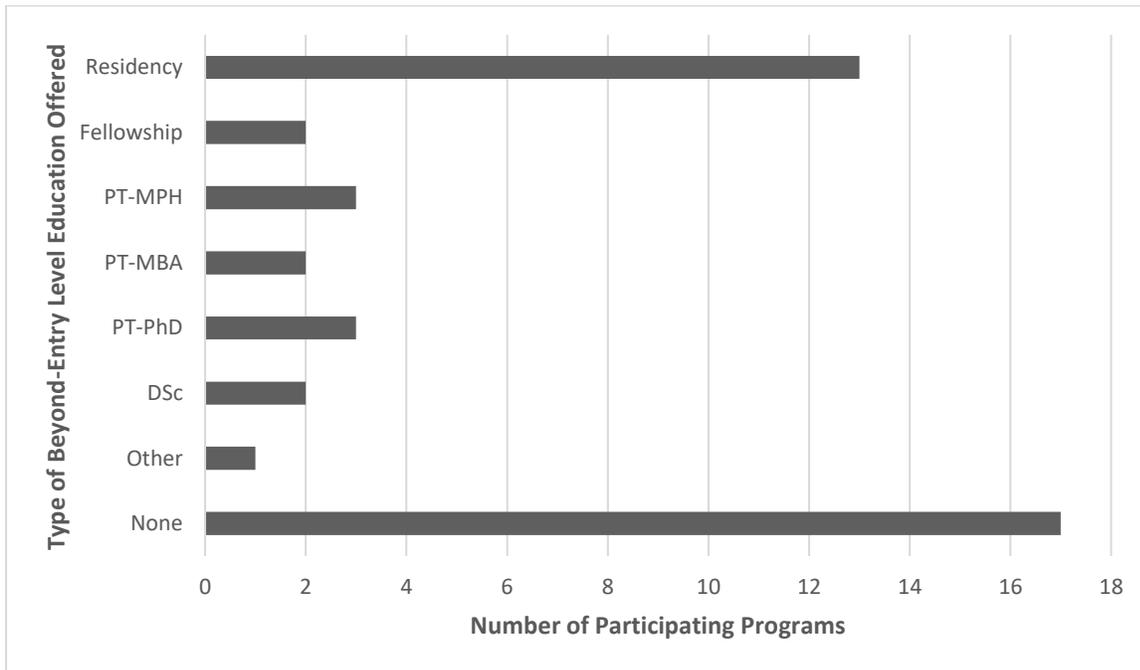


Seventeen (38.6%) of the responding programs do not offer educational and specialization opportunities beyond the entry-level degree program. As shown in Figure 3, the remaining programs offer one or more of the following additional learning opportunities:

residency (n=13), fellowship (n=3), PT-PhD (n=3), PT-MBA (n=2), PT-MPH (n=3), Doctor of Science (DSc) (n=2), and Master of Management in Clinical Informatics (n=1).

Figure 3

Beyond Entry-Level Educational and Degree Programs Offered by Participating Programs



Note. PT-MPH is a dual degree consisting of both the Doctor of Physical Therapy and Master of Public Health (MPH) degrees. PT-MBA is a dual degree consisting of both the Doctor of Physical Therapy and Master of Business Administration (MBA) degrees. PT-PhD is a dual degree or post-professional degree consisting of both the Doctor of Physical Therapy and Doctor of Philosophy (PhD) degrees. DSc, or Doctor of Science, is a postdoctoral degree program.

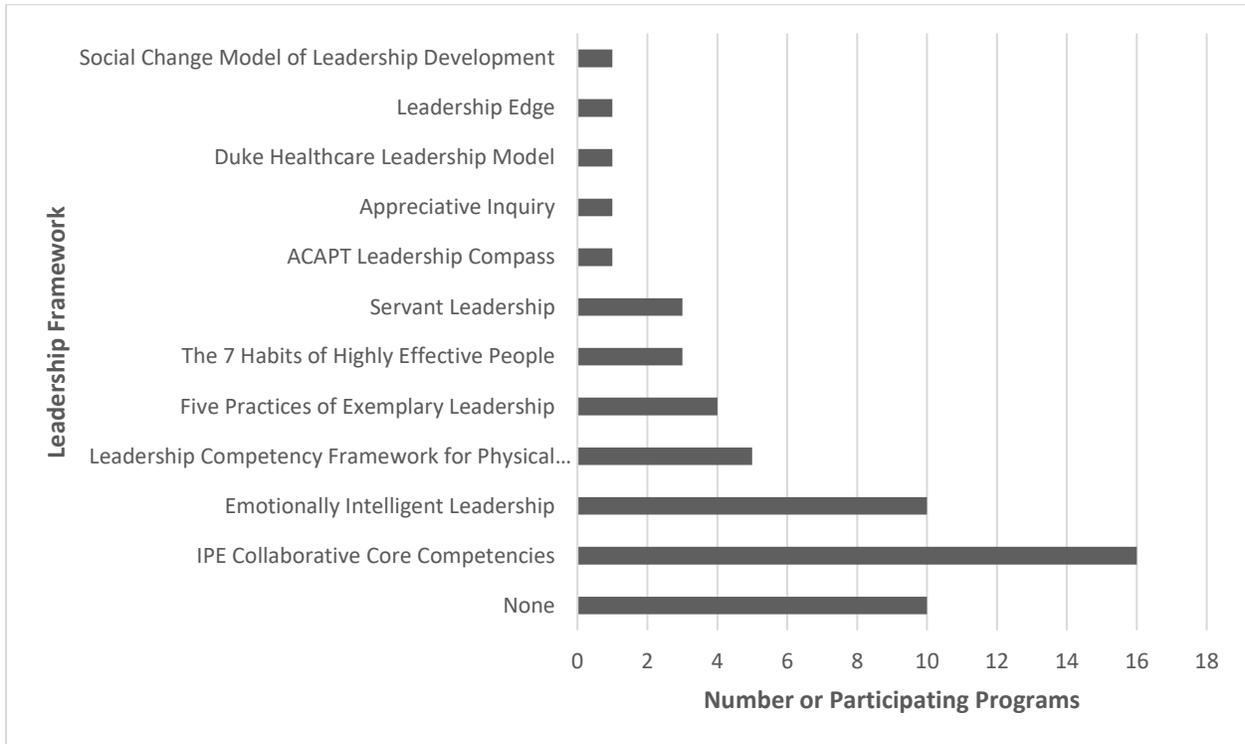
Leadership Related Program Characteristics

The majority (92.1%) of programs reported that leadership development is included in physical therapist education core curriculum. Program curricular design regarding incorporation of leadership content varied among participants with several encompassing multiple delivery systems. Over half (52.2%) of programs identify a leadership curricular thread that is woven

through several core courses. The second most common response (30.4%) revealed that leadership content is often part of a required professional practice course. Eight programs (17.4%) reported a stand-alone leadership course within their curriculum with five programs requiring the course, two programs offering the course as an elective, and one program that did not specify. Several programs report the use of more than one leadership framework in their curriculum (See Figure 4). On the other hand, 10 programs (27%) do not use a particular leadership schema. A variety of leadership frameworks are employed by respondents during instruction: Interprofessional Education Collaborative Core Competencies (n=16, 28.6%), Emotionally Intelligent Leadership (n=10, 17.9%), Leadership Competency Framework for Physical Therapists (n=5, 8.9%), The Five Practices of Exemplary Leadership (n=4, 7.1%), Servant Leadership (n=3, 5.4%), and The 7 Habits of Highly Effective People (n=3, 5.4%). Five remaining leadership frameworks each had 1 response (1.8%): ACAPT Leadership Compass, Appreciative Inquiry, Duke Healthcare Leadership Model, Leadership Edge, and Social Change Model of Leadership Development.

Figure 4

Leadership Frameworks Utilized by Participating Programs



Program respondents were asked to rate the importance of leadership competency being an established entry-level expectation for student physical therapists. On average, respondents rated entry-level leadership competency at 77.0% with 100% being the highest level of importance, 95% CI [70.1, 83.95].

Curricular learning objectives addressing leadership development were evident in most programs during intra- and/or inter-professional (IPE) events, clinical education experiences, and faculty supervised student participation in program-affiliated clinics. With thirty-four programs responding, twenty-seven (79.4%) have embedded IPE leadership objectives with clinical education leadership-related objectives present in 18 programs (52.9%). Twenty-three programs reported having an associated pro bono clinic or program-specific clinic, twelve (52.2%) of which have leadership learning objectives. With 36 respondents, twelve participant programs

(32%) reported one or more core faculty members who have completed or who are pursuing ELI fellowship training. A Chi-Square Test of Independence was performed to assess the relationship between the presence of program faculty with ELI fellowship training and the incorporation of leadership learning objectives during IPE, clinical education, or program clinical practice scenarios. There was not a significant relationship between the two variables, $X^2(1, 34) = 0.68$, $p=0.05$; $X^2(1,34) = 0.80$, $p=0.05$; $X^2(1,23) = 0.22$, $p=0.05$, respectively.

Research Question One

Answering research question one [What signature pedagogy is utilized by accredited physical therapist education programs to prepare graduates to lead?] involved calculating frequency and percentage of responses for each of the 25 instructional strategies included in the survey. Descriptive statistics were performed to analyze the means, standard deviations, and confidence intervals of item responses. As described by Jenkins (2018), instructional strategies were grouped by category (discussion, analysis, and experiential) and further descriptive analysis was performed.

Table 2*Instructional Strategies with Descriptions, Organized by Category*

Instructional Strategy	Description
Category: Discussion Based	
Class Discussion	Instructor facilitates sustained conversation and/or question and answer segment with the entire class.
Small Group Discussions	Students take part in small group discussions on course topics.
Guest Speaker	Students listen to a guest speaker/lecturer discuss their personal leadership experiences.
Interactive Lecture/ Discussion	Instructor presents information in 10-20 minute time blocks with period of structured interaction/discussion in-between mini-lectures.
Lecture	Students listen to instructor presentations lasting most of the class session.
Category: Analysis Based	
Group Projects	Assignments in which students work together in small groups to accomplish a common goal.
Business Plan Development	Students develop a formal, written start-up plan for a business containing mission, vision, strategic plan, goals, and financial forecasts.
Self-Assessments & Instruments	Students complete questionnaires or other instruments designed to enhance their self-awareness in a variety of areas (e.g., learning style, personality type, leadership style).
Priming Activities	An assignment completed in preparation for an upcoming topic, event or activity.
Case Studies	Students examine written or oral stories or vignettes that highlight a case of effective or ineffective leadership.
In-Class Short Writing	Students complete ungraded writing activities such as reflective journals or responses to instructor prompts designed to enhance learning of course content.
Problem-Based Learning	Students learn about leadership through the experience of problem solving in specific situations.
Story or Storytelling	Students listen to a story highlighting some aspect of leadership; often given by an individual with a novel experience.

Instructional Strategy	Description
Category: Experiential Based	
Service Learning	Students participate in a service learning or philanthropic project.
Simulation	Students engage in an activity that simulates complex problems or issues and requires decision-making.
Inter-professional events	Occasions when students from two or more healthcare professions interact and learn together with the object of cultivating collaborative practice for providing patient-centered care.
Teambuilding	Students engage in group activities that emphasize working together in a spirit of cooperation (e.g., setting team goals/priorities, delegating work, examining group relationships/dynamics).
Icebreakers	Students engage in a series of relationship-building activities to get to know one another.
Clinical Education Experiences	A formal supervised experiential learning, focused on development and application of patient/client-centered skills, professional behaviors and <i>containing an explicit component of leadership development.</i>
Intra-professional events	Organized events in which students from different disciplines within the same profession (PT/PTA) learn from, about and with, each other.
Role Play Activities	Students engage in an activity where they act out a set of defined role behaviors or positions with a view to acquire desired experiences.
Debates	Student teams argue for or against a position using course concepts, evidence, logic.
Media Clips	Students learn about leadership theory/topics through film, television, or other media clips (e.g., YouTube, Hulu, TED talks).
Student Peer Teaching	Students, in pairs or groups, teach designated course content or skills to fellow students.
Games	Students engage in interactions, in a prescribed setting, and are constrained by a set of rules and procedures. (e.g., Jeopardy, Who Wants to be a Millionaire, Family Feud)

Note. Adapted from *Comparing instructional and assessment strategy use in graduate- and undergraduate-level leadership studies: A global study.* (p. 79), by D.M. Jenkins, 2018, *Journal of Leadership Education*, 17(1).

Overall, the programs reported using group projects (M=85.6, SD=25.8), business plan development (M=82.8, SD=31.7), service learning (M=82.7, SD=27.4), class discussion (M=81.7, SD=24.4), and small group discussion (M=79.3, SD 29.5) most frequently. This demonstrates a combination of frequently used instructional strategies that include analysis, experiential, and discussion-based approaches. The most infrequently used strategies also represented all three categories of instruction: story or storytelling (M=41.1, SD=31.6), games (M=54.9, SD=34.0), student peer teaching (M=55.0, SD=34.0), media clips (M=55.6, SD=31.98), lecture (M=57.2, SD=32.3). Table 3 shows the complete rank ordered list of instructional strategies and their descriptive data.

Table 3

Instructional Strategies & Mean Frequency of Use with Confidence Intervals and Standard Deviations

Instructional Strategy	Mean	SD	Upper CI (95%)	Lower CI (95%)	Count
Group Projects	85.6	25.8	94.2	77.1	35
Business Plan Development	82.8	31.7	93.6	72.0	33
Service Learning	82.7	27.4	92.2	73.2	32
Class Discussion	81.7	24.4	89.9	73.5	34
Small Group Discussions	79.3	29.5	89.3	69.2	33
Self-Assessments & Instruments	76.5	30.1	87.1	65.9	31
Simulation	73.3	29.5	84.5	62.2	27
Guest Speaker	72.5	35.9	84.5	60.5	33
Inter-professional events	72.1	32.3	83.1	61.1	33
Interactive Lecture/Discussion	70.4	29.6	80.8	60.0	31
Teambuilding	68.7	33.2	80.6	56.8	30
Priming activities	68.6	30.7	79.7	57.4	29
In-Class Short Writing	65.8	32.6	77.6	54.0	29
Icebreakers	64.7	36.8	77.9	51.6	30
Clinical Education Experiences	64.6	32.7	77.0	52.3	27
Problem-based Learning	64.5	30.6	76.3	52.8	26
Intra-professional events	58.1	39.2	72.6	43.6	28
Role Play Activities	58.3	34.9	71.5	45.2	27
Debates	57.7	33.3	70.3	45.2	27
Lecture	57.2	32.3	68.0	46.3	34
Media Clips	55.6	32.0	67.7	43.6	27
Student Peer Teaching	55.0	34.0	68.9	41.1	23
Games	54.9	34.0	68.8	41.0	23
Story or Storytelling	41.1	31.6	54.3	27.9	22

Note. Of the 38 survey participants, only n=35 progressed through the survey to the questions represented in Table 3.

When reviewing the results based on instructional strategy category, discussion-based pedagogies (M=72.2, SD=9.6) were most frequently used, followed by analytical strategies (M=69.1, SD=13.8), and least frequently, experiential strategies (M=63.8, SD=8.9). All programs (n=35) who progressed through the survey to questions addressing instructional strategies identified discussion and analysis-based teaching methods used to develop student physical therapist leaders. On the other hand, one participating program does not use experiential (n=34) teaching means within their curriculum for growing student leadership capacity.

Respondents reported various other instructional strategies used in their program that were either incompletely or inadequately represented in the list of 25 instructional strategies. These teaching strategies included peer teaching/coaching of underclass students and formal faculty mentoring of students in leadership positions. Others further addressed experiential and analysis-based teaching strategies. A few of the participants commented on specific learning opportunities provided in their curriculum to develop individual and group leadership potential and are reflected in the excerpts below.

“difficult scenarios role playing”

“collaborative leadership development activities with healthcare partners to identify and propose solutions to authentic clinical and environmental challenges”

“individual project, literature review and presentation in the form of annotated bibliography on two leadership subtopics, lead a small group discussion on two leadership subtopics, develop a graphic depiction of a leadership model based on one’s

own function in a clinical setting, write a paper based on observation of a clinical leader in PT.”

Extra-curricular and co-curricular leadership development opportunities were evident among participant programs. The most common responses (94.1%, n=32) included student participation (beyond membership) in the national association and the state chapter as well as networking events with other physical therapy professionals. Mentoring of cohort/class officers (91.2%, n=31), community service initiatives (91.2%, n=31), and tutoring of junior student physical therapists (85.3%, n=29) are also common extra-curricular and co-curricular opportunities afforded students from the sample programs. The least frequent responses represented two areas: state or regional student leadership development program (23.5%, n=8) and graduate assistantship (44.1%, n=15). Beyond the available options, participants reported multiple additional leadership development opportunities that programs afford their students. Four programs (11.8%) commented on pro-bono clinic participation through early, integrated clinical experiences as well as student board participation. Two programs (5.9%) mentioned service-learning events. One program (2.9%) each described “community advocacy” efforts, “mentoring of high school and undergraduate students, a university-level leadership development program, and “too many to list.”

Research Question Two

Answering research question two [At what level of assessment (self, others, community/organizations) are Doctor of Physical Therapy programs measuring student physical therapists’ leadership competency?] involved calculating frequency and percentage of responses for each of the 18 assessment methods included in the survey. Descriptive statistics were performed to analyze the mean and confidence intervals of item responses. Assessment methods

were grouped by category, using the 3 tiers (self, others, community/organizations) of the LCF-PT described by Tschoepe et al. (2021) as a basis for decision-making (See Table 4). Following categorization, further descriptive analyses were performed.

Table 4

Assessment Methods with Descriptions, Organized by Tiers

Assessment Method	Description
Tier: Self	
Portfolio or evidence collection	Students document their own learning through the creation of a course portfolio.
Individual Leadership Development Plans	Students develop specific goals and vision statements for individual leadership development.
Major Writing Project/Term Paper:	Students write a significant paper exploring course content or research (such as a literature review) as a major course assignment.
Self-evaluation	Students respond in writing to criteria set for evaluating their learning.
Reflective Journals	Students develop written reflections on their experiences or understandings of lessons learned about course content.
Quizzes	Students complete short, graded quizzes intended to assess subject matter mastery.
Exams (Written)	Students complete tests or exams that last the majority of the class period intended to assess subject matter mastery and are provided in a written format.
Class Participation/Attendance	Students are given points for active participation in course activities.
Short Papers	Students author one or more short papers (ten pages or less in length) exploring.
Exams (Oral)	Students complete tests or exams that last the majority of the class period intended to assess subject matter mastery and are provided in an oral format.
Tier: Others	
Group Projects /Presentations	Students work on a prescribed project or presentation in a small group.

Assessment Method	Description
Peer Assessment & Feedback	Structured opportunities for students to critique and give feedback to each other based on their work and performance.
Leadership Tool/Assessment Observer	Student and observer (faculty, advisor, mentor, peer) completes leadership inventory and compares observations and ratings. Together develop a plan for growth.
Read and Respond	Students are graded on their responses to questions generated by the instructor or from the end of the text chapter for the purpose of allowing students to explore specific ideas or statements in depth and breadth.
Video Creation	Students create short video presentations to be shown in class.
Tier: Community/Organizations	
Skill Demonstration	Students physically represent learning through problem solving ability in relevant contexts.
Observation/Interview of a Leader	Students observe or interview of an individual leading others effectively or ineffectively and report their findings to the instructor/class.
Research Projects/Presentations	Students actively research a leadership theory or topic and present findings in oral or written format.

Note. Adapted from *Comparing instructional and assessment strategy use in graduate- and undergraduate-level leadership studies: A global study.* (p. 80-81), by D.M. Jenkins, 2018, *Journal of Leadership Education*, 17(1). Author categorized assessment strategies into tiers based on those described in *The need for a leadership competency framework for physical therapists: A perspective in action.* (p. 51-52), by B. Tschoepe., D. Clark, S. Zeigler, J. Green-Wilson, & C.A. Sebeliski, 2021, *Journal of Physical Therapy Education*, 35(1).

Overall, the most frequent assessment methods reportedly used by participating programs were group projects/presentations (M=78.8, SD=25.5), portfolio or evidence collection (M=78.6, SD=31.6), individual leadership development plan (M=71.6, SD=34.6), and major writing project/term paper (M=70.4, SD=30.9). The most frequently used assessment methods embody

“self” leadership with the exception of group projects which represent interaction with and leading “others.” The least frequently used assessment methods are categorized in “others” tier as well and include video creation (M=35.8, SD=27.4) and read and respond (M=47.0, SD=33.8). The complete list of descriptive findings for assessment methods is organized in Table 5 below.

Table 5

Assessment Methods & Mean Frequency of Use with Confidence Intervals and Standard Deviations

Assessment Method	Mean	SD	Upper CI (95%)	Lower CI (95%)	Count
Group Projects/ Presentation	78.8	25.5	87.5	70.1	33
Portfolio or Evidence Collection	78.6	31.6	93.2	64.0	18
Individual Leadership Development Plans	71.6	34.6	85.7	57.4	29
Major Writing Project/ Term Paper	70.4	30.9	83.1	57.8	23
Self-Evaluation	70.1	33.7	83.6	56.6	24
Reflective Journals	69.7	34.0	82.0	57.3	29
Skill Demonstration	69.3	34.3	84.0	54.7	21
Quizzes	69.0	32.6	82.9	55.1	21
Peer Assessment & Feedback	68.9	31.5	81.0	56.8	26
Leadership Tool/Assessment Observer	64.8	32.2	78.9	50.6	20
Exams (Written)	64.6	33.7	77.3	51.9	27
Class Participation/ Attendance	62.0	31.3	73.6	50.4	28
Short Papers	59.1	32.3	74.9	43.3	16
Observation/ Interview of a Leader	56.7	35.3	74.0	39.4	16
Exams (Oral)	53.2	33.2	67.4	39.0	21
Research Projects/ Presentations	52.9	37.0	71.1	34.8	16
Read & Respond	47.0	33.8	63.6	30.4	16
Video Creation	35.8	27.4	49.2	22.3	16

Note. Of the 38 survey participants, only n=34 progressed through the survey to the questions represented in Table 5.

When analyzing results based on assessment method tier, 10 of the 18 (55.6%) methods were thought to primarily require “self” leadership, five (27.8%) methods were judged to extend

to leading “others,” and three (16.7%) methods were considered to influence leadership in the “community” realm. All programs (n=34) who progressed through the survey to questions addressing assessment methods identified ways of assessing student leadership development with regard to “self” and “others.” On the other hand, only 24 (70.6%) programs identified means within their curriculum for evaluating student leadership capacity at the community or organizational level. Generally, assessment methods addressing “self” were the most frequently utilized (M=66.8, SD=7.2). Assessment methods within the “Others” and “Community/Organizations” tiers were nearly equally represented (M=59.0, SD=17.4; M=59.7, SD=8.6), but less frequently used.

A single participant program commented on one additional assessment method: “students investigate literature regarding leadership in [situations requiring] conflict management and resolution and complete a quiz in this topic area.”

Measuring Leadership among Graduates

Thirty-three participants provided information regarding their program’s efforts to measure leadership endeavors in their graduates. Six (18.2%) of those programs do not currently measure leadership following graduation and physical therapy licensure. Meanwhile, most other programs (n=23) use multiple means for capturing graduate leadership outcomes. The most common method utilized is 1-year post-graduation surveys (81.8%, n=27) followed by employer surveys (57.6%, n=19), and finally 5-year post-graduation surveys (39.4%, n=13). Additionally, two programs reported employing a 3-year post-graduation survey and another single program commented on seeking input from students prior to graduation as a means for measuring student leadership pursuits.

CHAPTER 5

DISCUSSION

This study investigated the instructional strategies and assessment methods used most frequently by CAPTE accredited physical therapist education programs who provide most of their instruction in a traditional face-to-face versus distant format. A survey was electronically sent to the program directors who met participant eligibility criteria. Survey items included primarily quantitative questions regarding program demographics, curriculum, instruction, and assessment. Qualitative data was minimal and limited to open text boxes when item options were inadequate or lacked representation. This chapter includes a discussion of the: 1. Summary of Findings, 2. Study Limitations, 3. Discussion, 4. Conclusions, and 5. Implications and Recommendations for Further Research & Practice.

Summary of Findings

While current evidence has centered on defining leadership frameworks and competencies for physical therapists as well as measuring the leadership capabilities of DPT students over the course of professional education, this study aimed to determine the instructional strategies and assessment methods used to prepare students to lead upon professional entry. The overarching goal of this study was to provide guidance to educators and provide them with tools and strategies to apply to their interactions with emerging student leaders both inside and outside the classroom. With leadership development as a fairly new concept in physical therapist education, a gap exists regarding how to inform the study of leadership in the curriculum. The expectation is that the findings of this study provide a girder that will contribute to a connection among programs invested in educating future physical therapy leaders and allowing for a substantial infusion of intentionality and a measurable degree

of consistency in the ways in which educators accomplish that mounting need. Regardless of age or stage of the physical therapist education program, these results may be used to develop and evaluate leadership content within curriculum and perhaps stimulate innovation in leadership education in various instructional settings.

A large majority of programs reported inclusion of leadership development in their physical therapy curriculum. As anticipated, while there was much variation in the practices used to incorporate leadership content into the curriculum, there were high levels of agreement in the importance of training student physical therapists to lead. This coincides with the literature and attitudes articulated by other healthcare professional education degree programs (Haverfield et al., 2020; Sadowski et al., 2018; Tucci et al., 2019; Morrow, 2015).

Signature pedagogy as defined by Shulman (2005) is the fundamental teaching and learning methods that form the way in which members of a particular profession are educated and prepared. Essentially, one's professional identity is tied to the beliefs and historical approaches about teaching, accreditation requirements, and moral underpinnings to form signature pedagogy (Dow et al., 2021). As a profession, physical therapy's signature pedagogy is the human body as a teacher (Jensen, Nordstrom, et al., 2017). When examining undergraduate and graduate leadership studies, Jenkins (2012, 2018) found class discussion to be the signature pedagogy defining leadership education. What happens when the profession of physical therapy is infused with the study of leadership? Do the individual pedagogies meld to form a different teaching approach or do they conflict with unintended consequences? Dow and colleagues (2021) are asking similar questions when multiple professions, with established signature pedagogies, are working in partnership during interprofessional education and preparation for practice. The authors call for modern health professions to reexamine their signature pedagogies

to evolve with societal needs and to assuage deeply embedded or antiquated practices which may serve as an obstacle for collaboration and progress. As the demands of society and healthcare delivery systems have dictated the inclusion of interprofessional education for healthcare professionals. In many ways, it seems that the leadership development has followed.

Jenkins (2012) found class discussion to emerge as the signature pedagogy in leadership studies education. Based on the findings of this study, the instructional strategy of choice for leadership development in physical therapist education was group projects, followed by business plan development, service learning, and class discussion. Interestingly, service learning was the least frequently used instructional strategy in leadership studies (Jenkins, 2018). This may be due to differences in core values and implicit structures between the professions which express and manifest themselves through pedagogies. Like literature in leadership studies, physical therapy educators often use discussion based instructional strategies: class discussion, small group discussion, and to a lesser degree interactive lecture/discussion. In fact, when grouping instructional methods by category (discussion, analysis, experiential), findings reveal that discussion based instructional strategies narrowly surpass analysis-based strategies regarding mean frequency of use in physical therapist education. The possibility exists that the findings in this study underestimate the use of analysis- and experiential-based instructional strategies in physical therapist leadership education programs. Comments provided by programs reflected the inclusion of such learning activities indicating the survey list of instructional strategies may have limited expression. Generally, leadership education in physical therapy represents a more diverse approach to instructional methods with greater representation of analysis- and experiential-based learning activities when compared to educators in leadership studies degree programs (Jenkins,

2020). While individual instructional strategies may differ between leadership studies and physical therapy education, the concept of interaction in groups and teams is central to both.

Delivery methods and instructional strategies for leadership education differ widely among healthcare professions. Leadership training in graduate medical education was found by Sadowski et al. (2018) to be heterogeneous with a preference for the use of lecture, small group activities, and cases during instruction. Researchers have found that pharmacy schools traditionally rely on extra-curricular activities and/or elective courses to incorporate leadership content into curriculum (Ali et al., 2022; Tucci et al., 2019). On the other hand, nursing programs depend on the use of videos, simulation, and coaching in clinical settings to instill leadership development (Lins et al., 2018). Again, the signature pedagogies for each of the health professions likely influence the incorporation of the study and development of leadership into the respective curricula.

When examining methods used to assess leadership development in student physical therapists, the strong emphasis on group projects/presentations that target leading “others,” collaboration, and teamwork is evident. The remainder of the most frequently used assessment methods (portfolio or evidence collection, individualized leadership development plans, major writing/term paper, and self-evaluation) all concentrate on building “self”-leadership capacity. Similar to physical therapist assessment methods, leadership studies educators rely heavily on term papers followed by group projects/presentations. However, there is much disparity between the two fields when comparing use of research projects/presentations, quizzes, and class participation as means of assessment (Jenkins, 2018). Most of the assessment methods presented in this survey research were representative of the “self” tier of leadership. This coincides with the findings of Tschoepe et al. (2021) in which 57% of the leadership competencies expected of

entry-level physical therapists arise from leading *oneself*. Nevertheless, this presents an opportunity and a challenge for programs to create new assessment approaches that measure student leadership competencies when interacting with “others” and within the “community” or in “organizations.”

Current literature exploring assessment methods for leadership development in other healthcare professions (medicine, pharmacy, and nursing) report the use of both self-assessment tools and competency-based strategies (Sadowski et al., 2018; Janke et al., 2016; Reed et al., 2019; Linares et al., 2020). The American Society of Health-System Pharmacists (2022) developed and provided open access to a comprehensive syllabus outlining leadership development learning opportunities and assessment methods for licensed pharmacists, pharmacy students, and pharmacy residents. The competency-based tools and resources available among healthcare professions are examples from which physical therapy leadership education can model and adapt.

Discussion

Over the last decade, leadership has become an increasingly important topic in healthcare professional education and has recently gained momentum in physical therapy educational literature. This phenomenon was evident among respondents who agreed that leadership competency in entry-level physical therapist education is important (M=77.0). Similarly, over half of participating programs report the incorporation of leadership learning objectives reflected in full-time and integrated clinical education experiences despite a standardized means for assessing student leadership capacity in the profession. The APTA-endorsed and widely used Clinical Performance Instrument (CPI) incorporates leadership competencies such as initiative, communication skills, conflict resolution, and integrity. These competencies are evident in

various sample behaviors and distributed among multiple performance criteria with leading in complex situations reserved for “beyond entry-level” performance anchors (APTA, 2006).

Regardless, the incorporation of leadership goals into clinical education by respondent programs is encouraging and demonstrates commitment to developing future physical therapy leaders.

Another observation from the survey results is the strong influence of CAPTE on shaping physical therapist education curriculum through interprofessional education. In 2016, CAPTE added curricular standards related to interprofessional education. The 6F standard requires “The didactic and clinical curriculum includes interprofessional education; learning activities are directed toward the development of interprofessional competencies including, but not limited to, values/ethics, communication, professional roles and responsibilities, and teamwork.”

Curriculum related to interprofessional education is further specifically defined by standard 6L3 for clinical education and four required curricular elements (7D7, 7D28, 7D37, 7D39). In contrast to clinical education, almost 80% of respondents affirm leadership objectives embedded in interprofessional education initiatives.

Nearly half of the programs who completed this survey use the Interprofessional Education Collaborative Core Competencies to guide their leadership content during interprofessional education opportunities within the curriculum. This speaks to the value of established competencies and accreditation requirements as catalysts for curricular transformation and advancement. Furthermore, the clear impact of accreditation standards on choice of competency frameworks and curricular inclusion provides impetus for development of sound leadership competencies and recognition from CAPTE for the value of leadership development in physical therapist education programs. Currently, CAPTE criteria address leadership primarily from the scope of evaluating the qualifications and effectiveness of program

directors. One curricular element mentions leadership serially and in the context of students participating in service and advocacy at the professional and community/organizational levels. Interestingly, as an example of compliance for standard 1B, related to mission-reflected program goals, CAPTE references students and graduates as “leaders in the profession.” Presumably, this example reflects a common goal among accredited programs, yet programs lack meaningful curricular accountability as to how they are developing and measuring leadership competency among students. The establishment of core leadership competencies for health professionals and physical therapists, as well as motivation from accrediting bodies with specific leadership standards, are the required change agents for adoption of leadership development into physical therapist education.

As the demand for qualified faculty in physical therapist education programs has outpaced the supply, programs face a nationwide shortage. Many programs average 1-2 open faculty positions, often with protracted timelines for filling those positions (ACAPT, 2021c). This provides further evidence for the need to cultivate leadership early and during physical therapist education to produce the physical therapy academic faculty and clinical leaders of tomorrow. Physical therapist education programs must continue to echo the sentiments of Jensen, Hack, et al. (2017) regarding excellence and innovation in physical therapist education: “[leadership] development must begin in professional education and continue across a professional’s career.”

Study Limitations

Several variables exist which may limit the internal and external validity of the study results. When reviewing and completing the survey items, bias and inaccurate interpretation on the part of the researcher as well as the respondents cannot be excluded. Descriptors were used to

qualify instructional strategies and assessment methods in the survey to minimize variable interpretation and provide concrete examples. However, this does not eliminate the possibility of confusion or differences in meaning of wording for survey questions and options. As with any survey research, the accuracy of survey responses is dependent upon participant introspection, experience with subject matter, honesty, and memory. Program Directors or faculty designees familiar with leadership content in the program's curriculum were targeted to allow for enriched responses, enhanced precision, and greater understanding. The researcher was unable to ensure that the targeted audience was captured.

Generalizability of results is limited due to a small return rate of 16%. Less than a quarter of the eligible population completed the survey. The timing of the survey solicitation may have had a negative effect on the response rate. The survey was released during the first two weeks in March 2022, which may have coincided with spring semester breaks at many universities. When examining CAPTE Aggregate Program Data (2020), all geographical regions were represented in the sample. However, higher sample representation was evident in three regions, while six regions were under-represented in the sample distribution. Similarly, survey responses from private institutions exceeded those from public institutions, based on the CAPTE population average. Originally, purposeful sampling procedures were employed. Due to low response rates following reminder emails, sampling procedures shifted to one of convenience, introducing additional bias. Indirect and direct recruitment of participants within the researcher's personal network may have influenced the way in which program directors responded, ultimately affecting results. Finally, the sample may, and likely did, represent individuals who are interested in leadership development in physical therapist education. On the other hand, program directors who are less interested or find leadership development less important may have chosen not to

complete the survey, thereby limiting the ability to apply the research findings to the broader population of accredited programs.

Regarding survey design and instrumentation, some questions and descriptors could have been worded more clearly. For example, two assessment methods incorporated peer feedback: “peer assessment & feedback” and “leadership tool/assessment observer.” While the use of a leadership assessment tool provides an additional layer or scaffold of analysis and feedback, one may construe that those who are engaging in this exercise are also likely taking part in structured peer feedback in other instances. Limiting “observers” to faculty, clinical instructors, advisors, and mentors may have reduced the potential redundancy of these two items. Similarly, assessment and instructional methods produce potential conflicts and intersection both in the classroom and in this investigation. This is primarily evident within the “group projects/presentations” assessment method and “group projects” instructional strategy on the survey. Both methods rendered the most frequent use among participant programs. Quantity or frequency of use, however, does not reflect quality or purposefulness of implementation. While a program may utilize group projects as a means of fostering leadership development, collaboration, and teamwork, they may do so with varying degrees of intentionality and monitoring. For instance, some may randomly assign or conveniently assign students to groups while others may diversify student group representation by personality profiles, intercultural competence, or through jigsaw methods (Childs-Kean et al., 2020; Eigsti, 2015; Walker et al., 2015). The mere presence of group projects does not speak to the potential value of group work towards molding emerging leaders.

Additional instructional strategies and tools could have been considered and included by the investigator to further delineate and expand the categories and options. For example, the use

of mind mapping techniques or the mention of other more current gaming applications such as Kahoot! or Top Hat may have yielded additional responses. Furthermore, inclusion of guided professional practice opportunities and community practice resource groups as described by Smith & Crocker (2017) may have provided additional examples for leadership assessment and instructional setting within the “community” and “others” categories.

Survey items related to instructional and assessment strategies utilized a 0-100 rating scale. While this presented opportunities regarding data analysis, it also introduced challenges. In the pursuit of breadth, 25 instructional strategies and 18 assessment methods were included in the survey. The researcher did not expect that each program’s leadership curriculum would incorporate every strategy in the classroom. However, respondents managed the absence of opportunities in their curriculum differently. Some participants did not access or record a response if a particular strategy was not part of their teaching and learning practices while others recorded a zero on the rating scale. The latter approach has a large effect on the overall mean for that given strategy and the former approach has no effect on the mean value.

Lastly, while the descriptors for most assessment strategies have been previously studied and published, the categorization of assessment methods into the three tiers defined in the LCF-PT has not (Tschoepe et al., 2021). As CBE becomes more appealing in physical therapist education, reliance on a competency-based framework seemed prudent. Furthermore, the lack of availability and consistency of KSAs for physical therapists required an alternative means of classifying the assessment methods for the purpose of analysis. With this dearth of evidence, the author chose the framework as a guide because of its specificity to physical therapist practice and differentiation of competencies for the entry-level or novel clinician versus the experienced practitioner. Assigning of categories was determined through an analysis and reflection of each

assessment descriptor and the sphere or tier of which the assessment method primarily encompassed. Accurate assignment of assessment methods to appropriate tiers would influence data analysis and study results. The researcher's inexperience may have been a limiting factor in this instance and others related to study design.

Implications and Recommendations for Further Research & Practice

While several individual programs are far ahead when it comes to leadership development in physical therapist education, larger scale and multi-program studies are needed to determine the efficacy of initiatives and expand the repertoire and quality of related teaching and learning. Furthermore, longitudinal studies are recommended to examine the impact of entry-level leadership development initiatives on long-term outcomes and leadership pursuits for program graduates. CAPTE requirements for graduate follow-up (1-year and 5-year) and employer surveys are excellent existing avenues for capturing and collecting this information. While this study examined the frequency of several instructional strategies, it did not measure the effective use of those strategies.

Qualitative studies with immersion into the culture and classrooms of programs with well-established leadership tracks may elucidate the nuances of effective alignment and provision of teaching and assessment methods for leadership education. Focus groups with students and instructors, observing their interactions during leadership education, and gaining perspective on their individual and collective experiences and predilections will provide insight into the art and quality that often inspires learning and transformation (Jenkins, 2018).

Outcomes-based and qualitative evidence may serve to direct educators towards efficacious and experiential learning strategies while further differentiating leadership from historically rich physical therapy curricular content related to concepts of professionalism, management, and

advocacy. With some programs still defining their leadership content, the sharing of ideas, experiences, and resources regarding leadership-specific instructional and assessment methods would advance the mission. Possible conduits for knowledge transfer include best practice workshops, free access educational compendiums, and expert affiliation and consultation agreements.

While further research into methods for teaching and evaluating leadership growth and competency among student physical therapists will help to guide educators and somewhat standardize curriculum, other barriers exist. These must be explored and circumvented to allow for increased buy-in. Mounting student debt resulting in trends towards shortening degree programs are realities to consider when suggesting inclusion of potentially new leadership content into an already complex and crowded curriculum.

From a practice perspective, the profession is urged to embrace the discovery and dissemination of knowledge related to curricular and extra-curricular activities that target experiential learning opportunities, allow for meaningful and structured mentoring, and expand to community-based learning environments. Programs are encouraged to create opportunities for leadership development training, beyond conceptual understanding and personal growth, to develop skills and expertise through structured mentorship in clinical settings. Other underutilized options within this study's sample include graduate student employment and structured extra-academic leadership development. Graduate assistantships within the school or program not only reinforce learned material but may also allow for emerging student leaders to receive coaching from faculty, serve as mentors to their peers, and teach other students in small groups. University level as well as regional or state chapter student leadership development academies were seldom used by participating programs and may be a valuable and feasible way

to nourish students without overburdening a dense curriculum. These experiences often serve to deepen relationships and promote professional formation in ways the classroom cannot.

Priest & Jenkins (2019) contend that effective “leadership education design and delivery [must be] intentionally and inherently inclusive, relational, and experiential.” Jenkins & Allen (2017) outlined a five-step design process for leadership education that may be helpful for physical therapy programs planning and evaluating leadership content. Two of the five steps can be facilitated by the findings herein. The process begins with identification of learning outcomes and selection of desired leadership competencies, followed by selection of appropriate instructional strategies, consideration of situational/contextual factors, designing appropriate assessment tools, and, finally, providing feedback opportunities (Jenkins & Allen, 2017). Repeatedly throughout the literature from various professions and degree programs, early and longitudinal exposure to leadership education in the curriculum is recommended to enhance learning and carryover. Many advocate for the use of a leadership framework to help guide and inform curricular design (Sadowski et al., 2018; Tschoepe et al., 2021). In this study, nearly one-third of programs that provide leadership education do not utilize a foundational framework for their leadership curriculum. The recommendations above may be considered as scholars and faculty examine leadership development in physical therapist education programs.

Conclusion

On the heels of other healthcare professions and dictated by the demands of current healthcare systems, physical therapist education has begun to incorporate leadership development into curriculum. The findings of this study provided further insight into how programs can incorporate leadership development and the ways in which extra-curricular activities can be considered in the same process. Early and widespread adoption of leadership

principles and education into physical therapist education will not only help to transform society through preparation of collaborative clinical leaders, but also supply future physical therapy educators and grow our culture of excellence.

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APPENDIX A: IRB LETTER



Office of Research Integrity
Institutional Review Board
One John Marshall Drive
Huntington, WV 25755

FWA 00002704
IRB1 #00002205
IRB2 #00003206

March 6, 2022

Dennis Anderson, Ed.D.
Leadership Studies, COEPD

RE: IRBNet ID# 1862551-2

At: Marshall University Institutional Review Board #2 (Social/Behavioral)

Dear Dr. Anderson:

Protocol Title: [1862551-2] Leadership in Physical Therapy Education: Effects of Program Emphasis, Instructional Methods, and Assessment Strategies on Post-Licensure Leadership Pursuits and Perceived Competency

Site Location: MUGC

Submission Type: Amendment/Modification APPROVED

Review Type: Exempt Review

The amendment to the above listed study was approved today by the Marshall University Institutional Review Board #2 (Social/Behavioral) Chair. This amendment is to change wording of two surveys and a minor change on a consent.

This study is for student Gretchen R. Prather.

If you have any questions, please contact the Marshall University Institutional Review Board #2 (Social/Behavioral) Coordinator Lindsey Taylor at (304) 696-6322 or l.taylor@marshall.edu. Please include your study title and reference number in all correspondence with this office.

Sincerely,

Bruce F. Day, ThD, CIP
Director, Office of Research Integrity

APPENDIX B: PROGRAM CHAIR/FACULTY SURVEY

Part I: Program Demographic Information

1. Please provide the name of your physical therapy program.
2. Please provide the location (city, state) of your physical therapy program.
3. Please select the type of higher education institution that best describes your program.

(*Obtained from CAPTE website)

Public

Private for-profit

Private not-for-profit

Other (free text)

4. How many cohorts does your program matriculate each calendar year?
5. How many students per cohort are admitted to your program?
6. Describe your program's curriculum.

Case-based

Lifespan

Problem-based

Modified problem-based

Systems-based

"Guide"-based

Traditional

Hybrid

Other (free text)

7. How many credits are required for completion of your program?

Part II: Leadership Curriculum

8. How many of your program faculty have completed an APTA fellowship in education leadership?

9. Is leadership development included in your program's curriculum?

10. Which of the following best describes your program's commitment to leadership content in physical therapist education?

Established, required, stand-alone course

Established, elective, stand-alone course

Part of a required professional practice course

Leadership thread, woven throughout several courses

Other (free text)

11. On a sliding scale of 0-100, where 0 = not at all important and 100 = extremely important, please respond to this question: To what extent do you think it important that leadership competency be established as an entry-level expectation for student physical therapists?

12. Which leadership framework does your program use as the foundation of content delivery and/or assessment? **Select all that apply.**

None

Competency Profile for Physiotherapists in Canada

Duke Healthcare Leadership Model

Emotionally Intelligent Leadership

Five Practices of Exemplary Leadership

Healthcare Leadership Alliance – Competency Directory

Interprofessional Education Collaborative Core Competencies

Leadership Competency Framework for Physical Therapists

National Center for Healthcare Leadership Framework

Social Change Model of Leadership Development

Other (free text)

13. What instructional strategies does your program utilize to promote student leadership development? After review of each description, use the 0-100 sliding scale with 0 defined as “never” and 100 defined as “always” to qualify the frequency with which you incorporate the instructional strategy.

Business Plan Development: Students develop a formal, written start-up plan for a business containing mission, vision, strategic plan, goals and financial forecasts.

Case Studies: Students examine written or oral stories or vignettes that highlight a case of effective or ineffective leadership.

Class Discussion: Instructor facilitates sustained conversation and/or question and answer segment with the entire class.

Clinical Education Experiences: A formal supervised experiential learning, focused on development and application of patient/client-centered skills, professional behaviors and *containing an explicit component of leadership development.*

Debates: Student teams argue for or against a position using course concepts, evidence, logic.

Games: Students engage in interactions in a prescribed setting and are constrained by a set of rules and procedures. (e.g., Jeopardy, Who Wants to be a Millionaire, Family Feud)

Group Projects: Assignments in which students work together in small groups to accomplish a common goal.

Guest Speaker: Students listen to a guest speaker/lecturer discuss their personal leadership experiences.

Icebreakers: Students engage in a series of relationship-building activities to get to know one another.

In-Class Short Writing: Students complete ungraded writing activities such as reflective journals or responses to instructor prompts designed to enhance learning of course content.

Intra-professional events: organized events in which students from different disciplines within the same profession (PT/PTA) learn from, about and with, each other.

Inter-professional events: occasions when students from two or more healthcare professions interact and learn together with the object of cultivating collaborative practice for providing patient-centered care.

Interactive Lecture/Discussion: Instructor presents information in 10-20 minute time blocks with period of structured interaction/discussion in-between mini-lectures.

Lecture: Students listen to instructor presentations lasting most of the class session.

Media Clips: Students learn about leadership theory/topics through film, television, or other media clips (e.g., YouTube, Hulu, TED talks).

Priming activities: An assignment completed in preparation for an upcoming topic, event, or activity.

Problem-based Learning: Students learn about leadership through the experience of problem solving in specific situations.

Role Play Activities: Students engage in an activity where they act out a set of defined role behaviors or positions with a view to acquire desired experiences.

Self-Assessments & Instruments: Students complete questionnaires or other instruments designed to enhance their self-awareness in a variety of areas (e.g., learning style, personality type, leadership style).

Service Learning: Students participate in a service learning or philanthropic project.

Simulation: Students engage in an activity that simulates complex problems or issues and requires decision-making.

Small Group Discussions: Students take part in small group discussions on course topics.

Story or Storytelling: Students listen to a story highlighting some aspect of leadership; often given by an individual with a novel experience.

Student Peer Teaching: Students, in pairs or groups, teach designated course content or skills to fellow students.

Teambuilding: Students engage in group activities that emphasize working together in a spirit of cooperation (e.g., setting team goals/priorities, delegating work, examining group relationships/dynamics).

Please list any other instructional strategies that you use to develop physical therapy leaders that were not mentioned above. (free text)

14. How frequently do you assess student competency related to leadership using the following methods?

Please review the following assessment strategies and their associated descriptors, then use the 0-100 sliding scale, with 0 defined as “never” and 100 defined as “always”, to qualify your response.

Class Participation/Attendance: Students are given points for active participation in course activities.

Exams (Oral): Students complete tests or exams that last the majority of the class period intended to assess subject matter mastery and are provided in an oral format.

Exams (Written): Students complete tests or exams that last the majority of the class period intended to assess subject matter mastery and are provided in a written format.

Group Projects/Presentations: Students work on a prescribed project or presentation in a small group.

Individual Leadership Development Plans: Students develop specific goals and vision statements for individual leadership development.

Leadership Tool/Assessment Observer: Student and observer (faculty, advisor, mentor, peer) completes leadership inventory and compares observations and ratings.

Together develop a plan for growth.

Major Writing Project/Term Paper: Students write a significant paper exploring course content or research (such as a literature review) as a major course assignment.

Observation/Interview of a Leader: Students observe or interview an individual leading others effectively or ineffectively and report their findings to the instructor/class.

Peer Assessment & Feedback: Structured opportunities for students to critique and give feedback to each other based on their work and performance.

Portfolio or evidence collection: Students document their own learning through the creation of a course portfolio.

Quizzes: Student complete short, graded quizzes intended to assess subject matter mastery.

Reflective Journals: Students develop written reflections on their experiences or understandings of lessons learned about course content.

Read and Respond: Students are graded on their responses to questions generated by the instructor or from the end of the text chapter for the purpose of allowing students to explore specific ideas or statements in depth and breadth.

Research Projects/Presentations: Students actively research a leadership theory or topic and present findings in oral or written format.

Self-evaluation: Students respond in writing to criteria set for evaluating their learning.

Short Papers: Students author one or more short papers (ten pages or less in length) exploring.

Skill Demonstration: Students physically represent learning through problem solving ability in relevant contexts.

Video Creation: Students create short video presentations to be shown in class.

15. Please list any other assessment strategies that you use to develop physical therapy leaders that were not mentioned above. (free text)

16. What extra-curricular or co-curricular opportunities are available by your program to promote student leadership development? **Select all that apply.**

Graduate Assistantship

Networking events with other PT professionals

Tutoring of junior student physical therapists

Participation (beyond membership) in national association (i.e., poster or platform presentation, funded conference attendance, core ambassador.)

Participation (beyond membership) in state/chapter association (i.e., poster or platform presentation, funded conference attendance, student SIG.)

Mentoring of cohort/class officers

Community service

Mentoring of junior student physical therapists

State or regional student leadership development program

Pre-Physical Therapy Club involvement

Departmental Committee student representation

State legislative advocacy

Federal legislative advocacy

17. Please list any other extra-curricular or co-curricular activities that you use to develop physical therapy leaders. (open text)

18. Does your program have a pro bono clinic or program clinic that allows for regular student clinical experience?

Yes (If yes, then answer next question)

No

19. Are curricular learning objectives addressing leadership development connected to student clinical experience in the program or pro bono clinic?

Yes

No

20. Are curricular learning objectives addressing leadership development connected to student full-time clinical experiences?

Yes

No

21. Are learning objectives addressing leadership development embedded into inter- and intra-professional learning activities?

Yes

No

22. How is your program measuring leadership endeavors for your program graduates?

Select all that apply.

We are not measuring leadership endeavors in our graduates

1-year post-graduation surveys

5-year post-graduation surveys

Employer surveys

Other (free text)

23. Which, if any, of the following opportunities are offered by your program? (Obtained from CAPTE and ABPTRFE website searches)

Residency

Fellowship

PT-PhD

PT-MBA

PT-MHA

PT-MPH

None

Other (open text)

APPENDIX C: PERMISSION TO USE DEFINITIONS (JENKINS)

Re: Permission - EdD dissertation

From: Dan Jenkins <daniel.m.jenkins@maine.edu>
Sent: Thursday, October 21, 2021 6:55 PM
To: Pfof, Gretchen <gretchen.pfof@marshall.edu>
Subject: Re: Permission - EdD dissertation

Dear Gretchen,

Thank you for your email. Yes, I will enthusiastically agree to permit you to use my published definitions of instructional and assessment strategies as part of your survey.

I must also share that this is a very ironic communication for me because, in 2009 when I was a Ph.D. student working on my dissertation, I reached out to Dr. Scott Allen at John Carroll University, whose research included some of the definitions that I couldn't locate from other sources.

Best of luck in your research!

Sincerely,

Dan Jenkins, Ph.D.

Chair and Associate Professor
Leadership & Organizational Studies
(207) 753-6592

<http://usm.maine.edu/leadership>

Achiever | Strategic | Learner | Context | Focus

Please check out the [Leadership Educator Podcast](#) and follow me [@Dr_Leadership!](#)



APPENDIX D: INFORMED CONSENT FACULTY/PROGRAM

Anonymous Survey Consent

You are invited to participate in a research project entitled “Leadership in Physical Therapy Education: Effects of Program Emphasis, Instructional Methods, and Assessment Strategies on Post-Licensure Leadership Pursuits” designed to analyze the teaching and assessment methods currently used for leadership development in physical therapist entry-level education programs and their effect on post-licensure graduate leadership involvement. The study is being conducted by Dr. Dennis Anderson and Gretchen Prather from College of Education and Professional Development and has been approved by the Marshall University Institutional Review Board (IRB). This research is being conducted as part of the dissertation for Gretchen Prather.

This survey is comprised of approximately 25 questions and will take about 15 minutes to complete. Your replies will be anonymous, so do not type your name anywhere on the form. There are no known risks involved with this study. Participation is completely voluntary and there will be no penalty or loss of benefits if you choose to not participate in this research study or to withdraw. If you choose not to participate you can leave the survey site. You may choose to not answer any question by simply leaving it blank. Once you complete the survey you can delete your browsing history for added security. Completing the on-line survey indicates your consent for use of the answers you supply. If you have any questions about the study, you may contact Dr. Dennis Anderson at 304-746-8989, Gretchen Prather at 304-696-5608.

If you have any questions concerning your rights as a research participant, you may contact the Marshall University Office of Research Integrity at (304) 696-4303.

By completing this survey, you are also confirming that you are **18** years of age or older.

Please print this page for your records.

If you choose to participate in the study, you will find the survey at https://survey.az1.qualtrics.com/jfe/form/SV_1GNMmA4FOz0xLYW